

SELECTION BY CONSEQUENCES AND THE MARKETING FIRM

By

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*Consumer Behaviour Analysis Research Group, Marketing and Strategy
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DECLARATION

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

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To my wife and son

“One way to break free from traditional academic demarcations, and to stimulate new thinking is to make available, and to juxtapose, different approaches to a single topic” Hagström and Chandler Jr (1998).

Summary

The research operationalizes the Darwinian meta-principle Selection by Consequences to conduct an empirical investigation. The project originates from a concern to understand the distal reasons why many of the marketing practices adopted by Wall's appear to have persisted relatively unchanged for several decades and to have consistently conferred advantage to allow this manufacturer to dominate the UK ice cream market since before WWII.

Central to Selection by Consequences is the claim that socio-cultural practices evolve through a process similar to biological natural selection and analogous to operant conditioning. The aim of the research is to assess and evaluate the empirical validity of this latter claim.

A review of the literature suggests three pressing obstacles immediately barring the project, namely, relative incompleteness of the natural selection-operant conditioning analogy, methodological issues when applying operant principles (uncovered scientifically within experimental laboratories) to frame corporate market practices in the real world, and, insufficiency of these principles to account for the idiosyncrasies of the economic behaviour of organisations. The Marketing Firm provides the theoretical underpinning of this research because it begins to tackle the latter problems.

After addressing these issues, the research interprets qualitative evidence narrating a 1979 investigation into the strategic practices of Wall's conducted by the Monopolies and Mergers Commission. The inquiry is designed as a qualitative longitudinal case study.

Generally, the evidence upholds the operant conditioning characterisation. However, several theoretical elaborations and empirically grounded refinements must be taken into account. Future research is directed towards further clarification and testing the analogy to destruction.

As its primary original contribution, the research generates the first empirical study wherein Selection by Consequences is operationalized to produce an operant account of the evolutionary selection of marketing practices. The study also contributes by suggesting means to demonstrate, albeit qualitatively, processes typically identified through experimental methods and quantitative data.

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List of Abbreviations

AO	Abolishing Operations
BPM	Behavioural Perspective Model
CBA	Consumer Behaviour Analysis
CTs	Confectioners and Tobacconists
CTNs	Confectioners, Tobacconists, and Newsagents
EAB	Experimental Analysis of Behaviour
EO	Establishing Operations
FMCG	Fast Moving Consumer Goods
FTA	Fair Trading Act, 1973
JLC	J. Lyons & Company
MO	Motivating Operations
NSV	Net Sales Value
PLC	Product Life Cycle
SGSs	Small General Stores
SMC	Selection by Marketing Consequences
UK	United Kingdom
Wall's	T. Wall and Sons (Ice Cream) Ltd (1922 – 1981) Birds Eye Wall's (thereafter)

Introduction

Questions Motivating this Research

As a perspective within economic psychology, the *Marketing Firm* (Foxall 1999b) applies reinforcement-learning theory to develop an empirical understanding of the situational influences on the market practices of individual firms interacting within dynamic real world environments. Operant psychology yields empirically grounded principles underlying reinforcement learning theory. These principles are generally derived through experimental means.

The research agenda of this perspective is not clearly defined but may be broadly characterised as being oriented towards developing a theory of the firm based on a set of behavioural foundations that complement *and* rival the cognitivist assumptions (particularly, bounded rationality) prevailing in the field of the economics of organisation. Both approaches stand in contrast to the rationality postulate in standard economic theory and both aim to characterise their respective expectations of the behaviour of firms more realistically by going beyond the standard conceptualisation of optimising strategic behaviour. As a natural science of behaviour, operant psychology provides an explanation of human behaviour based entirely on the environmental determinants of behaviour eschewing levels of observation that go beyond those wherein behaviour is located, delineated, and directly or indirectly accessible to experimental methods (Foxall 1993c, 1996a). Arguably, therefore, reinforcement learning theory provides a systematic and rigorous foundation when research is concerned with generating an understanding of the role the market environment plays in determining patterns of strategic firm behaviour and of the dynamics involved in shaping strategic adaptation.

In addition, the *Marketing Firm* shifts attention away from the portrayal of the firm as a production function and instead focuses on literal *and* social exchange and on the concomitant reciprocal and mutually reinforcing interaction between firms, customers, and other relevant stakeholders populating product and factor markets.

Despite the potential scope for developing such an alternative route to characterising the strategic behaviour of profit-making organisations, the approach has attracted little theoretical development and research. Indeed, the case study of Vella and Foxall (2011) is the only instance of research from this perspective. The study utilises data from an investigation by the United Kingdom (UK) competition regulator into monopolistic practices of national manufacturers within the ice cream market during 1999 and develops a retrospective interpretation of how Wall's, the dominant ice cream manufacturer, appeared to regulate the environmental variables that, presumably, influenced the behaviour of consumers, channel members, and rivals.

At the theoretical level, the current research project is motivated by a concern for further developing the dimensions of the *Marketing Firm* and applying the perspective to generate an understanding of the degree of continuity in the practices of individual firms. From an empirical standpoint, the study is concerned with understanding one of the unexpected findings noted by Vella and Foxall (2011): According to the details provided in the regulator's investigation there was a marked degree of stability and continuity in the market practices of Wall's – exclusivity, a differential reward system, and other strategic features appeared to have persisted for several decades.

Was this finding purely incidental?

The mass consumption of factory-made individually-wrapped pre-hardened ice cream emerged as a recurring pattern of consumer behaviour within the UK during the early 1920s with the introduction of large-scale production, nationwide distribution and retailing, and mass consumer marketing programmes by Wall's. By 1939, Wall's registered a turnover of £1.5m and commanded a substantial market share and retail presence. Within forty years, Wall's emerged to dominate the market and in 1976 the organisation registered a net sales value of £48.1m and a market share estimated between 34% and 37% (Monopolies and Mergers Commission 1979). Over subsequent decades Wall's retained its leadership in the UK with its total market share never falling below the 40% threshold despite strong competition, adverse weathers and economic conditions in the UK, and repeated regulatory intervention

(Monopolies and Mergers Commission 1979, 1994; Competition Commission 2000; Marsh 2012; Key Note 2013). At the height of its dominance in 1998, Wall's controlled 70% of the market (calculated on total retail sales value) (Competition Commission 2000). Recently, a research firm valued the UK market for ice cream in 2013 to stand at a staggering £1.086 billion (estimated on retail selling prices) (Key Note 2014). Three of Wall's brands, namely Magnum, Cart D'Or, and Cornetto, are believed to command a 14.8%, 6.1%, and 4.4% share of industry-wide ice cream sales respectively (Best 2014). According to the *Financial Times*, Wall's holds approximately 40% of total market share and the next largest single competitor, R & R Ice Cream, controls 30% (Marsh 2012).

The market practices deployed by Wall's and other manufacturers within the UK were the subject of four investigations by the regulator between 1979 and 2000. Common to these inquiries is evidence strongly indicating that the marketing mix configurations used by the leading manufacturers remained relatively unchanged since the emergence of the mass-consumption market. Wall's practices of tying distribution and retail intermediaries in exclusive arrangements and of differentially rewarding channel members according to the volumes of ice cream sold are two examples of such repeated patterns of market behaviour. The investigations appear to imply that right up until 2000, monopoly power was the most important driver of Wall's commercial success.

Prima facie, the investigations by the regulator suggest that Vella and Foxall's (2011) observation is not incidental and the evidence raises several questions: To what extent did Wall's practices change over its history? What market dynamics were involved in determining behavioural continuity and change? How did these dynamics operate to result in the observed regularity, persistence, and change? Did the marketing practices of Wall's have particular features and properties besides a monopolistic bent that conferred advantage within the market? What were the determinants of these features and properties? These questions lie at the heart of this inquiry.

Summary and Overview of the Research

Evolutionary approaches on strategy are explicitly concerned with providing historical explanations of the *path-dependent cumulative developmental* processes or *dynamics of strategic continuity and adaptive change* that result in performance differences among firms (Barnett and Burgelman 1996). Within economics, adaptive change has a long history of being conceptualised in terms of biological natural selection whether by way of analogy or assuming a generalised Darwinian principle (Alchian 1950; Nelson and Winter 1982; Vromen 1995; Hodgson 1999; Hodgson and Knudsen 2010; Vromen 2012; cf. Penrose 1952; Witt 2003, 2008). As one of several evolutionary mechanisms, natural selection is commonly characterised in terms of the culling or filtering action of environmental factors operating on certain traits or features selectively eliminating some while selectively retaining others so that those traits that are more suited to the specifics of the environment remain and proliferate. Filtering is a “consequence-oriented force” (Lennox 1992, p. 333; Van Parijs 1981): traits, in interaction with the environment, have consequences that are causally relevant to the extent of their presence within a population. In certain environments some of these traits have consequences that confer survival and reproductive advantages to those who/which have them (Lennox 1992).

Within operant psychology, Skinner (1981) is the first to draw an explicit analogy, through the Darwinian meta-principle *Selection by Consequences*, between natural selection in the biological domain and operant conditioning as applicable to the selective retention and elimination of socio-cultural practices. Operant conditioning and reinforcement learning are synonymous insofar as the former characterises a model of human learning (i.e., change in behaviour) under experimental conditions and the latter is used to describe the same mode of learning in the real world (Blackman 1974).

The scope of the current project lies in developing an evolutionary account of the processes resulting in the continuity and change in the strategic behaviour of firms by appealing to the analogy described in *Selection by*

Consequences and in evaluating the applicability of this analogy. The economic realm is assumed subset to the socio-cultural domain.

Since Skinner's analogy has never been applied to generate an evolutionary understanding of marketing practices, the research stands as a first approximation or baseline framework for future endeavours. The project focuses exclusively on addressing three critical issues in developing this first approximation and producing the evaluation: First, uncovering the substantive dimensions of the analogy across Skinner's primary publications to assess its completeness, strengths, and weaknesses. Second, overcoming the most immediate conceptual and methodological obstacles in applying an array of operant principles uncovered in controlled experimental spaces using human and non-human individuals to the marketing practices of firms observed in actual market settings. One substantial obstacle concerns the extent of continuity of operant principles and concepts as one moves from experimenting with non-human animals in labs to framing human behaviour in real life. Another obstacle relates to selecting an appropriate research method besides experiments, the *sine qua non* of an operant researcher's methods toolkit. This problem is inherent to researching real world behaviour. Third, having addressed these points, delineating an appropriate sensitizing framework based on the principles of operant psychology and utilising this framework to conduct a systematic and rigorous investigation that generates a valid and reliable interpretation of the relevant evidence describing real world behaviour of firms.

The *Marketing Firm* provides the main theoretical underpinning of the project since it represents an operant perspective to the theory of the firm and accounts for some of the conceptual and methodological obstacles via the use of an apposite interpretive device. This device, the *Behavioural Perspective Model* (Foxall 1990, 1996b, 2010b), accounts for a range of problems arising when applying operant principles to human economic behaviour in natural settings. Conceptual obstacles in relation to the completeness of *Selection by Consequences* are overcome by appealing to the generic natural selection framework (Variation, Selective Retention, and Inheritance-Replication) found in evolutionary economics.

The research re-evaluates and extends the behaviourist case study method developed in Vella and Foxall (2011, 2013). The study uses qualitative longitudinal evidence (covering the period 1922 to ca.1978) contained within the first ice-cream investigation conducted and published by the UK competition regulator. The empirical focus is on the marketing practices of Wall's at retail with special attention given to the stable and recurring feature of organising and coordinating intermediary relationships through exclusivity arrangements. The evidence is interpreted through the construction and use of a sensitizing framework that relies almost exclusively on the *Behavioural Perspective Model* as applied within the *Marketing Firm*.

Structure of the Thesis

The thesis is organised as follows: Chapter 1 provides an essential background to the research explaining the analogy between biological evolution through *Natural Selection* and operant conditioning, highlighting key conceptual and methodological obstacles to applying *Selection by Consequences* and operant psychology to interpret the behaviour of individual firms, and describing the general strategy adopted to overcome these issues. The chapter also details further the scope, objectives, and key deliverables of the research. Chapter 2 describes the research method and its design. Chapter 3 presents a critical review of *Selection by Consequences* defining the relevant terms and principles as these are found in operant psychology. The chapter also extends Skinner's thinking with reference to the generic *natural selection* framework. Chapter 4 rests on these principles to specify the sensitizing framework together with a number of research propositions, operational definitions, and measures to apply in the research. The *Behavioural Perspective Model* and the *Marketing Firm* are discussed extensively within this chapter. Together chapters 3 and 4 form the theoretical heart guiding the research and represent the literature review. Chapter 5 analyses and interprets key findings from the evidence discussing these empirical observations and linking them to the literature review. Chapter 6 evaluates the entire research process remarking on the appropriateness of the *Selection by Consequences* analogy and on the limitations of the study.

Chapter One

Setting the Scene: Issues and Questions

1. Introduction

Employing an evolutionary perspective is one way of modelling *continuity and adaptive change* in the behaviour of firms as these interact and engage with the specifics of their market environments. The approach usually focuses on processes of gradual development over time (even though sudden disruptive changes do feature) (Vromen 1995) with the main emphasis being on the dynamic and processual nature of change (Barnett and Burgelman 1996; Marengo and Willinger 1997; Nelson and Winter 2002; Dosi and Marengo 2007; Hodgson and Knudsen 2010; Dosi 2013; Nelson 2013). One specific concern of the approach on strategy relates to providing a historical explanation of path-dependent cumulative developmental processes that result in performance differences among firms (Barnett and Burgelman 1996)¹.

Several authors have drawn the explicit analogy between the winnowing process of biological natural selection and the filtering dynamic of adaptive or trial-and-error learning or problem solving (Campbell 1956; Dennett 1975; Van Parijs 1981; Gamble 1984; Langton 1984; Plotkin 1987; Loasby 2000; Vanberg 2002; Blute 2010).

Essentially, this research project inquires whether the evolution of the marketing repertoire of an individual firm by the economic analogue of natural selection may be characterised usefully in terms of *one* particular model of adaptive or trial-and-error learning within psychology, that of *operant conditioning*. Of empirical interest are the practices (including their characteristic traits, for example, exclusivity contracts with retailers) within the marketing repertoire of Wall's within the UK ice cream industry and competitive market selection.

¹ The evolutionary conceptualisation thus differs radically from the static view offered by the neo-classical economic theory of the firm which portrays individual firms responding passively, optimally, and instantaneously to exogenous environments (Nelson and Winter 1982; Vromen 1995) without regard to firm heterogeneity, to constraints imposed and opportunities generated by past decisions, and the nature of the relationship between the environment (as the independent variable) and firm behaviour (as the dependent variable). In these latter accounts, competitive strategy is the result of rational choice. For a critique of the neo-classical or "orthodox" theory of the firm from an evolutionary perspective refer to Nelson and Winter (1982). Refer to Simon (1976) for a description and critique of rational choice and associated assumptions on and expectations of the behaviour of the firm as conceived in standard economic theory.

The natural selection evolutionary mechanism, as it applies to economic behaviour, is an important focal point in developing this investigation. The research assumes that continuity and change of socio-cultural practices may be usefully conceptualised and described in terms of evolution by Darwinian natural selection (Hodgson 2002; cf., Witt 2003). Biological and socio-cultural evolution are considered as subsets of an overarching selection-based theoretical framework through which change may be conceptualised. However, fundamental differences do exist (Campbell 1969; Metcalfe 1998; Becker 2001; Hodgson 2002; Knudsen 2002; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). One such difference, for example, is that within evolutionary biology the characteristics acquired during an individual's lifetime are not heritable. In contrast, socio-cultural evolution allows such form of inheritance².

As an inevitable consequence of focusing on natural selection, the research draws a number of analogies from evolutionary biology (Hodgson 1994; cf. Witt 2003)³. For example, the analogy is posited between biological reproduction and offspring and the capacity of marketing practices to generate behaviour within firm-customer relations that terminates in the literal exchange of the brands of the firm. The marketing mix is encoded with feedback and instructions (e.g., packaging information, brand names, catchy slogans) to facilitate first-time and repeat purchases and the proliferation of purchase and consumption. The economic equivalent of "offspring", therefore, relates to individual behaviour terminating successfully in a literal exchange transaction.

² This is the Lamarckian dimension. See, for example, Hodgson (2001b), Hodgson and Knudsen (2010) and Hodgson (2011).

³ Hodgson (1994) argues, for example, that the application of the natural selection analogy to understand economic evolution requires the adoption of analogous principles. Witt (2003) makes his case suggesting that "the human economy is, at least in its modern forms, hardly explicable in terms of the theory of natural selection" (p. 3). On a more general note, two principal evolutionary interpretations co-exist within evolutionary economics: the Schumpeterian approach that generally eschews biological references and analogies, and a non-unified Neo-Darwinian perspective that utilises methodological (by way of analogy) or ontological arguments as a basis for establishing an evolutionary explanation (Witt 1993; Vromen 1995; Hodgson 1997, 2002; Witt 2003; Metcalfe 2005; Witt 2008; Hodgson and Knudsen 2010; Vromen 2012). Vromen (2012) offers an authoritative introduction of the current debate surrounding the ontological issues within evolutionary economics. Both Schumpeterian and Neo-Darwinian approaches are not mutually exclusive in the sense that Schumpeter's work is extremely influential. Nelson and Winter (1982), for example, offers a seminal contribution where both influences have been brought to bear on evolutionary change.

To account for the limitations and failures when crossing over from the biological to the socio-cultural domain (see Campbell 1969; Niman 1994; Hodgson 2002; Witt 2003; Blute 2010), the research only posits its analogies at the methodological level and, therefore, do not constitute ontological assumptions (cf. Hodgson 2002; Hodgson and Knudsen 2010). Rather the treatment reflects an epistemological claim: the usefulness of characterising economic change in terms of natural selection, biological analogies, and operant principles may only be uncovered through empirical research designed to explore the scope and limits of such characterisations and to test them to destruction. Thus, analogies are only a means for improved theorising and generating *working hypotheses* or *sensitizing concepts* for use in current and future research⁴.

Chapter 1 provides an essential background to the research. Section 1.1 defines the terms *evolution* and *natural selection* and gives an overview of the analogy between biological evolution through natural selection and operant conditioning. Within operant psychology, Skinner was the first to explicitly draw the analogy and apply this to socio-cultural evolution in *Selection by Consequences* (Skinner 1981)⁵. The term *operant conditioning* is, therefore, the key construct within the research and is defined.

Section 1.2 provides an overview of *Selection by Consequences* highlighting key conceptual and methodological obstacles to applying it and associated operant principles to interpret the behaviour of individual firms. Three obstacles immediately hinder the development and application of a

⁴ Section 1.3 describes the methodological strategy of the research. Chapter 2, Section 2.3.6A, details the treatment of analogies as sensitizing concepts (Blumer 1954; Vella and Foxall 2013). For the purposes of this Introduction, it suffices to say that the methodological function of sensitizing concepts as explained by Blumer (1954) is three-fold: (a) they act as clear reference points providing direction in probing, analysing and interpreting empirical evidence of social phenomena; (b) although these concepts require formal definition, they are best demonstrated through empirical examples. In other words, sensitizing concepts connect theory to empirical findings and vice versa; and, (c) sensitizing concepts are themselves subjected to testing in empirical research, to evaluation, and either to refinement if found useful or otherwise abandoned. In other words, sensitizing concepts function as “working hypotheses” (Guba and Lincoln 1979, pp. 38-40).

⁵ Skinner’s cultural analogy is irregularly dispersed across several of his publications (namely in Skinner 1953, 1961b, 1966a, 1969, 1971, 1973, 1974, 1978, 1981, 1984b, h, i, f, a, e, 1986, 1989a, b). Skinner (1981) is the publication wherein he synthesised a portion of his view under the meta-principle “Selection by Consequences.” See also Chapter 3, namely Section 3.3.

theoretical framework based on Selection by Consequences to understand the evolution of marketing practices: first, Skinner's (1981) cultural evolution-operant conditioning analogy appears incomplete. The principles underlying operant learning do appear to provide a means to develop a strong retrospective characterisation of how the environment operates, through the consequences of behaviour, to retain responses that are relatively adapted to prevailing conditions and eliminate those which are not (i.e., the winnowing function of the natural selection process). Thus, patterns of behaviour that are more adapted to environmental conditions are retained at the expense of those patterns that are less adapted. However, Skinner did not provide adequate treatment of the other necessary conditions specific to characterising socio-cultural evolution through natural selection. Second, operant conditioning is a term that is used to describe learning processes among human and non-human individuals under experimental conditions where learning is defined as changes in observable behaviour. The issues here relate to (1) the extent to which human learning is different from that in other animals, (2) the fundamental differences between contrived and simple experimental spaces and complex real world contexts, and, (3) the applicability of a psychology modelled on individuals to characterising the behaviour of firms. Third, the *sine qua non* of operant research is the use of experimental methods and quantitative data. What alternative methods are available to generate knowledge based on operant principles when experiments are not possible or desirable and when appropriate quantitative data is not available? How do we treat the knowledge derived from an application of operant principles through these alternative methods? Section 1.3 describes the strategy adopted to resolve these obstacles within the research.

Section 1.4 details further the purpose, objectives, questions, and key deliverables of the research.

1.1 The Analogy between Natural Selection and Operant Conditioning

1.1.1 Evolution by Natural Selection

Within this research, *evolution* refers to an accumulation and a sequence of changes that affect the characteristics or traits of individuals or a population from one generation to the next (Van Parijs 1981; Endler 1986; Knudsen 2002; Ridley 2004). Rather than simply referring to changes over time or changes during the lifetime of an individual (a single generation), the focus of evolutionary interpretations is on changes, whether slight or substantial (Futuyma 2009), within the lineage of a characteristic between generations (Ridley 2004)⁶. Rather than macroevolution, the research focuses exclusively on small-scale or *microevolution*, i.e., changes in the distribution of certain patterns of practice and related traits within a single population of marketing repertoires over generations through the economic analogue of natural selection. Therefore, with respect to exclusivity, for example, what is of concern is the extent to which Wall's uses this contractual form and the changes in the frequency distribution of retailers entering exclusivity agreements. The use of contractual form by Wall's and retailers is considered relative to alternative forms of arrangements (e.g., non-exclusivity, franchising) *and* over generations.

Natural selection is only one of a number of mechanisms that bring about evolutionary change and, therefore, should not be considered as synonymous to evolution (Sober 1984; Endler 1986; Ridley 2004; Futuyma 2009)⁷.

⁶ A *lineage* refers to a specific relation, i.e., an "ancestor-descendant" sequence (Endler 1986; Ridley 2004; Futuyma 2009) or chain. A *characteristic* refers to any distinguishable attribute or trait or feature or property an individual or a population (Ridley 2004). In contrast to biological evolution, socio-economic evolutionary change unfolds over successive *notional* generations (Aldrich and Pfeffer 1976; Langton 1979; Metcalfe 1998; Becker 2001; Metcalfe 2005) or repeated iterations or cycles of variation, environmental interaction, and replication (Hull *et al.* 2001, 2004). Each of these iterations comprises the three necessary components of natural selection variation, selective retention and elimination, and, inheritance with replication. What constitutes an adequate demarcation to claim a *notional* generation in socio-economic evolution is not as clear as it is in biological evolution. The important point is that a distinction is made between the changes occurring during one of these iterations and the extent to which change is carried forward from a single iteration to the next. These aspects will be tackled in Chapter 2 (Section 2.2) and Chapter 3 (Sections 3.3 and 3.4).

⁷ Other mechanisms include genetic drift and migration. Given that Selection by Consequences is representative of natural selection, the other mechanisms are ignored even though these may provide supplementary or alternative explanations of the evidence. The various elements in this section are further expounded in Chapter 3 (Sections 3.3 and 3.4). In this research, the term "evolution" is used in a relatively narrow sense to refer to natural selection.

The process underlying natural selection may be stated in terms of the following researchable proposition: certain individuals within a particular population inhabiting and interacting within a specific environment may possess some characteristic trait that, on average, leads them to reproduce more offspring to the following generation than others within that environment. That is, there is variation on the characteristic among the individuals within some population tied to a particular environment. The environment is characterised by a limited set of resources that could sustain the population. In addition, the likelihood of reproductive success of the individual must be *causally dependent* on whether the trait is present or not. If the characteristic trait is heritable (that is, there is a *consistent* relationship between the parent and its offspring on that trait), then the presence of the characteristic will increase in the frequency distribution of characteristic traits within the population over generations. *This* is the *automatic* outcome of selection: a change in the proportion of traits in the population where those traits exhibiting higher *fitness* appear more frequently in the population (Campbell 1969; Van Parijs 1981; Endler 1986; Ridley 2004; Futuyama 2009; Hodgson and Knudsen 2010). The terms *reproductive* or *biological fitness* or *reproductive success* denote “the average number of offspring left by an individual relative to the number of offspring left by an average member of the population” (Ridley 2004, p. 74). Not only does the process account for reproductive success but it also refers to situations where parents leave less offspring than others so that the presence of the trait in the frequency distribution decreases in relation to others (Vromen 1995).

If a trait increases the likelihood of reproductive success among those who possess it, then the trait is judged *adaptive* relative to (1) the idiosyncrasies of the environment within which it exists, and, (2) “neighbouring alternatives” (which also have some extent of adaptation relative to the environment) (Van Parijs 1981, pp. 62-63). Thus, the environment “imposes” a criterion for selecting (“evaluating”) among traits expressed in terms of the likelihood of an entity reproducing within its specific environment when possessing one of those traits (Van Parijs 1981, p. 97).

It is in this sense that natural selection edges out, winnows, filters, or culls those traits that are less adaptive to the environment while retaining the more adaptive ones.

The process of natural selection is also referred to as a “consequence-oriented force” (Lennox 1992, p. 333) or “filtering by reference to [actual (as opposed to potential) and empirical (as opposed to logical)] consequences” (Van Parijs 1981, p. 52). A trait *may* have effects or consequences within a specific environment that are causally relevant to the extent of the presence of the trait within a population in that environment (but not necessarily in others). The consequences of the trait within the environment may confer advantage (or disadvantage) to those who/which possess the trait. The advantageous (or deleterious) consequences account for the trait being selectively favoured (or eliminated) from a set of alternatives within the same context (Van Parijs 1981; Lennox 1992; Vromen 1995).

Natural selection requires three necessary conditions: variation, selective retention and elimination, and, inheritance-replication among traits located and interacting within a specific environment (Campbell 1969; Aldrich 1979; Van Parijs 1981; Endler 1986; Vromen 1995; Metcalfe 1998; Hull *et al.* 2001; Knudsen 2002; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010).

The evolutionary path characterised by natural selection does not necessarily imply competition. Cooperation may also be involved (Skinner 1971, 1974, 1981; Sober 1984; Hodgson 1994; Hodgson and Knudsen 2010). In conclusion, the process should not be taken to imply improvement, efficiency, or progress as outcomes (Sober 1984; Winter 1990; Hodgson 1993; Vromen 1995; Hodgson and Knudsen 2010).

1.1.2 Operant Conditioning and Natural Selection

Before defining operant conditioning and providing an overview of the analogy between this experimental learning model and natural selection, it is important to provide a very brief background with respect to radical behaviourist philosophy and the meaning of *explanation* in that philosophy.

A. Radical Behaviourism and Operant Psychology

Operant psychology is the study of behaviour from a natural science perspective and radical behaviourism is the materialistic philosophy of that science (Skinner 1974; Foxall 2010b)⁸. Behaviour is “the action of the whole organism” (Delprato and Midgely 1992, p. 1152) and constitutes *the* “subject matter” of operant psychology (Skinner 1953, 1974; Delprato and Midgely 1992; Catania 1998; Baum 2005; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009; Foxall 2010b).

Explanation is cast at a level of observation where behaviour is located and delineated. Analysis and research operates at the level of all directly and indirectly accessible human actions located within a physical and social environment⁹. Explanations classed “in the head” of the individual (e.g., mentalism, conceptual inner causes, desires, feelings, states of mind, preferences, needs, wants, beliefs, and thinking) are rejected as *causes* of behaviour (Skinner 1953, 1963, 1969, 1974; Day 1980; Catania and Harnad 1984; Skinner 1985; Foxall 1990; Delprato and Midgely 1992; Foxall 1996a; Madden 2001; Baum 2005). The adoption of such concepts generate explanations that are incomplete, possibly misleading, unnecessary or add nothing to the explanation of behaviour (Skinner 1953, 1985; Foxall 1996a) because the constructs appeal to and assume levels of observation and causal realms different from the locus wherein behaviour may be observed, described, and, ultimately, explained (Foxall 1993c, 1996a). Instead operant psychology adopts the strategy where “the autonomous agent to which behaviour has traditionally been attributed is replaced by the environment – the environment in which the species evolved and in which the behaviour of the individual is shaped and maintained” (Skinner 1971, p. 180). Therefore, at the

⁸ For an introduction into the history of behaviourism see Schneider and Morris (1987), Staddon (2001) and Moore (2008). The key points of radical behaviourism are proposed in Skinner (1953, 1974) while Delprato and Midgely (1992) and Foxall (1990, 2010b) provide an essential overview. The merits and demerits of the philosophy are beyond the scope of the thesis. Chapters 4 and 5 of Daniel Dennett’s *Brainstorms* (1978) provide an interesting critique of Skinner’s views.

⁹ Whereas public events (e.g., walking into a restaurant) are directly accessible, private events (e.g., thinking) are only indirectly accessible through third-party reports. In either case, however, both phenomena are classed as behavioural events requiring explanation. Thus, thought does not *cause* observable behaviour. The private behavioural event (thinking “I want to buy an ice cream”) may have occurred *before* the public event (buying an ice cream) as part of a chain of behaviours stimulated by some environmental event.

methodological level, the controversial statement that ‘the initiating causes of behaviour lie in the environment’ means that the locus of the variables that regulate and control behaviour lie in the physical and social environment, given the individual’s genetic endowment and lifelong learning history, rather than as described through the constructs developed and utilised in cognitive psychology (Skinner 1953, 1963, 1969, 1971, 1974, 1985)¹⁰.

The perspective leads to a definition of *learning* solely in terms of directly observed changes in rates of responding¹¹.

In establishing psychology as a natural *science* of behaviour, radical behaviourism relies on an important premise: psychology must have an objective empirical basis and, ideally, its “fundamental facts” must be generated through experimental methods (Zuriff 1985; Foxall 2010b). Indeed, within operant psychology, behaviour is *explained* only through observations derived under controlled experimentation (Skinner 1953; Baum 2005; Moore 2008; Johnston and Pennypacker 2009; Foxall 2010b)¹². The method is more commonly known as the Experimental Analysis of Behaviour (EAB), which is a single-subject inductively orientated methodology that searches for and establishes empirical regularities (laws) governing behaviour (the dependent

¹⁰ In criticism to Skinner (1981), Dahlbom (1984) states that although Skinner does provide for such concepts as “self-control,” he denies individuals the status of “initiating agent.” Skinner leaves the term “initiating agent” purposely vague because doing otherwise weakens his philosophical, and hence, explanatory position (Dahlbom 1984). However, positing a self-regulating individual does not necessarily lead to the conclusion that the individual is completely autonomous from environmental influences (Madden 2001) or that the initiating causes of self-regulation cannot be explained in terms of environmental variables. Instead, to Foxall, the real issue is the extent to which behaviour can be explained in the terms represented in operant psychology and when we would need introducing additional elements from cognitive psychology (Foxall 1990, 1996b, 2010b). For contrasting views on these and related points see the commentaries to Skinnerian ideas in Catania and Harnad (1984), discussions in Modgil and Modgil (1987), Foxall (1990, 2004, 2007c), Tonneau (2008), and Dennett (1978).

¹¹ In contrast, the predominant notion of individual learning within evolutionary economics is the emphasis that “all learning takes place inside individual human heads” (Simon 1991, p. 125) and on the cognitive dimensions of behaviour. This is because bounded rationality (Simon 1955) is a fundamental part of the generally-accepted building blocks particular to evolutionary economics (Marengo and Willinger 1997; Nelson and Winter 2002; Dosi and Marengo 2007; Dosi 2013; Nelson 2013). Thus, learning predominantly relates to changes in *knowledge* in individuals as antecedents to behaviour (Simon 1991; Dosi and Marengo 2007).

¹² In describing the aims of operant experimental research Pierce and Cheney (2008) elucidate: “The purpose of any experiment is to establish a cause-and-effect relationship between the independent [environmental] and dependent [behavioural] variables. To establish such a relationship, the researcher must show that changes in the independent variable are functionally related to changes in the dependent variable. This is called showing covariation of the X and Y variables. In addition, the experimenter must show that the changes in the independent variable preceded changes in the dependent variable” (p. 29).

variable) – environment (the independent variable) relations (Foxall 2010b)¹³. Such relations are *functional relations*, i.e., experimentally determined relationships describing and demonstrating that the dependent variable depends upon (is a function of) a specific independent variable “and nothing else” (Johnston and Pennypacker 2009, p. 358). These functional relations are the essence of radical behaviourist explanation, i.e., the answer *why* behaviour occurs or why an individual behaves in a certain way within a certain setting¹⁴.

B. Operant Conditioning

The term *conditioning* refers to procedures or operations modelling changes in the rate of response within experimental settings by arranging or altering conditions therein (Ferster and Skinner 1957; Blackman 1974; Catania 1998; Moore 2008). The difference between human and non-human animal *conditioning* and *learning* lies with reference to the degree of complexity in the environment wherein changes of behaviour take place: whereas conditioning occurs in contrived and simplified contexts of experimental laboratories, learning happens in more complex and less controlled real world settings (Blackman 1974). In either case, researchers are concerned with observable behavioural regularity (the relatively recurring rates of responding) and change (the relatively enduring changes in rates of responding) (Cooper *et al.* 2007; Johnston and Pennypacker 2009). The assertion that “the environment conditions behaviour” means that environmental events establish the *conditions* for patterns of behaviour to occur at their particular and relatively enduring rates (Blackman 1974, p. 38).

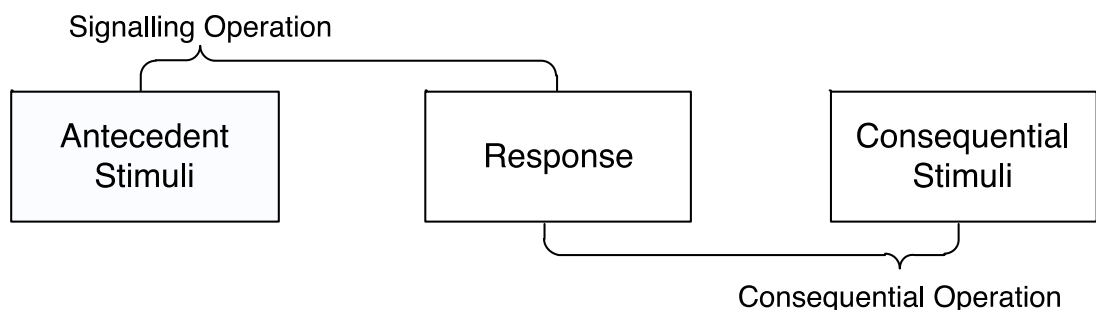
¹³ Section 1.2.1 and Chapter 2 (Section 2.3.6) explain how research is conducted in the EAB.

¹⁴ Tonneau (2008) is one author who raises the question whether experimental methods within operant psychology merely *describe* the situational influences of behaviour or *explain* the causes of behaviour through establishing functional relations. Langton (1979, 1984) argues the *incompleteness* of the behaviourist paradigm in explaining trial-and-error learning arises because operant psychology does not have an explanation *why* stimuli have reinforcing and punishing effects. On the other hand, radical behaviourists claim that establishing valid and reliable functional relations is a sufficient explanation of behaviour and its causes (e.g., Baum 2005). Tonneau (2008) argues that operant principles contribute to provide *one* layer of explanations. Other propositions (e.g., physiology, cognition) add to such layers rendering a system of alternative competing and complementary explanations of the phenomenon of interest (Foxall 1996b, 2010b). Since the aim of this research is to provide a first approximation or baseline model of an evolutionary account of real world firm behaviour based on operant conditioning, it adheres to the stricter interpretation of explanations. Complexity may be added as the need arises in future research (see, in particular, Section 1.3).

In the strict technical sense, operant conditioning refers to a causal or functional relation between behaviour and its environment uncovered using experimental procedures “whereby the rate of responding is brought under the control of consequent stimuli (reinforcers and punishers) in the presence of antecedent signals that particular outcomes will follow the performance of specific actions” (Foxall 1990, p. 32; 2010b).

The experimental procedure is composed of two operations: the *consequential operation* that correlates behaviour to its consequences and the *signalling operation* that correlates an antecedent stimulus to behaviour (Figure 1)¹⁵.

Figure 1 – Signalling and Consequential Operations



Legend: **Antecedent Stimuli** are environmental events occurring immediately *before* response. **Consequential Stimuli** are environmental events occurring immediately *after* responses. Both are generic terms used when the function served by the event is not known.

Source: Author based on Johnston and Pennypacker (2009, p. 9)

Consequential operations serve to establish a functional relationship between behaviour and its environmental consequences to uncover *why* (in the strict behaviourist sense of the word) some consequences make behaviour more probable in future and other consequences make future emissions less likely or not at all (Skinner 1953, 1966b, 1974, 1980, 1987; Moore 2008; Pierce and Cheney 2008).

A response, R, operates (hence, the term *operant*) on the environment to bring about some consequence, S, i.e., an effect, modification or change therein (Moore 2008; Johnston and Pennypacker 2009). These consequences are expressed in terms of rewards and punishment. Rewards increase the rate

¹⁵ All figures and tables presented within the research are developed by the author unless otherwise stated.

of responding whereas punishments decrease the rate. A consequential operation establishes a correlation between consequences and an increase or decrease in the rate of responding (Catania 1998; Moore 2008). Thus, the environmental consequence of behaviour *may* come to *regulate* (i.e., increase or decrease) the probability that the response is *emitted* in future in sufficiently similar settings given the learning history of the individual and a sole focus on observable behaviour¹⁶. Consequences that are *empirically demonstrated* to increase the likelihood of future behaviour are termed *reinforcers* whereas consequences that decrease the likelihood of future behaviour are termed *punishers*. As experimental procedures, *reinforcement* strengthens or maintains the rate of responding whereas *punishment* weakens the rate (e.g., Catania 1998; Moore 2008; Pierce and Cheney 2008; Johnston and Pennypacker 2009). The changes are enduring and may be summarised as the *learning history* of the individual.

Operant behaviour is thus defined as “any behaviour whose future frequency is determined primarily by its history of consequences” and, therefore, may be said to be “selected, shaped and maintained by the consequences that have followed it in the past” (Cooper *et al.* 2007, p. 31).

In the EAB, the explanation given for the future re-enactment of behaviour that has a certain consequence also hinges on the environmental events present when the behaviour is originally emitted, learned, and performed and its consequences are generated (Foxall 1990; Cooper *et al.* 2007; Foxall 2007b; Johnston and Pennypacker 2009). If behaviour is emitted when a particular environmental stimulus or event is present and that behaviour generates an increase in the rate of responding, the antecedent stimulus may come to serve as a *signalling operation* (Catania 1998; Moore 2008). Behaviour may be more likely to be emitted when such antecedent stimuli are

¹⁶ Staddon (2001) describes the reason why the concept of “emission” is used. He argues that the term reflects Skinner’s underlying recognition that an operant occurs spontaneously prior to the occurrence of or influence by its consequences. Staddon (2001) also points to an important criticism of Skinner’s approach – Skinner did not systematically investigate the process that produces an operant ahead of the occasion for reinforcement, i.e., “the processes that originate novel (i.e., previously unreinforced) behaviour” ... or behavioural variation”. Although, beyond the present scope of the research to examine the topic in any great detail, it is important to note behaviourists such as Neuringer (2002, 2003), Waltz and Follette (2009), Palmer (2012), Holth (2012) and De Souza Barba (2012) debate the topic of variability and creativity from an operant perspective.

present then when such stimuli are not present (Catania 1998; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009). Very often, behaviour settings or the contexts of behaviour may be characterised by such antecedent stimuli that “have been repeatedly paired with the performance of the response in question and its consequences” (Foxall 1990, p. 38). Over a period sufficient to establish a history, these antecedent stimuli assume *discriminative function* as they may *set the occasion* for the emission of certain responses rather than others (Catania 1998; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009).

The three-term operant *contingency*, $S^D:R \rightarrow S^{r/p}$, summarises the two operations just described emphasising that consequences are necessarily preceded by behaviour. The contingency is the fundamental unit of analysis in operant psychology where S^D is a discriminative stimulus, R is the operant class, S^r the response-strengthening (reinforcing) consequence, and S^p is response-weakening (punishing) consequence. In operant terms, therefore, contingency means “causal dependence” (Staddon 2001, p. 43) and “implies an ‘if-then and not otherwise’ relation...if the response occurs (in the presence of a discriminative stimulus), then the consequence will follow and not otherwise” Moore (2008, p. 92). Contingencies summarise the lawful relationships between environmental events that set the occasion for behavioural emission, an operant, and the consequences such operant produces (i.e., they summarise functional or *contingency* relations among variables)¹⁷.

Operant conditioning, therefore, refers to the experimental analysis of operant behaviour (Blackman 1974), involves the regulation and modification of behaviour by its consequences (Blackman 1974; Catania 1998; Moore 2008; Pierce and Cheney 2008; Johnston and Pennypacker 2009), and describes a

¹⁷ It should be noted that behaviour is reinforced and not the individual (Moore 2008; Johnston and Pennypacker 2009).

Response→Stimulus model of consequential learning or expressing behaviour as a function of its consequences¹⁸.

C. The Natural Selection-Operant Conditioning Analogy

Operant conditioning rests on a particular mode of causation (Skinner 1981). In radical behaviourist explanations relations are not automatic or mechanistic but probabilistic (Delprato and Midgely 1992; Catania 1998; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009): the *causes* of behaviour are changes in an independent variable (some environmental event) and the *effect* or outcome is a correlated change in the dependent variable (behaviour) (Skinner 1953). In addition, the consequential mode of causation that Skinner advanced through operant conditioning is representative of natural selection (e.g., Skinner 1981; Delprato and Midgely 1992; Moxley 1992; Palmer and Donahoe 1992; Foxall 1996a; Marr 1997; Moore 2008; Johnston and Pennypacker 2009; Foxall 2010b). And, given the earlier

¹⁸ Operant processes grant significant flexibility in coping with highly complex and dynamic environments to individuals during their respective lifetimes. Humans do not inherit fixed and specific repertoires of behaviour; rather, the evolution of human operant behaviour demonstrates the emergence and persistence of a high degree of plasticity and flexibility (Skinner 1961b, 1966c, 1974, 1981, 1984b). Contrast to Pavlovian conditioning, a Stimulus→Response model of learning: the presentation of a stimulus (S) *elicits* an automatic response (R) from the individual. Meat is presented and the dog salivates (Pierce and Cheney 2008). Respondents are *elicited* because an environmental stimulus 'draws forth' an automatic response (the bell rings, the dog salivates) (Catania 1998). The eliciting stimulus is presented before the respondent and the S→R pattern is maintained irrespective of the consequences of the respondent (Alhadeff 1982). In operant conditioning there is a reversal of the S, R sequence – the response, R, precedes the consequence, S, it produces (Alhadeff 1982; Foxall 1996a). The casual relation between stimulus, S, and respondent class, R, is automatic implying a mechanistic form of causation (Delprato and Midgely 1992; Foxall 1996a, 2010b). (For a more detailed treatment of Pavlovian conditioning see, for example, Alhadeff (1982), Catania (1998), Pierce and Cheney (2008), Cooper *et al.* (2007), and, Johnston and Pennypacker (2009)). The lack of appreciating the distinction between Pavlovian and operant conditioning is a source of confusion and misrepresentation of the type of learning that Skinner emphasised (e.g., Foxall 1996a).

description of natural selection, the appeal to an identical mode of causation lies at the source of the analogy drawn between the two forms of explanation¹⁹.

The analogy between operant conditioning as it applies to socio-cultural evolution and natural selection has a relatively long history (Gamble 1984; Baum 2002). Besides Skinner's ideas appearing in the early 1950s (Skinner 1953), several scholars recognize the similarity of principle including Campbell (1956, 1969), Aldrich and Pfeffer (1976), Aldrich (1979), Aldrich and Ruef (2006), Langton (1979, 1984), Van Parijs (1981), and Dosi and Orsenigo (1988).

In one of his principle works, Skinner (1981) explains his view that human behaviour is the joint result of biological evolution through natural selection (contingencies of survival), an individual's lifetime of operant learning (contingencies of reinforcement), and the contingencies that maintain the cultural practices within which the individual participates. Skinner (1981) dubbed the single mode of causation operating at each of these levels as Selection by Consequences: natural selection operates at the biological level whereas operant conditioning operates at the individual and at the cultural level. A central theme of Selection by Consequences may be summarised as follows: the evolution of cultural practices proceeds as a special application of operant conditioning (Skinner 1981) and that operant conditioning constitutes a "sufficient explanation" (Skinner 1984b, p. 221; 1984f, p. 718; 1984h, p. 504), i.e., "*no new* behavioural processes are involved" in the evolution of cultural practices (Skinner 1961b; 1984b, p. 221; 1984f, p. 718; 1984h, p. 504).

This project constructs research to examine the applicability of these claims in relation to the evolution of marketing practices. The question of

¹⁹ Van Parijs (1981) recognises that operant conditioning is an evolutionary mechanism. However, he disagrees with the claim that the mechanism is one of natural selection because operant conditioning involves neither the differential reproduction nor the differential survival of individual organisms. Van Parijs is correct insofar as those cases where the unit of selection is conceived in terms of individuals (i.e., living organisms). (In Darwinian natural selection, the unit of selection is the individual (Vromen 1995)). Chapter 3 (Section 3.4.3B) notes that there are various entities that may be identified as units of selection. In this research the unit of selection is conceived in terms of patterns of behaviour. As shall be explained in detail within Chapter 3 (particularly Section 3.2), reinforcement and punishment processes result in the differential survival, elimination, and replication (or reproduction) of certain patterns of behaviour over others. Thus, Van Parijs (1981) is not entirely correct in his claim that operant conditioning is not a mechanism of natural selection.

whether the analogy between operant conditioning and natural selection is appropriate and adequate to apply to socio-cultural evolution is raised across open peer commentary to Skinner (1981) in Catania and Harnad (1984). Dahlbom (1984) argues that Skinner's characterisation raises "a substantial problem of analysis": "what does 'selection by consequences' mean? And, is this metaphor good enough?" (p. 485). Thus, the scope of the current research is captured by these two key questions: particularly on the methodological and conceptual issues related to developing a neo-Skinnerian and evolutionary interpretation of the marketing practices of firms within real world settings²⁰.

Section 1.2 identifies key conceptual and methodological obstacles to applying it and associated operant principles to interpret the behaviour of individual firms.

1.2 Critical Issues Hindering the Application of Selection by Consequences

The subject matter of this research arose from a study of the behaviour of Wall's from an operant perspective by Vella and Foxall (2011). Their discussion flags two issues: first, the persisting monopolistic features of the UK ice cream market were brought about through the recurring use of exclusivity arrangements with distributive and retail intermediaries (among other similarly recurring practices such as a differential reward system) by several manufacturers. Second, the evidence used, which briefly details the history of the development of the industry, indicates that the marketing mix configurations used by the national manufacturers appear to have remained relatively unchanged for several decades. Vella and Foxall (2011) do not provide any explanation for this. Neither do they suggest possible historical reasons for the emergence and persistence of the monopoly situation beyond the fact that Wall's dominated the industry for several years. Adopting an evolutionary perspective provides one mode of *investigating and interpreting* these historical phenomena and how they came into being. An appeal to *Selection by Consequences* must be made to further develop theory and research within the

²⁰ As a corollary of the statement that the economic realm is assumed subset to the socio-cultural domain, patterns of marketing and consumer behaviour may be considered as special types of cultural practices.

operant perspective on strategic marketing behaviour *and* generate such research in an evolutionary vein.

Three obstacles immediately hinder the development and application of Selection by Consequences to understand the evolution of marketing practices: first, Skinner's (1981) cultural evolution-operant conditioning analogy appears incomplete. Second, operant conditioning describes non-human and human animal learning under experimental conditions. Briefly, the main issues here relate to (1) the extent to which human learning is different from that in other animals, (2) the fundamental differences between contrived and simple experimental spaces and complex real world contexts, and, (3) the applicability of a psychology modelled on individuals to characterising the behaviour of firms. Third, the *sine qua non* of operant research is the use of experimental methods and quantitative data. What alternative methods are available to generate knowledge based on operant principles when experiments are not possible or desirable and when appropriate quantitative data is not available? How do we treat the knowledge derived from an application of operant principles through these alternative methods?

This section examines these issues as antecedent obstacles. Section 1.3 then puts forward the methodological strategy that addresses the issues within the bounds of the parameters set by the research objectives, deliverables, and questions as described in Section 1.4.

1.2.1 Incompleteness and Vacuity

Setting aside the philosophical debates surrounding radical behaviourism, Selection by Consequences, as proposed by Skinner (1981), is prone to a number of important criticisms that hinder research attempting to unravel Skinner's *interpretation* and applying it to characterise the evolution of real world economic behaviour.

The more pressing of conceptual problems relates to the incompleteness of Skinner's application of the Darwinian analogy (e.g., Dahlbom 1984; Staddon 2001). Together with the mechanism of selection, evolutionary accounts must also provide for mechanisms for introducing variation (including the acquisition

of novel repertoires) and of replication with retention (Campbell 1969). Indeed, a number of authors (e.g., Dahlbom (1984), Hallpike (1984), Maynard Smith (1984), Richelle (1987), Vargas (1990), Dewitte and Verguts (1999), Staddon (1984, 2001), and Leslie (2002)) argue that Skinner was not particularly concerned with either the mechanism for the introduction of variation or for that of replication-with-retention. Instead, he seems to have focused primarily on the mechanism of selective retention and elimination. Dawkins' (1984) fundamental concern with *Selection by Consequences* indicates a very important obstacle to operationalizing Skinner's analogy: he points out that Skinner remains unclear about what is being selected at the cultural level of analysis. Skinner (1984h), in reply, glosses over this central problem in evolutionary thinking (e.g., Lloyd 1992; Mayr 1997; Hull *et al.* 2001; Mayr 2002; Futuyma 2009; Hodgson and Knudsen 2010) and provides only a tentative answer²¹.

Incompleteness manifests itself in two additional ways. Skinner's presentation is highly speculative and without the necessary warrant. For example, the claim "the human species presumably came much more social when its vocal musculature came under operant control" (Skinner 1981, p. 502) is not substantiated in any way. What of the development of human cognitive functions? Secondly, Skinner (1981) wrongly presumes a working knowledge of and familiarity with operant psychology on the part of the reader. For example, the publication only makes reference to four different publications, three of which are his own. Both Barlow (1984) and Staddon (2001) object to Skinner's lack of referencing to the relevant literature in the field²².

Several authors (Barlow 1984; Bolles 1984; Dawkins 1984; Delius 1984; Gamble 1984; Honig 1984; Staddon 1984; Stearns 1984) make references to

²¹ Chapter 3, Section 3.4 (especially Section 3.4.3B), discusses this dimension in greater detail and introduces the arguments of Sober (1984) to clarify and distinguish between what is being selected (selection of) and the reasons for which the object is being selected (selection for). As shall be seen in Chapter 5 and 6, the introduced distinction made by Sober enhances the interpretation of the evidence based on *Selection by Consequences*.

²² Barlow (1984), for example, remarks: "I was equally taken aback by the absence of references to highly relevant literature closer to home for Skinner. In a classic paper Pringle (1951) explored the parallels between learning and natural selection. Campbell (1975) has written on almost the same theme as Skinner and is often cited. Pringle's and Campbell's treatments are more sophisticated than the essay before us" (p. 482). In this last respect, Staddon (2001) makes very similar objections.

those who have drawn the analogy between trial and error learning and the selection of non-prescient variations. Of these, for example, Donald Campbell's work is the more frequently cited (Barlow 1984; Bolles 1984; Gamble 1984; Honig 1984; Staddon 1984). As Barlow (1984) notes, Skinner neglects the work of Campbell who explicitly drew the analogy between reinforcement of exploratory behaviour and selection (e.g., Campbell 1956, 1969). Further, Skinner's evolutionary analogy should have woven the relevant arguments of those who had previously discussed the learning-selection analogy and explicitly noted his own early and recurrent treatment (e.g. Skinner 1953; Plotkin 1987; see also Morris *et al.* 2004). It is only in the reply to Bolles (1984), for example, that Skinner (1984h, p. 502) demonstrates his early treatment of the evolutionary analogy and its applicability to the selection of cultural practices. Both Ghiselin (1984) and Delius (1984) claim that Skinner's neglect of advancements in evolutionary biology gives rise to an oversimplified view. Dahlbom (1984) presents a case to argue that Skinner lacks an understanding of natural selection theory. Stearns (1984) finds Skinner's analogy between "evolution and learning apt but hardly new, and his picture of evolution errs in the details (1984, p. 499). Plotkin (1987) has similar criticisms. Attention to these details would have addressed, in part, the claims of a lack of originality (e.g., Stearns 1984; Staddon 2001), of depth (e.g., Staddon 2001) and of triviality (Hallpike 1984) or "little heuristic value" (Timberlake 1984, p. 500), and, the recurring argument that Skinner's view was "written in a vacuum" and in "total isolation" from current issues within evolutionary theory (e.g., Barlow 1984, p. 482; Delius 1984).

Skinner laments a general misunderstanding of his position (Skinner 1984f, p. 719) attributing the cause to the difficulty in accepting his stance on behaviour being environmentally rather than internally determined. While this is probably the case, a more plausible cause may have very well been due to a "bad exposition" of his ideas (Skinner 1984f, p. 719) particularly the lack of attending more actively to the broader literature and, instead, relying heavily on direct inferences and armchair extrapolation²³. In addition, it should also be noted that in some instances, Skinner does not provide adequate and complete

²³ A similar point is drawn by Hunt (1984) on Skinner's "An Operant Analysis of Problem Solving" (Skinner 1966b).

replies to some of his critics and neither does he attend to the more scorching criticisms made on his work (Dahlbom 1984; Catania and Harnad 1988)²⁴. These issues contribute to the sense of incompleteness of Skinner's evolutionary analogy.

Careful readings of Skinner (1981) in the light of the general principles of operant psychology and of his (1984h) responses to some of the criticisms, reveal several implicit researchable propositions that would have made Skinner's case stronger had he attended to these dimensions more clearly and explicitly and had he contextualised these ideas within the broader psychological and evolutionary literature. Set against a backdrop of operant psychology and the continued developments therein, Skinner's analogy merits evaluation in research. Further, the idea that one gets from reading the various criticisms of *Selection by Consequences* is not one of outright rejection. Rather, it is one best summarised by Plotkin (1987): "by and large Skinner referred to the analogy merely to point out surface similarities and consequently ... he never employed it to any real conceptual advantage" (Plotkin 1987, p. 139). Instead of developing an empirical research programme around the evolutionary analogy, which could have encouraged further conceptual development (Stearns 1984; Plotkin 1987), Skinner merely engaged in drawing "plausible" inferences from experimental results directly to biological (e.g., Skinner 1975, 1984b, 1986, 1989a) and cultural evolution (e.g., Skinner 1966a, 1969, 1971, 1989b)²⁵.

It is this last dimension of the incompleteness of *Selection by Consequences* analogy as it applies to the firm that is of greatest concern to the research at hand. Three particular questions are raised through Chapters 3 and 4: To what extent is Skinner's analogy incomplete? What supplementary principles from operant psychology are required to clarify Skinner's analogy? What additional constructs need to be introduced from evolutionary economics

²⁴ For example, contrast the points raised by Barlow (1984), Harris (1984), Plotkin and Odling-Smee (1984), Rosenberg (1984), Rumbaugh (1984), and Stearns (1984) to the replies given by Skinner (1984h).

²⁵ Indeed, Skinner seems more concerned with providing an argument in favour of cultural design and modifying cultural practices for the benefit of mankind and human survival (e.g., Skinner 1953; Skinner 1961b, 1966a, 1969, 1971, 1989b; see also Glenn *et al.* 2001) than to conceptualise a relatively comprehensive framework for socio-cultural evolution for application in research.

and strategic marketing management to allow the development of a baseline framework that accomplishes the research objectives?²⁶

A related concern is the threat of *vacuity*. Dahlbom (1984) and Rozeboom (1984), for example, interpret the starkness of Skinner's interpretation as showing a lack of explanatory value. This claim is not entirely unfounded. Why?

In the EAB, research is conducted through a systematic observation of the properties of the individual's environment (*stimulus events in the world*) and the properties of her behaviour (*responses*) over time (Catania 1998). The method rests on conducting a *functional analysis of behaviour*: analysing behaviour-environmental relations by classifying behaviour and environments according to their response and stimulus functions respectively (Pierce and Cheney 2008). A functional analysis typically disregards the actual content or physical characteristics of observed behaviour. Instead the emphasis is on the classification of and the relationships (the functional relations) between *classes of functionally equivalent variables*, i.e., between categories of environmental events and of behaviour, and categories of behaviour and of its consequences (Delprato and Midgely 1992; Foxall 1995a, 1997b; Glenn 2001; Cooper *et al.* 2007; Pierce and Cheney 2008; Vella and Foxall 2013). Behavioural interactions between individuals and the stimulating environment take centre stage and the task involves determining the kind of relations between stimuli and responses and how these behaviour-altering relations emerge (Skinner 1969; Catania 1998; Moore 2008)²⁷. The main effort of EAB focuses on the

²⁶ Chapter 3 focuses upon and examines *Selection by Consequences* in greater detail to extract explicit and implicit principles and propositions presumed applicable to the firm. This reconstruction, set against a backdrop of operant principles and part of the process of operationalization, forms an integral part of the baseline (sensitizing) framework developed in Chapter 4 that is applied to the evidence to establish and evaluate the applicability of natural selection-operant conditioning analogy. This sensitizing framework is one of the key deliverables of the research – see Section 1.4. The relative vastness of the evolutionary economic literature creates an additional problem with respect to selecting the more relevant literature from which to introduce certain principles. Section 1.3 describes the strategy adopted to address this and other problems. A fuller assessment of the claims made with regard to Skinner's treatment as applicable to firm practices may be made only after his core analogy is operationalized and applied in research.

²⁷ Glenn (2001) characterises the issue: "behavioural principles are content-free. Although derived from empirically observed events such as tone presentations, lever presses and food deliveries, the principles are not "about" those particulars. In fact they are not "about" any particulars" (p. 14).

most economical and useful ways in describing these interactions and explaining them by establishing empirical regularities with respect to the function of behaviour for the purposes of prediction and modification (control) (Foxall 1990; Catania 1998; Baum 2005; Johnston and Pennypacker 2009; Foxall 2010b; Vella and Foxall 2011)²⁸. For example, such behaviours as wearing a coat or switching on a heater on a cold day (the stimulus event) to keep warm (the consequence) are grouped together – these behaviours are functionally equivalent. Thus, behaviourists would discuss stimulus events, the function of behaviour and the response strengthening (i.e., reinforcing) or weakening (i.e., punishing) consequences (reinforcers, punishers).

At first blush, therefore, functional explanations may seem vacuous.

To mitigate the threat of vacuity, the research utilises *both* functional and topographical analyses: This attends to the richness of the qualitative evidence populating this research and the theoretical developments within the literature domains that inform this research (Vella and Foxall 2013).

1.2.2 From Lab to Life

The greatest methodological concern is faced when an operant investigation is to be constructed from descriptions of real world behaviour contained in qualitative evidence (Vella and Foxall 2011, 2013).

Operant conditioning refers to learning under experimental conditions through reinforcement and punishment procedures developed within the abstract and highly confined setting of an operant laboratory. By definition, establishing whether the procedures are in operation relies on the generation and analysis of quantitatively measurable observations derived under controlled experimentation. On the other hand, real world behaviour is not amenable to experimental research; there are significant differences between experimental and non-experimental settings and between human and non-human animal

²⁸ It should be noted that the meaning of “the function of behaviour” should not be misconstrued in the teleological sense, i.e., behaviour with intended purpose. In radical behaviourist modes of description and explanation, the individual does not emit behaviour with the intention of gaining reinforcers (Zuriff 1985, pp. 120-130). The view is retrospective and is best expressed as what behaviour has accomplished. No hidden mediating variables (e.g., thought, preferences, wants, desires) are involved.

subjects that need to be accounted for (e.g., Foxall 1990, 1994, 1995c, 2010b); and, since the project uses longitudinal data, a research method that yields a valid and reliable empirically grounded contribution to theory is required in lieu of experiments²⁹.

First, *real world behaviour* is a term used to refer to actual economic behaviour within modern marketing-orientated economies (Foxall 1999b; Vella and Foxall 2011) and to emphasise the complex and intricate dynamics of situational influences on economic behaviour³⁰. With respect to consumer behaviour, for example, such contexts of behaviour are characterised by substantial social influences including marketers who are found actively vying for consumer attention through the various elements of the marketing mix (Foxall 1990, 1996b, 2010b; Vella and Foxall 2011, 2013). Other non-marketing social sources of influence within such settings include fellow consumers, peers, opinion leaders and the like (Foxall 1990, 1997b, 2003, 2010c). Firms encounter similar economic, social and institutional influences including rival marketing efforts, government policy, regulation, and intervention (Foxall 1990, 1997b, 2003, 2010c; Vella and Foxall 2011, 2013), banking practices, capital investment behaviour, and so on. Therefore, these environments are characterised by a greater and far more quantitatively and qualitatively diverse range of physical, temporal, regulatory, and social stimuli than the significantly more closed settings typical of an experimental laboratory (Foxall 1990, 1996b, 2010b). In such complex environments, it is significantly more difficult if not impossible to identify and isolate all the elements to be classified according to the three-term contingency and to unequivocally establish inter-relationships among the elements. Thus, such complex settings are not amenable to a direct EAB (Foxall 2005, 2010b). In addition, multiple environmental events may, independently or jointly, come to control behaviour (Lee 1988; Foxall 1994, 1995c, 2004, 2010b). Such environments render

²⁹ When biological natural selection is expressed as a testable hypothesis, evolutionary explanations also require establishing *consistent* relationships among variables concerned (Section 1.1.1, this chapter, and Section 3.4 in Chapter 3). Therefore, evolutionary explanations presented using only qualitative data as a source of evidence are also interpretations. Thus, the same arguments in favour of having a systematic and rigorous approach to developing operant interpretations also apply to evolutionary interpretations. See also Chapter 2 especially Section 2.2 and Section 2.3.6.

³⁰ Within the research, the terms “behaviour in natural settings,” “real world behaviour,” and “complex behaviour” are used interchangeably and carry the same meaning.

experimentation impossible and create problems with respect to how observations of such real world behaviour are to be treated within an approach that presumes radical behaviourism and is framed within the system of meanings provided by operant psychology.

Second, in extrapolating from the principles derived under experimental conditions to conceptualise and draw inferences on real world behaviour, behaviourists typically adopt the three-term contingency as a framework for analysis assuming generalizability or continuity of principle. However, as Lamal (1991) aptly remarks, “It is a long way from a bar press to perestroika” (p. 10). For example, Staddon (2001) takes issue with Skinner’s uncritical generalisation from laboratory life to the real world in his renowned paper *Superstition in the Pigeon* (Skinner 1948) and in later works: “The leap here is quite substantial, from pigeons posturing in a box to rituals in card games and body language by bowlers, and, in later writings, to religious beliefs” (Staddon 2001, p. 61). Skinner’s cultural analogy and Selection by Consequences is characterised by similar speculative leaps. Skinner (1971), for example, draws strict parallels between laboratory spaces and cultural environments to claim that “designing a culture is like designing an experiment” (Skinner 1971, p. 150) since “the difference between contrived and natural conditions is not a serious one” (Skinner 1971, p. 156). Although Skinner does admit that interpreting real world based on generalisations from an experimental science generates oversimplification (Skinner 1971), he never considers the conceptual and methodological implications of such a practice in any particular depth.

Based on a wide range of empirical findings and theoretical syntheses across several behaviourist works, Foxall (1990, 1992b, 1995c, 2010b), however, emphasises a discontinuity of operant principles when moving from experimental laboratories to life. He concludes that fundamental differences exist between laboratory and natural settings to the extent that within the latter it is often difficult and impossible to determine the nature and the extent of environmental control on human behaviour; and, critical differences do exist with respect to operant conditioning in human and non-human animals (cf. Kollins *et al.* 1997). Foxall (1990, 1992b, 1995c, 2010b) argues that these differences threaten and reduce the integrity of experimentally-derived

principles when applied to understand and explain natural settings. Moreover, he stresses that engaging in direct extrapolation and disregarding these differences presumes unproblematic correspondence between what is observed in labs and in the real world³¹.

Third, the research envisages the use of qualitative evidence to address its purpose. In turn, this dictates the use of a different research method than the one normally prescribed by behaviourist methodology. The problem does not lie with the experimental method or with the underlying premise that operant psychology requires an empirical basis. Rather, since this project is a direct continuation of Vella and Foxall (2011), it will use longitudinal qualitative data that traces the history of the real world marketing practices of Wall's and its rivals beginning from the inception of the market for factory-made individually-wrapped pre-hardened ice cream for mass consumption³².

Due to the nature of the issues just described, research outside the realm of experimental spaces proceeds generating an operant *interpretation*, i.e., a translation of a set of real world observations (as one system of meaning) according to the principles and assumptions of operant psychology (another system of meaning) and to rules of correspondence (Foxall 1998a; 2010b, pp. 17-18)³³.

³¹ See also Section 1.3.

³² The evidence used to populate the case study is derived from a market investigation conducted by the Monopolies and Mergers Commission and published as "Ice-Cream and Water Ices: A Report on the Supply in the United Kingdom of Ice-Cream and Water Ices" in 1979. See also Section 1.4 and Chapter 2.

³³ Appendix A1.2 discusses what is meant by the term "interpretation" in this research. Briefly, interpretation is defined as (1) a *reconstruction* or "a form of translation, a process of rendering what is observed in terms of another system of plausibility [or meaning], one that is distinct from the descriptive terms in which the observation is recorded. ... Interpretation cannot proceed in isolation from a template in terms of which the interpretation is to take place" (Foxall 1998a; 2010b, pp. 17-18); and, (2) a working *hypothesis* that is "presented on a background of accepted conventions and ontological assumption" (Faye 2011, p. 279). Both definitions imply the importance of evaluating *Selection by Consequences* from within radical behaviourism and emphasise the theoretical nature of the endeavour. However, the interpretation is not treated as mere narrative or pure speculation. It is established as a hypothesis for testing, rejecting, refining, and retesting. Rules of correspondence are described as follows: "A major problem for empirical researchers is the nature of the connection between the language of theory and the language of observation. Rules of correspondence is a term sometimes applied to the means, criteria, and assumptions underlying attempts to connect these two levels, by means of common expressions" (Scott and Marshall 2012).

Typically, behaviourists do engage in the interpretation of real world phenomena: when the rigorous methods of controlled experimental observation are not possible, interpretations are advisable and serve an important function as “plausible” stand-alone accounts of complex behavioural phenomena (Skinner 1957) otherwise presently inaccessible to experimental techniques, as useful sources for generating research agendas, and/or as interim accounts awaiting experimental research (Skinner 1953, 1974). Thus, Skinner does engage in interpreting phenomena outside experimental laboratories and does so by seamlessly extrapolating from the principles uncovered therein: *Selection by Consequences* is one such exercise³⁴. However, he seems to be dismissive of the *explanatory* value of such interpretations: “an interpretation [is] not an explanation, and is merely useful, not true or false” (Skinner 1984g, p. 663). In addition, Skinner does not seem to believe that such interpretations require a rigorous and systematic framework within which they should be developed (Skinner 1957, 1984g)³⁵.

Post-Skinner and with the exception of the various contributions by Foxall (1994, 1995c, 1998b, 2001, 2010b, 2013) on the subject, behaviourists have rarely considered the nature, scope, and implications of interpretations framed within the context of systematic and rigorous qualitative research that

³⁴ Skinner (1981) simply extrapolated directly from the experimental space into the real social world without taking into account the complexities of human behaviour therein.

³⁵ Stich (1984), for example, argued: “throughout [Behaviourism at 50 (Skinner 1963; Catania and Harnad 1984, pp. 615-617)] and in many other places, Skinner has made what appear to be strong and substantive claims about the mechanisms and processes that do and do not underlie behaviour. It is on these claims that I focus in this commentary. The ones that concern me give every appearance of being empirical. However, it sometimes seems that **when Skinner and his followers discuss them they do not treat them as being empirical. Rather, they write in a way that suggests that the claims are compatible with any possible empirical evidence.** But if there is no imaginable data that advocates would accept as disconfirming or falsifying a claim, then the claim itself is empirically vacuous. **It is my hope that in his response to this commentary Skinner will say whether or not he takes his claims about the processes underlying behaviour to be empirical, and thus potentially falsifiable**” (p. 647, emphasis added). To this Skinner responds that operant principles are sufficient to explain behaviour of research subjects within experimental environs and claims made therefrom are falsifiable. These efforts provide the fundamental concepts and principles to generate interpretations of other more complex phenomena. Interpretations, however, do not have explanatory value and “are merely useful, not true or false” (Skinner 1984g, p. 663). In *Verbal Behaviour*, Skinner (1957) provides an insight into the questionable manner in which he tackled the subject matter: “no effort has been made to survey the relevant “literature.” The emphasis is upon an orderly arrangement of well-known facts, in accordance with a formulation of behaviour derived from an experimental analysis of a more rigorous sort. The present extension ... is thus an exercise in interpretation rather than a quantitative extrapolation of rigorous experimental results” (p. 11).

remains largely faithful to radical behaviourist principles³⁶. Instead, operant interpretations are treated as simply conceptual or retrospective analyses and do not entail “empirical *scientific work*” (Leigland 2010, pp. 207, emphasis added)³⁷. Thus, broadly, most follow the strategy adopted by Skinner, which, for the sake of distinction, may be termed as *Narrative Interpretation*.

Conducting Narrative Interpretation simply entails drawing inferences directly from principles established in the EAB using the three-term contingency and its elements as a framework for analysis. Typically, operant principles are seamlessly applied to interpret the real world behaviour occurring in the phenomenon of interest assuming continuity or generalizability of principle (Leigland 2010; Moore 2010) without regarding the conceptual and methodological implications associated with such an approach. Even though the outcome resulting from such interpretations may lead to suggesting areas for experimental research or merely stand as plausible narratives of some phenomenon that cannot yet be explored in the operant chamber, the overall strategy does not necessarily lead to interpretations that meet the standard evaluation criteria of validity (Foxall 1998a; Staddon 2001; Foxall 2010b; Mace and Critchfield 2010) and reliability (Foxall 1998a, 2010b; Neuringer 2011). In other words, such accounts cannot be inspected for the purpose of falsification (e.g., Stich 1984) or verification. Thus, operant interpretations of this kind immediately fall prey to the criticism of being simply “narrative speculation”

³⁶ Lee (1988) is a singular exception in that she provides a thorough examination of the problem posed by interpretation within behaviourist research. In addition, as far as I am aware, Foxall (2010b) is the first researcher who tackles the issue of operant interpretations within the context of qualitative and mentions case study research as an alternative research method within the confines of radical behaviourism (see also Chapter 2, Section 2.1). A review of the radical behaviourist methodological literature (based on the top ten behaviourist journals and a search on the nature and role of operant interpretations through PubMed and other psychology databases) appears to support the harsh criticism made by Foxall on “the lack of a consensual method of constructing such interpretations among radical behaviourists” (Foxall 1998a, p. 29): “Radical behaviourists have done little to formulate a method of interpretation, though this has not inhibited the proliferation of radical behaviourist interpretations of complex human activity (Skinner, 1953, 1957, 1971, 1974). While the essential feature of such interpretations is clear - the identification of discriminative antecedents to responses and the relationship of both to the reinforcing and punishing consequences of behaving - no systematic procedure has been evolved which leads plausibly to the unambiguous discernment of these elements of the ‘three-term-contingency’. Issues of validity and reliability scarcely arise in so deterministic a system. This neglect gives rise to the criticism that radical behaviourist interpretation consists largely in the vague analogical guesses’ attributed by Chomsky (1959) to Skinner’s operant account of verbal behaviour (Skinner, 1957)” (Foxall 1998a, p. 35). Foxall (1999c, p. 143) and Foxall (2001, p. 182) reiterate these claims.

³⁷ For example, this is an underlying assumption in Skinner’s “plausible” inferences from experimental directly to biological and cultural evolution.

(Mace and Critchfield 2010, p. 297), “grand extrapolation[s]” (Staddon 2001, p. 61) or “speculative interpretations” (Foxall 2001, p. 182) despite their possible usefulness in generating ideas for research. Therefore, there is substantial neglect and absence of systematic approach for conducting interpretations (Foxall 1995c, 1998a, 2001, 2010b). In addition, such an approach fails to question whether fundamental differences exist between laboratory and natural settings, whether critical differences exist with respect to operant conditioning in human and non-human animals, and whether there is a reduction in the integrity of experimentally derived principles and the extent to which these principles may be applied to behaviour in natural settings without any problems (Foxall 1990, 1992b, 1995c, 2010b).

1.2.3 From Individuals to Firms

The research applies the principles of individual psychology to the firm, a higher aggregate level of analysis. The project makes a methodologically convenient (oversimplifying) assumption and treats the firm as a behaving individual (a distinct legal person) the emissions of which fall under the control of its internal members and of external stakeholders. Such treatment allows the focus on constructing a careful analysis of the natural selection dynamics operating on the marketing practices of interest³⁸.

1.3 A Strategy for Qualitative and Interpretative Behaviourist Research

Having outlined the more pressing issues, the discussion now turns to describing the overarching methodological strategy adopted in this research.

The potential contributions that operant psychology has to make on providing an understanding of the situational influences of real world behaviour should not be dismissed. The preceding discussion begs the question whether there is a systematic and rigorous alternative to Narrative Interpretations that takes into consideration the traps of inductive generalisation across spaces and species while still adhering to radical behaviourist principles.

³⁸ This assumption is detailed at greater length in Appendix A1.1.

Foxall (1990, 1999c, 2005, 2010b) takes a significantly different approach to the orthodox method in applying operant principles to real world human economic choice behaviour. In developing his research programme, Foxall appears to apply a three-pronged approach that emphasises: First, adopting a critical stance to radical behaviourist philosophy and related science recognising its limits in providing a comprehensive explanation of human behaviour (e.g., Foxall 1990, 1996b, 1998b, 2001, 2007c, 2010b)³⁹. Second, employing a rigorous empirically based approach with the aim of defining the scope, limits, and potential contribution of the science of behaviour over the dominant cognitive paradigm with respect to understanding and explaining the situational influences of human behaviour in natural settings (Foxall 1990, 1999c, 2005, 2010b). Third, implementing a strategy that guides individual empirical and conceptual work and the overall emergent research agenda. The strategy involves: (a) establishing, as a starting point, a parsimonious psychological model with a minimum set of assumptions; (b) defining a theoretical perspective through which to elaborate, interpret, and apply the model to the socio-economic phenomenon of interest⁴⁰; (c) applying the theoretical perspective in conjunction with the underlying psychological model to develop a first approximation or baseline framework that elucidates the particular phenomenon; (d) Deriving propositions and rules of correspondence that allow empirical investigation, testing, and refinement following investigation; (e) devising an appropriate and explicit methodology, which includes criteria for evaluation; (f) conducting the analysis to generate the interpretation and discussing within relevant literatures; (g) evaluating each aspect of the research identifying extent of achieving research purpose, strengths, limitations, refinements, and areas for future research (Foxall 1984, 1990, 1995b, 1996b, 1997b, 1998b, 1999c, 2005, 2010b, c). In this approach, there is a marked and

³⁹ This said, Foxall (1990, 1999c, 2005, 2010b) appears to recognise the potential contributions that operant psychology may generate over a cognitive approach in yielding a better understanding and explanation of the nature of situational influences on human economic choice behaviour. The scope of such contributions may only be uncovered through a programme that also includes a systematic and rigorous application of the principles of operant psychology in empirical research of behaviour taking place outside the confines of the lab.

⁴⁰ The theoretical perspective is usually embedded firmly within the economic and management literature to introduce a detailed operant *and* economic interpretation of the subject matter. The approach generates a more comprehensive and specialised appreciation of the phenomenon, coherence with economic (and marketing) theory, and ensures that the right conclusions are drawn from the analysis (Foxall 1998b; Foxall *et al.* 2006; Vella and Foxall 2011, 2013). In addition, such an approach indicates which aspects of operant psychology would be more relevant for operationalization.

recurring focus on parsimony, consistency, incremental theoretical refinement, the continual application of principles in empirical *destructive testing* and evaluation according to criteria of usefulness, validity, and reliability (e.g., Foxall 1984; 2010b)⁴¹.

The hallmark contribution arising from the implementation of this strategy is the Behavioural Perspective Model (BPM). The model is proposed and developed by Foxall (1990, 1996b, 1997b, 2010b) as a theoretical device used in lieu of the three-term contingency to interpret economic behaviour where experiments are not possible, feasible, or desirable. The BPM is specifically constructed to account for two fundamental weaknesses of the EAB, first, non-human animal experiments provide very limited insights into the situational influences on the behaviour of humans; and, second, even when experiments are carried out on humans, laboratory settings are significantly more restrictive than natural ones (e.g., Foxall 1990, 1993c, 1994, 2001)⁴². Indeed, the BPM relies both on the evidence generated through the study of human behaviour (Foxall 1990, 1993c) and on the evidence that the research programme associated with it has generated⁴³.

⁴¹ Thus, the discontinuity of principle itself is subjected to destructive testing allowing empirical evidence to mount in falsification of the hypothesis (see in particular empirical work within the research programme that explicitly takes this position namely, Foxall (1996b, 2001, 2005, 2007a, 2010b, 2010c), Foxall *et al.* (2007), Vella and Foxall (2011), and, Foxall and Sigurdsson (2013) and also Section 1.4). On the other hand, most behaviourists never put the assumption of the continuity of principle to the test.

⁴² As an elaboration of the three-term contingency, the BPM may be defined as a selectionist framework for investigation and interpretation. The BPM addresses these issues by assuming (a) the bifurcation of reinforcement to differentiate between the reinforcing or punishing effects of utilitarian (value in use) and informational (roughly, exchange value and primarily social feedback) consequences of behaviour and reflect essential differences between human and non-human animal behaviour. It appears that the three-term contingency rests upon the assumption that all reinforcement (including social sources of reinforcement) are utilitarian in nature. (b) A scope or continuum of settings from relatively closed to relatively open which, theoretically, reflect the degree to which behaviour may be said to come under environmental control within the experimental laboratory in contrast to the real world. (c) The role of verbal behaviour in individual consumer purchasing and consumption. Otherwise, the BPM remains relatively consistent with behaviourist principles (Foxall 1990, 1996b, 2001, 2005, 2010b). The details of the BPM are discussed in Chapter 4, Section 4.2.

⁴³ For a selection of the empirical work based on the BPM see Foxall (2005), Foxall *et al.* (2007), Foxall (2010c), and Vella and Foxall (2011). Foxall has also utilised the BPM to generate conceptual interpretations of complex behaviours, for example, the operant reinterpretation of the various elements of the marketing mix as situational influences on consumer behaviour (Foxall 1990); and, the interpretation of consumer behaviour that may be harmful to the environment as a means of demonstrating the contributions of the BPM as a theoretical and interpretative framework for understanding situational influences on such deleterious behaviour and how these influences would operate (Foxall 1995b; Foxall *et al.* 2006; Foxall 2014).

The principle focus of the research programme utilising the BPM is consumer behaviour in natural setting and an inter-disciplinary approach is applied in this endeavour⁴⁴. The *Marketing Firm* (Foxall 1999b) is a conceptual interpretation of marketing behaviour in operant terms using the BPM⁴⁵. The methods usually adopted in the programme are surveys and the statistical analysis of quantitative datasets. However, case studies (Vella and Foxall 2011) and experiments have also been employed (e.g., Sigurdsson *et al.* 2009)⁴⁶. Although interpretive research within the programme does not lead to scientific explanations in the behaviourist sense of the word (Foxall 1993a, c), it is constructed according to the precepts of a natural science approach to behaviour. Such research goes beyond narrative interpretation because it employs an explicit research method and its product is open to evaluation and subject to peer review (Vella and Foxall 2013). It is thus falsifiable.

Overall, the methodological strategy has resulted in a relatively successful and growing research programme (Foxall 1996b, 2001, 2005, 2007a; Foxall *et al.* 2007; Foxall 2010b, c; Vella and Foxall 2011; Foxall and Sigurdsson 2013) and attests the relevance and importance of utilising the BPM both as a stand-alone interpretive device for qualitative work and as a framework within which to generate, test, and analyse hypotheses in survey

⁴⁴ The main disciplines are economics, psychology, marketing management, and consumer behaviour research within marketing.

⁴⁵ As such the *Marketing Firm* provides an operant interpretation of behaviour of the firm to complement that developed on purchase and consumption behaviours (Foxall 1990, 1997b, 2001, 2005, 2007a). Since both interpretations share a common conceptual framework, the BPM, purchase and consumption behaviour and marketing practices may be integrated to investigate and understand the nature of their interrelationship (Foxall 1990, 1994, 1997a, 1999b, 2001; Vella and Foxall 2011).

⁴⁶ With the exception of Vella and Foxall (2011), the BPM has never been applied to direct empirical testing in case study research populated by qualitative evidence. Although, for example, Xiao and Nicholson (2011) do utilize expert interviews and focus groups with consumers to gather data as part of their design, the instruments are used to establish and refine constructs as a prelude to their survey. See Foxall (2005) and Foxall *et al.* (2007) for instances of similar usage. Therefore, the emphasis within the research programme is primarily on quantitative methods with meaningful use of qualitative data.

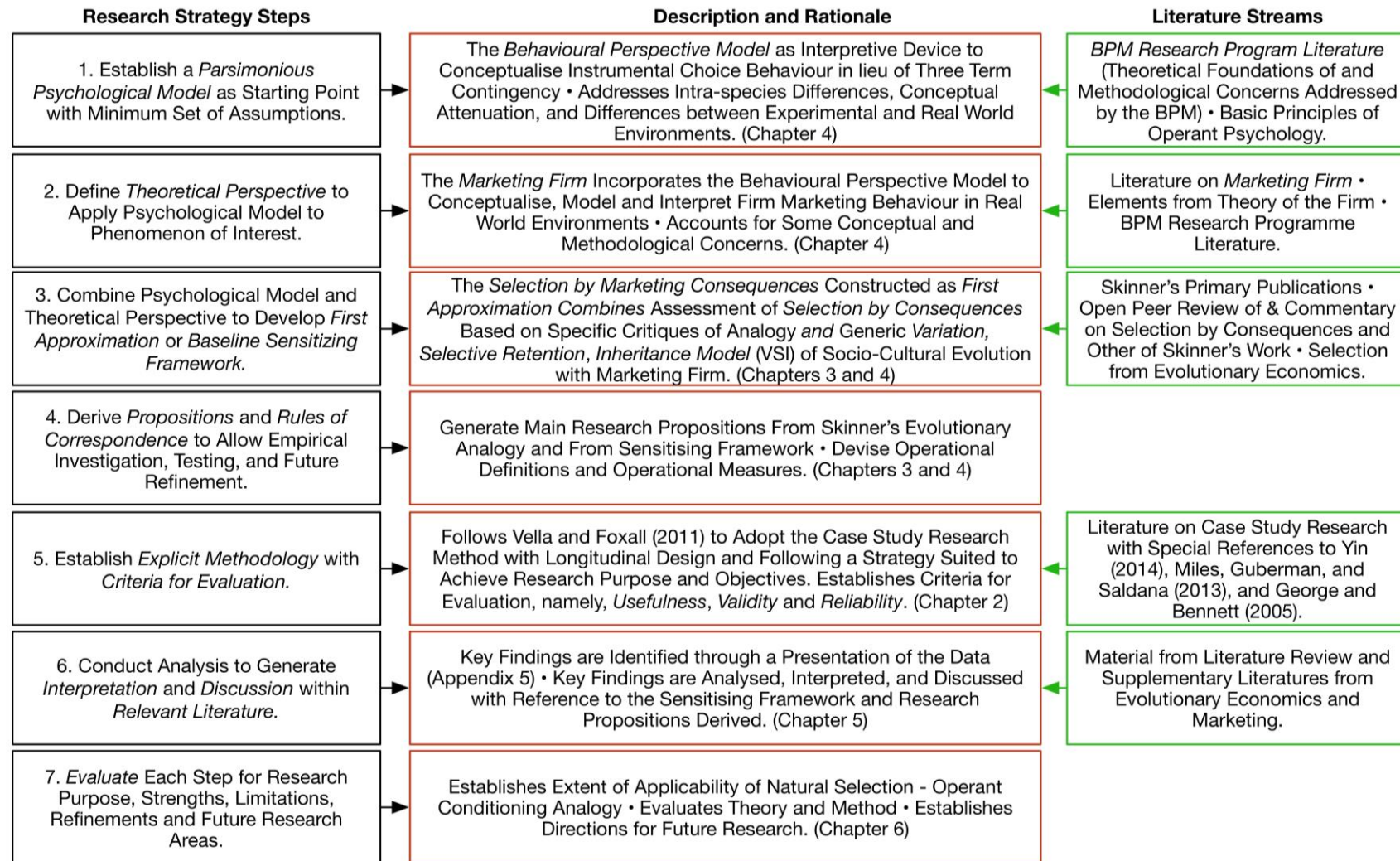
research and in the analysis of large datasets⁴⁷. Most importantly, the relative consistency in the findings across similar studies (see, for example, Foxall *et al.* 2007) is a testimonial to the basic validity and reliability of the BPM in quantitative research.

This research has been conceptualised as falling within the BPM research programme and, thus, adopts this strategy to accomplish its purpose (Figure 2)⁴⁸.

⁴⁷ The BPM research programme has attracted a small but growing group of researchers who, over the years, contributed directly and regularly to the empirical aspects of the BPM. However, since the programme occupies a very small niche within consumer research, it does not appear to have attracted much critical evaluation. Arguably, the lack of critical interest is probably due to its explicit adherence to radical behaviourism and to the dominant cognitive approach to researching consumer behaviour. Within evolutionary economics, the assumption of bounded rationality informs the behavioural foundation of approaches to firm behaviour (Marengo and Willinger 1997; Nelson and Winter 2002; Dosi and Marengo 2007; Dosi 2013; Nelson 2013). Radical behaviourism and operant psychology appear to have been rejected *a priori* without much consideration as to potential contributions to understanding the situational influences on firm behaviour (see, for example, Felin and Foss 2011; Winter 2011; Felin and Foss 2012). The BPM research programme is more commonly known as Consumer Behaviour Analysis (CBA). See also Appendix 4.1.

⁴⁸ The figure is based on Appendix A1.3, which explains the adopted methodological strategy in greater detail.

Figure 2 – The Research Strategy Adopted: Steps, Rationale, and Literature Informing the Project



1.4 Research Purpose, Questions, Objectives, and Design

Selection by Consequences refers to a meta-principle introduced by Skinner (1981) and through which he draws the explicit analogy between the evolutionary processes involved in biological natural selection and trial-and-error learning processes as explained by operant conditioning. More importantly, Skinner's fundamental claim is that the evolution of cultural practices proceeds as a special application of operant conditioning and that operant conditioning constitutes a "sufficient explanation" – "*no new behavioural processes are involved*" in the evolution of cultural practices (Skinner 1961b, 1981, 1984b, f, h). These processes refer to the experimental procedures of reinforcement and punishment through which behaviour is acquired (shaped), maintained, or discontinued via changes in its environmental influences⁴⁹.

Through research, this project assesses and evaluates Skinner's analogy and key claim as it applies to characterise the evolution of firm marketing behaviour as a *special* instance of socio-cultural practices⁵⁰.

In the light of the preceding discussion, three central concerns are of interest: (1) uncovering the substantive dimensions of the analogy across Skinner's primary publications to assess its completeness, strengths, and weaknesses and identifying necessary but missing concepts; (2) overcoming the methodological obstacles in applying the principles and results uncovered in controlled experimental spaces using human and non-human individuals to the marketing practices of firms as these have been observed to occur in actual market settings; and, (3) conducting a systematic and rigorous case study

⁴⁹ See Chapter 3, Section 3.2.

⁵⁰ Within this research, marketing is characterised as an instrumental socio-economic practice and conceptualised in terms of mutually reinforcing behavioural interactions between the firm and its customers that terminate in literal exchange transactions. The mutual surrender of property rights in literal exchange is clearly instrumental: the rewarding and punishing consequences of such behaviour within a firm-customer relationship *may* effect the likelihood of its recurrence in sufficiently similar settings (Foxall 1999b; Vella and Foxall 2011). (For the instrumental nature of economic behaviour see also Alhadeff (1982), Foxall (1990), and Staddon (2001).) As shall be discussed in Chapter 4 (Section 4.3.2), economic relations may involve only social exchange, on one extreme of a continuum, only literal exchange, on the other extreme, or a combination of social and literal exchange (Foxall 1999b; Vella and Foxall 2011). Economic practices are assumed subset to socio-cultural practices.

investigation based on these two dimensions and the knowledge derived within the EAB to construct an operant interpretation of the natural selection dynamics operating on the behaviour of the firms described in real world observations.

The *Marketing Firm* (Foxall 1999b; Vella and Foxall 2011, 2013) provides the main theoretical underpinning of the evaluation since it represents an operant perspective to the economic theory of the firm and accounts for the methodological obstacles via the use of the BPM. As an elaboration of the three-term contingency, the BPM (Foxall 1990, 1996b, 2010b) accounts for a range of problems arising when applying the principles of operant conditioning as developed within laboratories through an experimental analysis of human and non-human behaviour to human behaviour in natural settings. The research is also geared at further developing this perspective and extending the theory into evolutionary economics by providing empirical insights on the dynamics of the mechanism of natural selection⁵¹.

Hence, the aims of the research are primarily evaluation and theory building.

The overarching focus of the empirical dimension of research is to investigate whether the processes of behavioural shaping, maintenance, and discontinuity through the experimental procedures reinforcement and punishment are appropriate analogies to describe the processes of environmental selection for and against the marketing practices of Wall's through an operant interpretation of qualitative longitudinal evidence. The data is in the public domain and relates to a full market investigation by the Monopolies and Mergers Commission into the marketing practices of ice cream manufacturers published in 1979⁵². Of particular empirical interest is the stable and recurring feature of freezer and retail outlet exclusivity within the UK ice cream market. The investigation serves to derive an empirically based

⁵¹ Due to the reliance of the Marketing Firm on the BPM, the study also serves to test and evaluate the relevance of retaining the model in further developing an operant perspective on firm behaviour.

⁵² The Monopolies and Mergers Commission was the authority responsible for monitoring and regulating competitive behaviour until 1999. The organisation was then replaced by the Competition Commission, which, in turn, was replaced by the Competition and Markets Authority on the 1st April 2014.

understanding of how the selection mechanism as envisaged in Skinner's analogy 'actually' works. A valid and reliable interpretation is generated through the construction and use of a sensitizing framework (termed the Selection by Marketing Consequences (SMC) framework) that relies almost exclusively on the BPM as applied within the Marketing Firm⁵³. The research builds upon and re-evaluates the behaviourist case study approach proposed and developed in Vella and Foxall (2011, 2013).

The project addresses two theoretical questions within the delineated empirical setting:

1. Is the process of operant conditioning applicable in analogy to qualitatively explain the natural selection dynamics of selective retention and elimination by the environment of marketing repertoires of firms for their individual mix configurations (including characteristic traits) within a market?
2. To what extent do the observed stable and recurring traits, as phenotypic features, describe the causes of this selection process?⁵⁴

Given the theoretical considerations and these related questions, the aims of the case study are to interpret the evidence via the SMC to: First, qualitatively demonstrate over a specific period in Wall's history (1922 to

⁵³ As a first approximation or baseline framework, the SMC is based on a relatively broad and generic conceptualisation. Refinements and elaboration form the basis of successive stages of future research (Foxall 1984, 1999c; Churchill and Iacobucci 2005; George and Bennett 2005; Foxall 2010b) and complexity is introduced gradually and according to the nature of the phenomenon under study (Foxall 2005, 2010c, b) or as dictated by empirical work (Foxall 1984, 1999c) to improve explanatory and predictive power of the (Foxall 2005, 2010b). What the process may lose in oversimplifying certain aspects of conceptual development should be offset by a more comprehensive account of and greater focus on the theoretical variables of interest (Nelson and Winter 1973). The first approximation provides the necessary basis for identifying refinements and future research directions thereby forming a foundation for developing a research agenda for the Marketing Firm.

⁵⁴ The research questions are based on the widely accepted distinction (e.g., Vromen 1995; Hodgson and Knudsen 2010) made by Sober (1984) with respect to his distinction between "selection of" and "selection." Sober (1984) distinguishes between what is being selected (selection of marketing repertoires, the object of selection) and the reasons for which the object is being selected (selection for, namely, directly for the practices and characteristics contained in the marketing repertoires as these interact within a specific environment (the *phenotype*), and indirectly for the relatively stable rules summarised/summarising the individual's learning history (the *genotype*) that facilitate the replication of practices and characteristics). These points are explained in detail in Chapter 3 (Sections 3.3 and 3.4). The main idea behind the distinction is to guide evolutionary investigations towards the most valid and reliable reasons for which a particular practice and its characteristic traits has survived the processes of natural selection. In other words, that the practice and/or trait is not a free rider and does indeed confer adaptive advantage.

ca.1978) how the market environment selectively shaped and retained (reinforced) these characteristic traits in the practices of Wall's and how the environment selectively eliminated (punished or did not reinforce) other practices and their characteristic traits. Second, identify the characteristic traits of market practices (with special emphasis on exclusivity) of Wall's that resulted in fitness differences among the brands of Wall's vis-à-vis rival brands and the reasons for which these traits gave rise to the differences in fitness.

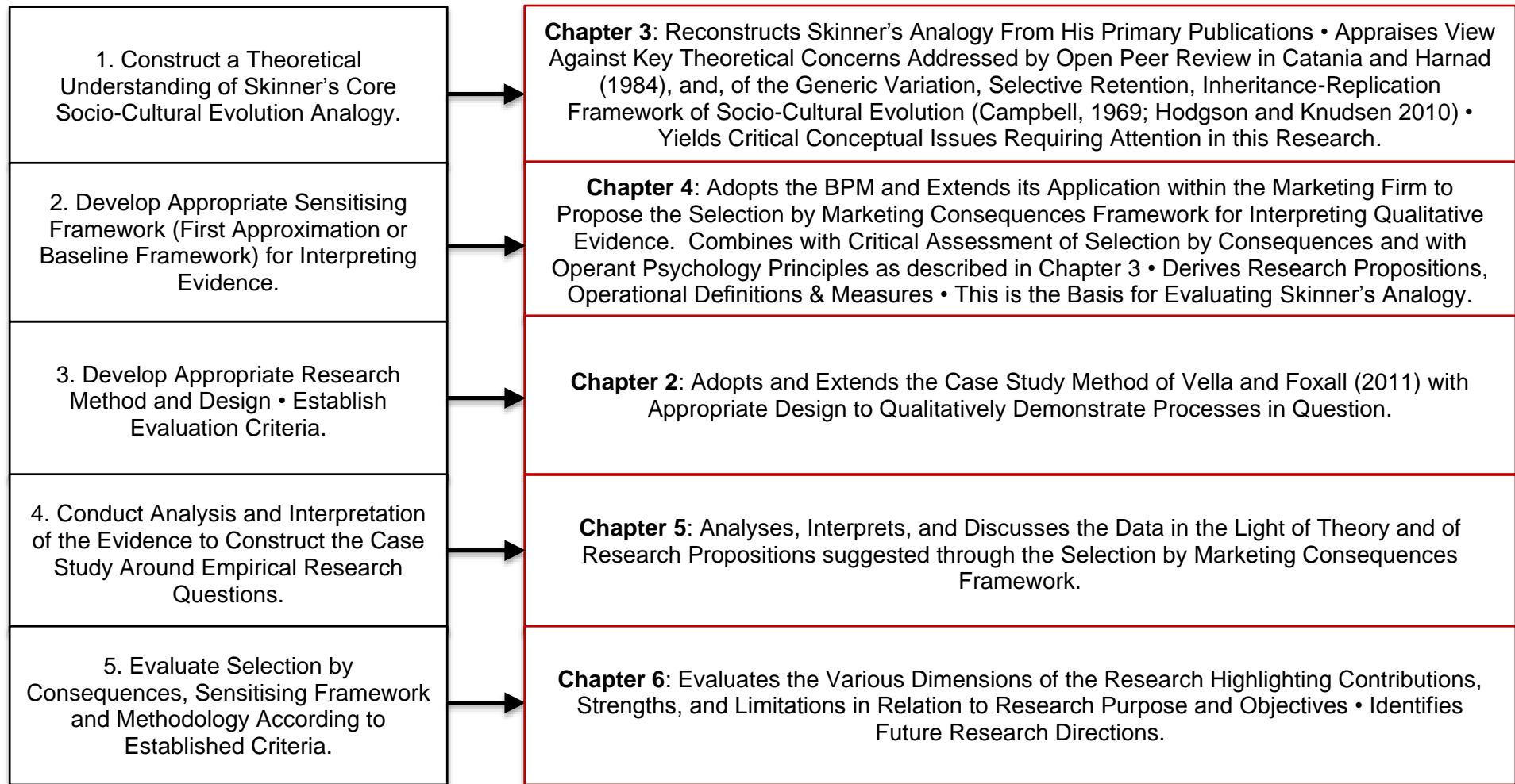
The empirical research questions are:

1. Is the process of operant conditioning applicable in analogy to qualitatively explain the environmental dynamics of selective retention and elimination *of marketing repertoires for the marketing practices of Wall's (including recurring characteristic traits) in the UK?*
2. How and to what extent have the lineages of marketing practices of Wall's, in interaction with the environment, changed successively between 1922 and 1978 allowing certain traits to emerge and become a recurring and stable feature of the market?
3. What are the advantage-conferring properties of exclusivity of supply by Wall's to retailers? How and to what extent have the various successive changes in environment-behaviour interactions resulted in above average differential rates of economic fitness of Wall's brands due to exclusivity?

The key deliverables of the research are depicted in Figure 3.

The following Chapter discusses the case study method and its design considered appropriate to accomplish the research objectives and address the questions.

Figure 3 – Key Deliverables of the Research



Chapter Two

Case Study Research Design

2.1 Introduction

This Chapter discusses the research method and design appropriate to produce a plausible, useful, valid, and reliable operant interpretation.

In general, the project assumes radical behaviourism as its philosophy of science because it is best to address the research objectives from *within* the paradigm. With its exclusive focus on systematically and rigorously establishing the situational determinants of observed behaviour, operant psychology is expected to contribute by introducing a research agenda on the processes of economic evolution by natural selection that compliments the dominant cognitive approach. Radical behaviourism prescribes an inductive strategy involving the intensive study of single subjects within experimental laboratories (Foxall 1995c, 1998b, 2010b; Catania 2012; Leslie 2012; Vyse 2013)⁵⁵. Chapter 1 argued that when experiments are not possible, feasible, or desirable, operant investigations of real world behaviours proceed relying on interpretation. However, a more systematic and rigorous approach is necessary to avoid the investigation being categorised as illustration or speculation.

The literature of the BPM research programme addresses a variety of methodological concerns surrounding operant interpretations including (1) their nature (Foxall 1990, 1994, 1995c, 1996b, 1998b, 2001, 2010b); (2) the use of the BPM as an interpretive device to draw valid and reliable inferences from experimental to real world settings and the use of analogies to link experimentally derived concepts and procedures with real world empirical observations (Foxall 1990, 1994, 1998b, a; Foxall and Schrezenmaier 2003; Foxall 2010b; Vella and Foxall 2011, 2013); (3) an affirmation regarding the use of a qualitative approach within behaviourist consumer research (Foxall 1995c, 2001, 2010b); and, (4) *mention* of the case study method (Foxall 2010b). However, until Vella and Foxall (2011, 2013) the literature neglects a deeper specification of the form case studies should take as a systematic and rigorous

⁵⁵ See especially Zuriff (1985) and Foxall (1995c, 2010b). Recently, there have been calls to broaden the methodological repertoire of operant psychology rather than maintaining a sole focus on experimental methods (e.g., Vyse 2013).

method to conducting *qualitative* research⁵⁶. In addition, the literature does not address the issue of a suitable design that would enable reducing the over-reliance on inference within operant interpretation. Further, very little prescription is provided with respect to *how* an analysis and interpretation of qualitative empirical data is to be conducted. Vella and Foxall (2011, 2013) attend to these gaps in the literature by providing a unique example of the use of the case study as a research method applicable to operant psychology and by tackling the more important aspects of the processes involved in analysing a qualitative dataset. However, the over-reliance on inference remains and this is problematic because as their design stands, it does not facilitate demonstrating operant conditioning.

The present research recognises *how* the actual analysis is carried out is very important to the plausibility of the interpretation and to the validity and reliability of the research (Huberman and Miles 2002; Miles *et al.* 2013). The primary contribution of this chapter is to suggest a design that allows qualitatively demonstrating processes analogous to operant conditioning. This, therefore, relaxes the need to rely on inference⁵⁷.

The chapter, therefore, emerges as a critical appreciation of Vella and Foxall (2011, 2013) extending their work to account for a number of limitations that would hinder accomplishing the objectives of this research. As far as the behaviourist methodological literature is concerned, the case study method does not appear to have been used prior to Vella and Foxall (2011). However, the method is sufficiently developed within the social sciences under a range of positivist and non-positivist perspective not to constitute an insurmountable obstacle. The approach taken here is broadly post-positivistic⁵⁸.

⁵⁶ This stands in contrast to the extensive attention given to developing the processes of quantitative research within the BPM research program. See, for example, Foxall and Greenley (1998), Foxall and Greenley (2000), Yani-De-Soriano and Foxall (2002); Foxall and Schrezenmaier (2003), Foxall *et al.* (2007) and Sigurdsson *et al.* (2009) wherein a diverse range of quantitative methods are used and underlying designs are meticulously explained and elaborated. For a definition of the term *qualitative research* see Appendix A1.2.

⁵⁷ Ultimately, “ad hoc postulation of reinforcers and stimulus histories for which one has not the slightest grounds except the demands of the theory” (Dennett 1975, pp. 74-75) should be avoided as much as possible. This said, a degree of inference remains.

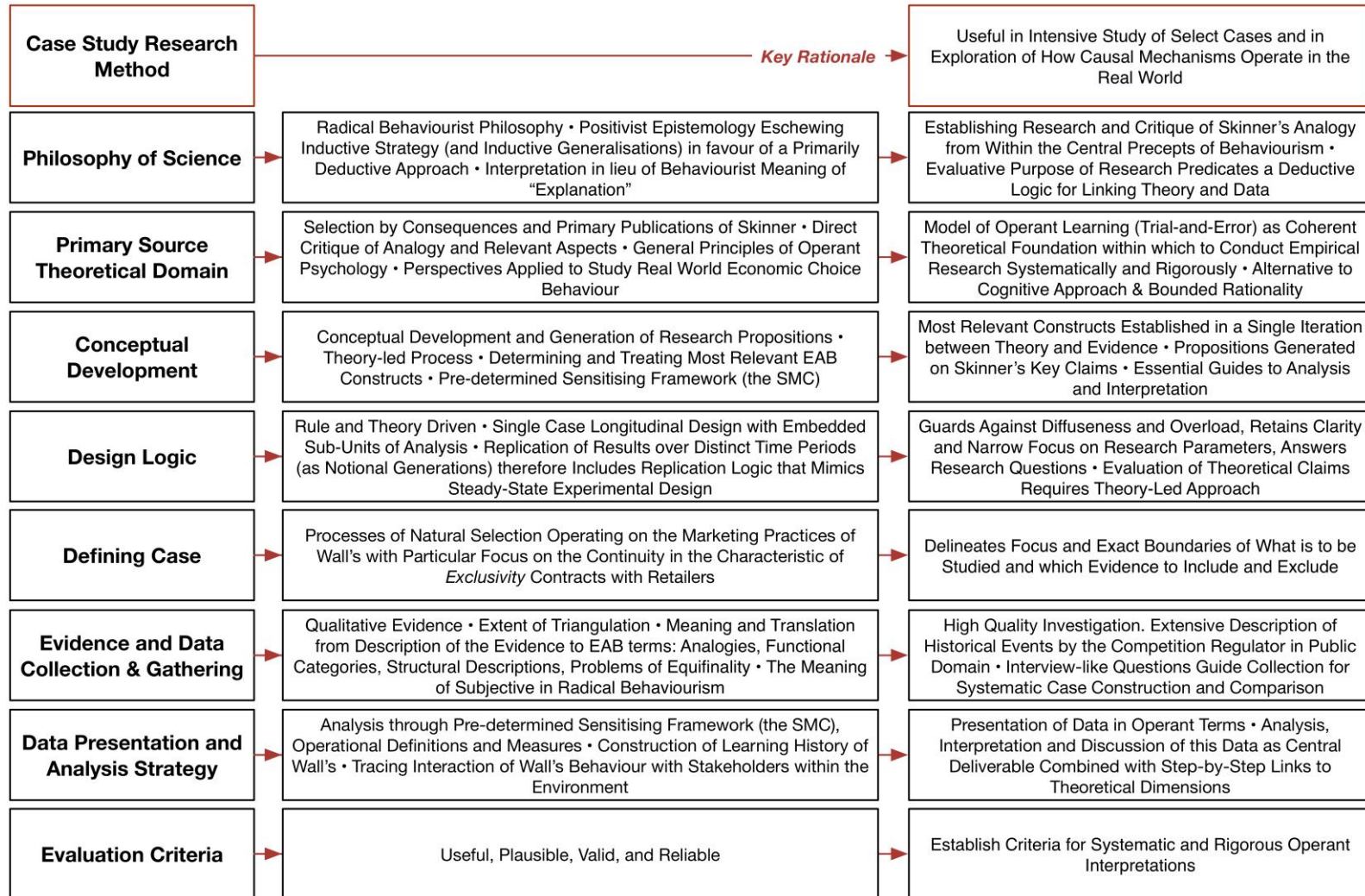
⁵⁸ Contrast this epistemological stance to the logical positivist approach taken by Skinner (see especially Foxall (2010b) Chapter 2).

The sole emphasis of this chapter is on the specific particulars of and the issues encountered in designing *this* research rather than the broader methodological debates on case studies within the literature⁵⁹. The guiding epistemology is broadly positivist and, in contrast to behaviourist philosophy, the approach is predominantly deductive. Four critical questions are answered through this chapter: What method is appropriate for those complex contexts of behaviour wherein the variables of interest cannot be identified, isolated, controlled, and manipulated with the degree of precision afforded by laboratory settings? How would such a method be designed rigorously and systematically to allow demonstrating reinforcement and punishment analogues qualitatively? How are the findings of the study properly analysed and interpreted and then related to theory? What criteria of evaluation should be employed to establish that the research was 'systematic and rigorous'?

Section 2.2 briefly describes the rationale for selecting the case study method and Section 2.3 attends to a range of design elements of the case study (see also Figure 4).

⁵⁹ The main text of this chapter purposely avoids discussing certain methodological debates, for example, whether case studies are considered as a method or a design, whether case studies should have a pre-structured design, whether a deductive approach should be used, whether case studies are only to be informed by non-positivist methodologies and so on. These have been covered to varying extent in Vella and Foxall (2011, 2013) and are expounded in most standard methodological texts including: Stake (1978, 1995), Eisenhardt (1989), Lee (1999), Gomm *et al.* (2000), Patton (2002), (Maxwell 2005), George and Bennett (2005), Gerring (2007), and Yin (2014). Instead, the overarching objective of this chapter is to demonstrate a carefully planned case study as a method for yielding valid and reliable empirically grounded contributions to theory (Eisenhardt 1989; George and Bennett 2005; Eisenhardt and Graebner 2007; Yin 2009; Flyvbjerg 2011; Vella and Foxall 2011, 2013; Yin 2014) that are cumulative and comparable (George and Bennett 2005; Yin 2009, 2014). Therefore, the emphasis is on the design particulars of *this* research and on all problems encountered and decisions taken. A series of appendices supplement this chapter. Thus, the main text remains more concise and avoids being overloaded.

Figure 4 – Summary of Key Dimensions of the Research Method and Rationale



2.2 A Rationale for Using Case Studies as the Research Method

The case study *research method* was selected over alternatives for three key reasons⁶⁰.

First, the research is a continuation of another case study and the decision for utilising the Commission's report was taken at an early stage in the research. Utilising this kind of qualitative evidence was determined to be the best route for accomplishing the research objectives: the investigation is bound by a consistent theme and provides an extremely rich and detailed historical narrative of the marketing practices of the various national manufacturers in natural settings (Vella and Foxall 2011). In addition, the report was generated and compiled by an unrelated third party and for purposes different to those that govern this research. Therefore, the evidence is not biased by the researcher's own theoretical perspectives, expectations, assumptions, and otherwise in any way. A robust method was required to handle this kind of qualitative evidence⁶¹.

Second, the case study is an ideal method for specifying and delineating key dimensions of the subject of theoretical or empirical interest as a bounded system and intensively studying a single or a relatively small sample of cases of that phenomenon and its dimensions (Stake 1995; Lee 1999; Gerring 2004; George and Bennett 2005; Bryman and Bell 2007; Gerring 2007; Flyvbjerg

⁶⁰ Within this research, a case study is defined as a *method*, i.e., a formal and distinctive approach to empirical inquiry with its own unique designs (Stake 1978; Eisenhardt 1989; Stake 1995; Lee 1999; Hammersley and Gomm 2000; Berg 2001; Rowley 2002; George and Bennett 2005; Eisenhardt and Graebner 2007; Yin 2014). Each research method is best suited to accomplish different tasks to the extent that methodological choices should be dictated by research objectives and the degree to which each method is suited best to accomplish those goals and provide suitable answers to research questions (Eisenhardt 1989; Crotty 1998; Berg 2001; George and Bennett 2005; Bryman and Bell 2007; Creswell 2009; Yin 2009).

⁶¹ Appendix A2.1 provides a brief rationale why the case study method was selected in favour of alternative methods on its capacity to robustly handle historical qualitative evidence.

2011; Yin 2014)⁶². The method locates cases within a particular context (Stake 1995; Lee 1999; Gerring 2004; Bryman and Bell 2007; Gerring 2007; Flyvbjerg 2011; Yin 2014) signalling the dynamics, complexities, and ambiguities of the real world contexts of behaviour (Campbell 1984b; Eisenhardt 1989; Dyer Jr and Wilkins 1991; Stake 1995; Lee 1999; Gerring 2004; George and Bennett 2005; Gerring 2007; Yin 2014)⁶³. Cases are also considered across time thereby providing a temporal or historical essence to case studies (Stake 1995; Lee 1999; Bryman and Bell 2007; Gerring 2007; Flyvbjerg 2011). There is an emphasis on the unfolding nature of interrelated events surrounding the case providing a more holistic perspective (Flyvbjerg 2011; Yin 2014): “Because the contextual conditions may interact in subtle ways with the case, a good case study should therefore lead to an insightful understanding of a case and its internal as well as its external complexity” (Yin 2014, p. 209).

Third, the historical emphasis of case studies makes the method very appropriate for both the research objectives and the retrospective nature of operant and evolutionary interpretations. The method possesses a characteristic propensity to induce a very detailed investigation from the perspective of a case sampled from a population and located within specific real world contexts as events gradually or dramatically unfold over time (e.g., George and Bennett 2005; Yin 2014). As discussed hereunder, historical evidence is imperative in demonstrating operant conditioning and in framing the research in evolutionary terms.

⁶² The extent to which each unit may be studied intensively depends on the number of cases being studied – the lesser the number of cases considered, the deeper the case study will be (Dyer Jr and Wilkins 1991; Hammersley and Gomm 2000; Gerring 2007). As shall be seen in Section 2.3.1C, the present case is a single case study. One associated trade-off is that single case studies may not allow for any meaningful comparisons across different units (e.g., Dyer Jr and Wilkins 1991). This may either weaken the theory that is being developed since more cases provide cumulative evidence in its support, rejection, or refinement (Eisenhardt 1989) or simply render the theoretical conclusions as tentative (Dyer Jr and Wilkins 1991, p. 615) and, therefore, as the basis for future research (George and Bennett 2005).

⁶³ In contrast to experimental methods, which create a controlled, simplified, and contrived setting and wherein researchers have direct control over variables, case studies capture real world contexts and, typically, do not involve any control over variables (Hammersley and Gomm 2000; Gerring 2007; Yin 2014). The choice of a case setting, however, should not be mistaken with the selection of a manipulated setting (cf. Gerring 2012). Experimental investigators have *direct* control over the architecture of the setting. Case study researchers do not. Case studies, however, may be designed to gain some of the advantages of experiments (see Section 2.3.1D).

From an operant perspective, the reason why an individual acts the way she does within a given context – that is the *meaning* of behaviour – lies in providing an account that describes the intersection of her learning history of reinforcement and punishment with the present context of behaviour (Foxall 1995c, a, 1997b, 1998b). In other words, the meaning of an emission is expressed in terms of the antecedents of the individual’s behaviour (learning history which summarises the characteristic effects or consequences or function of particular emissions in the past), the signalling function that the stimulus events within the current environment perform because of that history, and the consequences of behaviour as signalled by these antecedents (Foxall 2010b). Thus, the essential components in constructing behaviourist explanations from the perspective of the individual lies in examining both her learning history (as a personal variable) and the behaviour setting (as an extra personal variable) (Foxall 1995c, a, 1997b, 1998a, b, 1999c, 2005, 2010b)⁶⁴. The explanatory core of the BPM is a construct termed the *situation*, which allows the deepest possible examination of situated behaviour (Foxall 1996b, 1997b, 1998b, 2005, 2010b) – the learning history of the individual denotes the temporal dimension whereas the behaviour setting marks a spatial dimension (Foxall 1990, 1997b)⁶⁵. These constructs provide a thorough analysis of what is taking place at a specific point in time.

A central requirement for producing an interpretation of real world behaviour within an overarching evolutionary understanding relates to accessing data that features dynamics, processes, socio-economic interaction within relationships, and cumulative outcomes and change over a relatively

⁶⁴ In this sense, once a learning history is constructed and located within a particular immediate behaviour setting, the meaning of behaviour (the reason why the individual behaves the way she does) is “subjective,” i.e., from the perspective of the individual participant. Behaviourists hold and deploy a different understanding of and approach to what constitutes *the perspective of participants within a specific context*. An analysis of behaviour relies only on observables and subjective meaning is constructed in term of those observables only. The reason why an individual acts the way she does within the current context – that is the *meaning* of behaviour – lies in providing an account that describes the intersection of her history of learning with the current setting wherein behaviour occurs (Foxall 1995c, a, 1997b, 1998b). In contrast, cognitive approaches define subjective meaning in terms of unobservables focusing on individual perceptions, “intentions, choices, objectives, values, perspectives, needs, desires, and agency” (Miles *et al.* 2013, p. 222). Thus, “qualitative data are not so much about behaviour as they are about *actions*, which carry with them intentions and meanings and lead to consequences” (Miles *et al.* 2013, p. 11).

⁶⁵ The construct is examined in greater detail in the explanation of the BPM as it relates to consumer and marketer behaviour in Chapter 4, Section 4.2 and Section 4.3.

substantial history of inter-related events (e.g. Nelson and Winter 1982; Barnett and Burgelman 1996; Marengo and Willinger 1997; Nelson and Winter 2002; Dosi and Marengo 2007; Morlacchi and Nelson 2011; Bairstow and Young 2012; Lavie and Singh 2012; Dosi 2013). Ideally, this history should be continuous. Evolutionary research incorporates a time scale that is long enough to demonstrate related processes and outcomes over generations and emphasises a complete coverage of the historical events experienced by a given population (Aldrich and Ruef 2006).

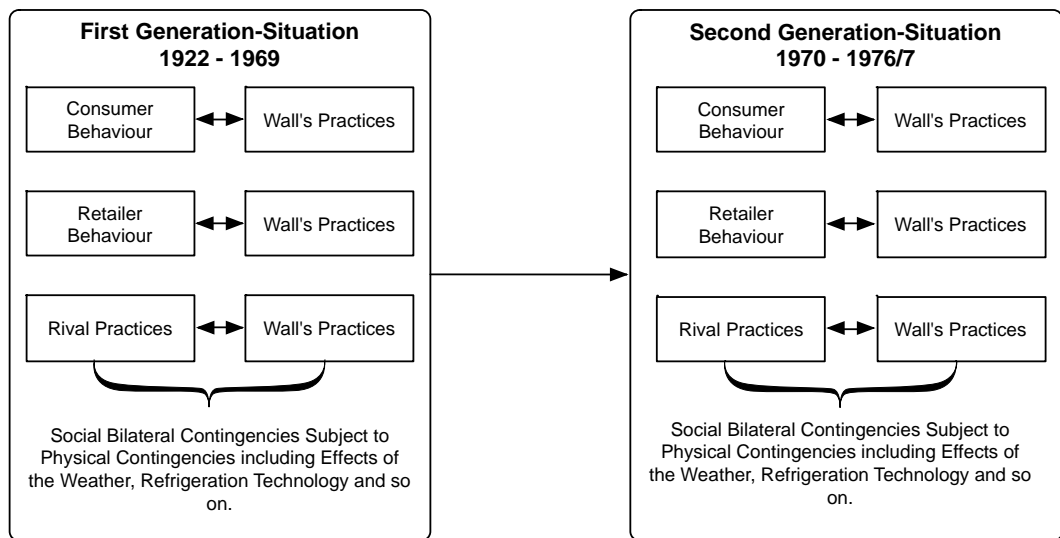
From an evolutionary perspective, learning history (and the regularities or stable contingency relations it summarises, i.e., rules) is analogous to the biological *genotype* (Foxall 1993b, 1997b, 2010b). Within evolutionary economics the genotype is interpreted in terms of 'quasi-stable properties' with a regulatory dimension (e.g., Hodgson 2003; Hodgson 2008, 2009a, b; Hodgson and Knudsen 2010). From a consumer's perspective, learning history represent 'habit' or the potential for the continuity of behaviour within sufficiently similar behaviour settings. Learning history holds replicator function (Foxall 1993b, 1997b, 2010b). Similarly, in application to the firm, learning history is analogous to the genotype of the firm and maintains replicator function. The *phenotype* is analogous to the actual and observable behavioural emissions by the firm within the current environment given the genotype. In this research, environmental interaction is characterised by behavioural emissions within mutually reinforcing social relations among firms and stakeholders (termed as *bilateral contingencies*) against a backdrop of contingencies describing natural phenomena (e.g., seasonality of the ice cream trade due to the vagaries of the weather and climatic conditions in the UK)⁶⁶. These constructs emphasise stability and change over time, the explanatory core of an evolutionary perspective.

Figure 5 provides a diagrammatic representation of the Commission's report. The evidence presented therein allows a distinction between two *separate* situations that are bound historically and, from an evolutionary perspective, are assumed to depict empirical snapshots of individual

⁶⁶ These points will be elaborated further in Chapter 3 (Section 3.3 and Section 3.4) and Chapter 4 (Section 4.3).

generations of lineages of marketing behaviours and environmental contingencies⁶⁷. Demarcating generations is an integral dimension of evolutionary explanations to: (a) distinguish between the changes occurring during a single iteration of variation, selective retention and elimination, and inheritance replication (*within-situation analysis*), and (b) understand the extent to which change is carried forward from a single iteration to the next (*cross-situation analysis*) (Metcalf 1998; Becker 2001; Pepper and Knudsen 2001; Knudsen 2002; Metcalfe 2005).

Figure 5 – Distinct Generation-Situations for Analysis and Comparison



Analysis and Interpretation of Retail Marketing Practices across Space (Distinct Situations characterised by Social Bilateral Contingencies and Physical Contingencies) and Time (Learning History of Wall's and Environmental Change across Generations)

Within-situation analysis allows examination of the *proximal* or immediate dynamics of selection by environmental consequences in a given generation. That is, generation of the phenotype, the interaction of the genotype within the specific environment. Cross-situation analysis allows the examination of the nature of *distal* or remote features, processes, and effects of selection by environmental consequences over generations. That is, the extent to which

⁶⁷ Refer to footnote 6 in Chapter 1 (Section 1.1.1 on page 13) for definitions of lineages and notional generations. “The challenge is to connect changes in the two sets of ... variables; changes in the distribution of phenotypes must be linked with changes in the distribution of genotypes ... [This] boils down to two essential and independent sub-processes: (1) differential survival because of phenotype-environment interaction, and (2) the perpetuation of phenotypes to the next generation through the replication of genotypes. What has been spelled out may be termed evolution (cumulative causation over generations) by means of natural selection, and it is the accumulated effect over numerous generations which makes the account evolutionary” (Knudsen 2002, p. 448).

some phenotypes survive and propagate over generations due to replication of the genotype.

Case studies are important methods useful in uncovering and explaining causal relations, mechanisms, and outcomes in situ (Miles and Huberman 1994; Lee 1999; George and Bennett 2005; Gerring 2007; Yin 2009; Miles *et al.* 2013; Yin 2014). If carefully planned and conducted in a valid and reliable way, case studies have the capacity to deliver in-depth investigations of *how* causal mechanisms actually operate in the real world (Stake 1995; Lee 1999; Hammersley and Gomm 2000; George and Bennett 2005; Gerring 2007; Gibbert *et al.* 2008; Yin 2009, 2014)⁶⁸.

2.3 The Design of the Case Study

Having established a rationale for using the case study method, attention now turns to the main decisions in designing case study research. Figure 6 provides an overview of the central design issues commonly identified by several researchers (e.g., Dnes 1992; Miles and Huberman 1994; Stake 1995; George and Bennett 2005; Gerring 2007; Yin 2009; Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013; Yin 2014).

⁶⁸ Whether qualitative evidence can be used to construct accounts *describing* causation is not put into question. The issue lies in whether and the extent to which qualitative evidence can be utilised to generate causal *explanations*. From a strictly behaviourist perspective, the conclusions derived from case studies populated by qualitative evidence are not explanations (see Chapter 1, Section 1.2). Operant interpretations that are generated through case studies go beyond the provisional status of Narrative Interpretation because they are produced through a systematic and rigorous research method. Case study conclusions are considered as empirically grounded causal hypotheses either for further qualitative refinement or for a quantitative study. See also Appendix A2.2.

Figure 6 – Overview of the Key Design Issues and Decisions

Section 2.3.1	The Underlying Logic governs the entire research process to ensure that the research objectives are met and research questions are answered in a valid and reliable way.	Pre-Structured Rule Driven • Longitudinal • Single Case with Embedded Units of Analysis • Replication Logic that Mimics Steady State Experiments to Qualitatively Demonstrate Operant Conditioning.
Section 2.3.2	Logic for Linking Theory to Data and Extent to Which Case Study is Theory Driven.	Theory Driven and Deductive Logic for Linking Theory and Data.
Section 2.3.3	Selecting the Data Sources and Evidence most relevant to the research objectives • Identifying the Limitations of the Data Sources in Relation to their Capacity of Answering Research Questions.	Secondary Qualitative Evidence prepared by the Monopolies and Mergers Commission resulting from a Full Market Investigation • Single versus Multiple Sources of Data • Triangulation • Limitations of the Commission's Report.
Section 2.3.4	Establishing Case Focus to Delimit Specific Boundaries of What is to be Included <i>and</i> Excluded from the Study • Identify the Unit of Analysis • Decide Whether the Unit of Analysis is Studied Holistically or Unpacked Further into Sub-Units of Analysis.	The Generation-Situation as the Unit of Analysis • Selection for Wall's Marketing Practices at Retail as Case Focus • Wall's as an Outlier.
Section 2.3.5	Data Collection and Gathering , in particular, designing appropriate data gathering procedures and instruments to extract the information necessary.	Open-Ended Questions (Semi-Structured Interview Type) Derived from Sensitising Framework and Applied to Probe the Evidence around the Constructs and Relationships of Theoretical Interest.
Section 2.3.6	Strategies and Techniques for Data Analysis and Interpretation.	Functional Analysis of Behaviour and Sensitising Concepts • Working Hypotheses in Current and Future Research for Testing, Refinement, Retesting • Inferences and Rival Explanations from the Evidence • Standard Data Reduction Techniques, Coding, Within-Case Analysis, Data Displays, & Conclusion Verification.
Section 2.3.7	Evaluation Criteria.	Usefulness • Plausibility • Validity • Reliability.

2.3.1 The Underlying Design Logic

Figure 7 – Designing the Logic Underlying the Research

The **Underlying Logic** governs the entire research process to ensure that the research objectives are met and research questions are answered in a valid and reliable way.

Pre-Structured Rule Driven • Longitudinal • Single Case with Embedded Units of Analysis • Replication Logic that Mimics Steady State Experiments to Qualitatively Demonstrate Operant Conditioning.

A. Pre-Structured Design

The study follows a pre-structured or “tightly coordinated” (Miles and Huberman 1994; Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013) rule-driven (Yin 2014) design with an explicitly stated methodology that maps out and guides the entire research process and that includes the various procedures to ensure the validity and reliability of the research including the fair and accurate collection and treatment of evidence (Vella and Foxall 2011, 2013). The design mitigates against such threats as lack of clearly delineated research bounds, the loss of focus and clarity, being overloaded by the data, the danger of not completing research projects on time (Dnes 1992; Miles and Huberman 1994; Patton 2002; Miles *et al.* 2013; Yin 2014), and situations where the evidence collected does not answer the original research questions (Yin 2014)⁶⁹.

The pre-structured design adopted allows for minor changes in the design to suit the unanticipated events emerging from data collection without altering the scope of the research (Yin 2014). In addition, during the early stages of the research process, iterating between theory and data aided significantly in refining certain aspects of design specifically in establishing the

⁶⁹ Qualitative research is usually associated with research processes that are relatively loose and unstructured with the advantage of a significant degree of flexibility and sensitivity to unanticipated issues that emerge when the research is in progress (e.g., Miles and Huberman 1994; Lee 1999; Mason 2002; Gephart 2004; Maxwell 2005; Bryman and Bell 2007; Miles *et al.* 2013). For a detailed exposition of such designs refer to Chapter 1 of Maxwell (2005) and the book, *Qualitative Researching*, by Mason (2002). Maxwell strongly advocates a loose design on the basis of linear and sequential designs running counter to the principle of ongoing reflexivity that underpins qualitative (interpretivistic) research. However, the components around which Maxwell builds his approach are very similar to tightly coordinated and structured designs.

unit of analysis and embedded sub-units and in fine-tuning the case focus and the boundaries of the study⁷⁰.

More importantly, pre-structured designs are prone to the possibility of “bending data out of contextual shape” when answering analytical questions (Miles *et al.* 2013, p. 20). A number of precautions were adopted to ensure the validity and reliability of the research and eliminate the risk of bending the data to fit the theoretical elements that interlace the pre-structured design when performing case analysis. These include: iterating between theory and data (Section 2.3.2), screening several alternative secondary reports according to certain criteria (Section 2.3.3), and piloting an initial case focus and boundaries on the evidence prior to conducting a final analysis (Vella and Foxall 2011).

B. Longitudinal Design

The study of such causal processes, dynamics, and their outcomes dictates a longitudinal design (Aldrich and Pfeffer 1976; Pettigrew 1990; Lee 1999; Morlacchi and Nelson 2011; Bairstow and Young 2012; Lavie and Singh 2012; Yin 2014) irrespective of whether research aims to generate or test theory⁷¹. A longitudinal design focuses on analysing and tracking historical, non-linear processes of change embedded within particular contexts (Pettigrew 1990; Langley *et al.* 2007). Evolutionary research shares an emphasis on dynamics (i.e., non-linear processes) and, thus, on the importance of historical reconstruction (Coriat and Dosi 1998; Dosi and Marengo 2007; Dosi 2013). Given these considerations and the aims of the project, the research is organised as a longitudinal *single case study* (Yin 2014).

C. Single versus Multiple Cases

The consensus among methodologists favours the use of multiple cases, where possible, to generate more robust conclusions through structured comparisons and deeper theoretical contributions through the extent of

⁷⁰ According to Maxwell (2005), a linear and sequential model that eliminates flexibility with respect to unanticipated issues. Similarly Miles *et al.* (2013) claim that pre-structured designs significantly reduce sensitivity to case specifics.

⁷¹ A longitudinal design is defined as any design that requires collecting and analyzing data from a population at different time intervals to facilitate temporal comparisons (Babbie 1990; Bryman and Bell 2007; Gerring 2012).

replication across different cases (e.g., Eisenhardt 1989; George and Bennett 2005; Miles *et al.* 2013; Yin 2014; cf. Dyer Jr and Wilkins 1991). Ideally, causal processes are examined and established across multiple cases to generate a deeper and more powerful description and interpretation (Miles *et al.* 2013).

Adopting a multiple case study approach to accomplishing the present research objectives would have generated a significant degree of complexity due to the sheer volume of historical qualitative data that would have needed consideration, analysis, interpretation, and reporting. Timely completion of the projected would have been threatened. Despite the important analytical advantages of multiple case studies, the single case study design was chosen⁷².

A signal limitation of single case studies is that the processes observed therein may be unique to the case and, therefore, any support to theoretical claims may be idiosyncratic (Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013; Yin 2014). Cross-case comparisons are not possible and therefore generalizability outside the cases studied is very limited. Indeed, only analytic generalisation may be invoked (Lee 1999; Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013). Obviously, theoretical replication of the results across multiple cases is not possible and this may weaken the status of analytical conclusions (Miles *et al.* 2013; Yin 2014). Single case studies run a greater risk of being judged indeterminate when faced by possible rival explanations and of leading to incorrect conclusions due to errors in measurement (George and Bennett 2005). This said, however, single case studies may be considered as pilots assessing the feasibility of conducting future multiple case study research with identical research objectives for the purpose of replication, comparison, (George and Bennett 2005; Yin 2014) and falsification.

Despite these limitations several researchers have successfully utilised single case studies (Dyer Jr and Wilkins 1991; George and Bennett 2005; Yin 2014). In addition, causal relations may still be demonstrated through the use

⁷² Appendix A2.3 describes the three options of multiple case study designs considered during the initial stages of the research.

of single rather than multiple cases via analytical techniques that rely on theory and research propositions developed a priori (George and Bennett 2005).

D. Steady State Baseline and Replication Logic

To capture some of the advantages of multiple case study design, the case is set up as if it were a *steady state experiment* to allow *within-study literal replication*. The objective of this design is to allow the procedure of operant conditioning to be demonstrated qualitatively with a reduced reliance on inference.

The design is based on one of the two main EAB approaches to studying how experimental conditions effect response rates. Initially, several measurements of behaviour are collected under the baseline condition with the expectation being that ultimately a relatively stable pattern of responding emerges. This baseline reflects the typical influence of the baseline condition on the rate of responding. The baseline is the “steady or stable state of responding ... defined as ... a pattern of responding that shows little relative variation in its measured dimensional quantities over some period of time” (Johnston and Pennypacker 2009, p. 196). The main properties of the steady state is that it is a relative measure of stability (or variation): the stability is attributable only to dimension of behaviour that is being measured (in this case the rate of response), and, any extraneous environmental variables have been either accounted for or found to be weak. Similar measures are collected under the treatment condition. The procedure involves measuring and comparing the behaviour of a single subject under control or baseline and treatment conditions repeatedly (Johnston and Pennypacker 2009). This steady state approach, therefore, (a) allows the accumulation of data on the interaction of behaviour with the baseline condition; and, (b) it provides the foundation to make comparisons between the baseline and treatment conditions (Johnston and Pennypacker 2009)⁷³. In other words, it allows measuring changes in the rates of responding as the environment changes.

⁷³ Reference is made to Johnston and Pennypacker (2009) for more details on the approach.

The Commission report is set up in a manner that emulates this steady state approach⁷⁴. Following this procedure, the research sets the two generation-situations (Figure 5, the situation is the unit of analysis⁷⁵) as if they were distinct and successive experiments and examines the degree of similarity and dissimilarity across cases. Literal replication of results from one case to the next should result in similarities according to the predictions of the operant theory and, therefore, analytic or theoretical generalisation rather than statistical generalisation may be accomplished (Yin 2014).

The proposed design postulates the first generation-situation faced by Wall's during the period 1922 to 1969 as the baseline and the second generation-situation (1970 to ca.1978) as being analogous to the treatment condition. The analysis traces how and the extent to which this baseline remains stable and varies over the treatment condition (noting variation, novelty, and retained and discontinued practices). The baselines extracted are (a) a reconstruction of the learning history of Wall's until 1969 and (b) the character of extant environmental conditions until the same period. Both are treated as relatively stable states that emerged as a result of earlier processes of selection⁷⁶. Stability (hence, replicability) and change in both baselines are traced through the analysis of the subsequent generation. The extent of replicability will demonstrate the extent to which practices continue, recur, persist, or are discontinued over the years. Once practices emerge repeatedly in the course of the history of Wall's through its environmental interaction, it may

⁷⁴ The reason that the design emulates rather than replicates the logic is due to differences that exist between experimental laboratory settings and real world complex contexts of behaviour. The EAB exercises significant control over independent variables and over any other elements within the laboratory setting that may confound results and thus invalidate the experiment (e.g. Catania 1999; Cooper *et al.* 2007; Pierce and Cheney 2008; Johnston and Pennypacker 2009). In addition, this control and quantitative measurement provide EAB researchers with a clear route to identify and objectively observe antecedent stimuli, behaviour and consequences and the effects of any inter-relationships among them (Foxall 2010b). Within non-experimental designs it is significantly more difficult to: (a) identify and account for all the elements of the three-term contingency including and especially the learning history of the individual; and, (b) unequivocally establish inter-relationships among the elements (Foxall 1990, 1994, 1998b, 2010b). The number, salience, and the complexities of the contingencies in operation in a given context also impose limits on interpretations (Lee 1988) to the extent that some important contingencies may be invisible to researchers. Lee (1988) highlights an additional complication: interpretations are a function of the evidence available at hand. A lack of information may hamper the identification of the consequences of behaviour and in constructing the contingencies governing the behaviour of research subjects. (See also Appendix 2, Section A2.6.3B).

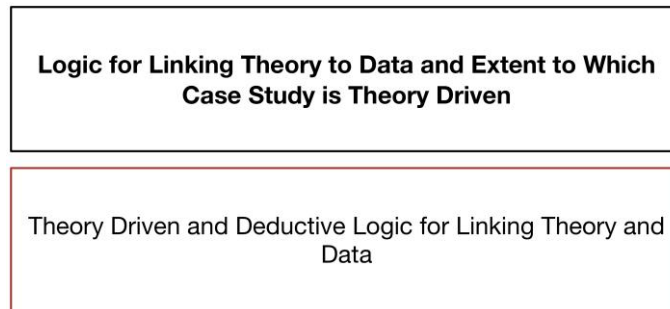
⁷⁵ Section 2.3.4 discusses the unit of analysis.

⁷⁶ The notion that the baseline represents a steady state should not be mistaken as implying an equilibrium state.

be possible to infer a process analogous to operant conditioning and to selective retention and elimination.

2.3.2 The Role of Theory and Logic Linking Theory and Data

Figure 8 – How to Link Theory and Data



The research is theory driven and although it adopts an overarching deductive logic, an iterative strategy was adopted moving between theory and data during the preliminary stages of the research (Vella and Foxall 2011).

Theory Driven Research and Deductive Logic⁷⁷

Although radical behaviourism prescribes an inductive strategy (Foxall 1995c, 1998b, 2010b; Catania 2012; Leslie 2012; Vyse 2013), the position taken within this research favours the stance that the choice between following either deductive or inductive logic depends more upon the purposes of the research rather than on any strict adherence to a particular paradigm (Hammersley 1992; Foxall 1998b; Stebbins 2001). Research that is confirmatory and that evaluates the usefulness of theoretical claims follows a deductive approach (e.g., Yin 2014) because an assessment of existing theory is being made. In addition, the evaluation of Skinner's claims against empirical evidence depends upon an additional theoretical endeavour: that of developing and applying an appropriate sensitizing framework. Such an exercise is sufficient to warrant a design that rests on existing theory (Dnes 1992).

Theory keeps the research directed and focused, organised and bound around the research problem and objectives (Eisenhardt 1989; Miles and Huberman 1994; Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall

⁷⁷ Appendix A2.4 provides further detail on the rationale behind the strategy.

2013; Yin 2014). The nature of operant interpretations appears to favour a deductive and, therefore, theory-led approach as a methodological requirement in conducting evaluations (Foxall 1998b) of this kind: to generate an operant understanding of behaviour in real world contexts, interpretations must be conducted systematically and rigorously and derived in a manner that is consistent with operant principles and research (Foxall 1996b, 2010b; Foxall and Sigurdsson 2013). Following replication logic underscores both the need to have greater structure within the research design and for the work to entail theoretical input *prior* to carrying out the empirical component (Yin 2014). In conclusion, theory also provides the criteria and logic for selecting the most appropriate data, for screening among alternative sources, for determining the data collection instruments, for identifying units and sub-units of analysis and for linking the findings back to the issues of theoretical interest (Yin 2014). It is therefore in this sense that theory acts as a “blueprint” for the entire research design (Vella and Foxall 2011, 2013; Yin 2014).

Iterative Strategy

In developing sensitizing frameworks Miles *et al.* (2013) prescribe being highly selective in identifying the most important concepts and relationships in relation to the research problem. Difficulty arose in selecting the theoretical constructs most relevant and appropriate to accomplishing the research objectives. Theoretical richness and complexity thus created a significant danger of diffuseness, overload (Miles *et al.* 2013) and a loss of focus that could have jeopardised the completion of the research in a manageable and timely fashion. Paying “close attention to the empirical phenomena one is theorizing about, and the actual processes that seem to be at work, and develop one’s theory around one’s understanding of these” (Nelson 2007, p. 352; cf. Hodgson and Knudsen 2007) appears to mitigate against these threats by providing a point of departure and highlighting the most relevant dimensions. Thus, following Vella and Foxall (2011, 2013), an iterative strategy was employed. This involved reading and conducting preliminary analysis of the data very early in the research process and moving between theory and data in these preliminary stages to determine the most useful constructs and to sharpen operational definitions (Vella and Foxall 2011, 2013). Inferences would then be drawn deductively from within an improved sensitizing framework to

allow the evaluation to move forward. Silverman (2010) makes a similar prescription to maintain focus on the research problem⁷⁸.

Limitations

The approach is susceptible to the threats of bias, theory-ladenness, and ‘fitting the data to the preconceived theory’. Although both inductive and deductive logic is applied within the same research, this dual use precludes drawing inferences as hypotheses and testing them using the same evidence (Stebbins 2001). Only *research propositions* are drawn through the SMC and these propositions are *qualitatively assessed* rather than tested statistically (Vella and Foxall 2011, 2013)⁷⁹. Support for the propositions or otherwise is equated to support for the operant characterisation of the evidence. Further, the report was generated and compiled by an unrelated third party and for purposes different to those that govern this research. This ensures a significant degree of objectivity – the case study is populated by evidence that has not been biased in any way by the researcher’s own theoretical perspectives, expectations, assumptions, and otherwise⁸⁰. Finally, the process is explicit and acknowledges the existence of alternative interpretations and rival explanations. The research does attempt to accomplish its goals as objectively possible (Vella and Foxall 2011, 2013) given that ultimately all observation and interpretation depend on theory and implicit or explicit a priori assumptions/values (Foxall 1990; Guba and Lincoln 1994; Miles and Huberman 1994; Stake 1995; Foxall 1996b).

⁷⁸ This iterative strategy is not intended as a means to confirm or substantiate the inferences drawn from the sensitizing framework. Rather it is a path to establish the most fruitful application of the framework in research (Foxall 1999a) to achieve its objectives.

⁷⁹ Vella and Foxall (2011, 2013) also point out that even if the testing of hypotheses were possible through qualitative research, several cases would be needed to accomplish such testing in a valid and reliable way. Being a single case study, the research would be unable to test hypotheses. See also Appendix A2.2.

⁸⁰ Thus, the data enjoys the characteristics of a “*double blind test*”, which Hakim (2000) defines as research where “neither the respondents or other participants or the researcher ... [are] aware of the hypotheses being tested. The results carry more weight because one has eliminated the possibility of the researcher introducing bias in favour of or against the hypotheses in question, purely as a result of select perception or selective interest” (p.180).

2.3.3 Identifying and Selecting the Data

Figure 9 – Selecting Sources of Evidence

Selecting the **Data Sources and Evidence** most relevant to the research objectives • Identifying the Limitations of the Data Sources in Relation to their Capacity of Answering Research Questions

Secondary Qualitative Evidence prepared by the Monopolies and Mergers Commission resulting from a Full Market Investigation • Single versus Multiple Sources of Data • Triangulation • Limitations of the Commission's Report

A. The Ice Cream Report, 1979

The use of secondary archival documents in the form of full market regulatory investigations was considered to be the most appropriate source of evidence given the research objectives. The investigation is called *Ice-cream and Water Ices: A Report on the Supply in the United Kingdom of Ice-cream and Water Ices* and was published in 1979 by the Monopolies and Mergers Commission. The report is in the public domain and narrates the findings of a full market inquiry conducted by the Commission into the market practices of the subsidiaries and associated companies of Unilever (including T Wall and Sons (Ice Cream Ltd), Wall's) and those of J. Lyons & Company (JLC, including Glacier Foods Ltd and Lyons Maid Ltd) as national ice cream manufacturers, and of companies classed as secondary manufacturers. This is the first in a series of four investigations into the ice cream market by the Commission. Vella and Foxall (2011) utilised the evidence from the final investigation, Competition Commission (2000), as the basis for their research⁸¹.

Case studies are especially susceptible to two important threats: (a) finding out in later stages of the research that the selected cases were inappropriate or irrelevant to addressing the research objectives and, therefore, not viable (Vella and Foxall 2011; Yin 2014); and, (b) the cases did not contain the main variables of theoretical interest (Bryman and Bell 2007; Vella and Foxall 2011). There was sufficient familiarity with the case material to establish

⁸¹ It should also be noted that since the research did not make use of primary data involving human participation (e.g., focus groups, surveys, workplace observation and so on), Cardiff University does not require the need to gain ethical approval. Besides, the data is within the public domain and relates to events that occurred several decades ago. In addition, the Commission omitted any information that might have been confidential or commercially sensitive at the time.

early in the process whether the dataset had potential to accomplish the research goals (Eisenhardt 1989). Despite this familiarity, however, a number of similar reports were also screened according to a set of selection criteria to judge whether other more appropriate material was available (Vella and Foxall 2011; Yin 2014)⁸².

The ice cream report is the most appropriate to the research objectives for several reasons: (1) Familiarity with the Competition Commission (2000) investigation was believed to facilitate a quicker and deeper understanding of the dynamics in the ice cream industry and to enhance theory development by continuing along one path where earlier research left off. (2) The investigation is bound by a consistent theme and provides an extremely rich and detailed historical narrative of real world business activity (Vella and Foxall 2011) including the marketing practices of key rival manufacturing firms within their channels combined with detailed descriptions of patterns of wholesale and retail behaviours, and consumer choice. Thus, the report tracks continuity of behaviour and the dynamics of change within the ice-cream industry in a relatively comprehensive way. (3) The evidence in the report was compiled and analysed by several experts rather than a single researcher. (4) The report was generated and compiled by an unrelated third party and for purposes different to those that govern this research. Therefore, the case study is populated by evidence that has not been biased in any way by the researcher's own theoretical perspectives, expectations, assumptions, and otherwise. (5) The evidence contains highly specialised information that is generally not within the public domain or accessible to a single researcher (Vella and Foxall 2011). (6) The evidence appeared to hold features that are similar to the theories and perspectives under consideration (Rose 1991; Vella and Foxall 2011).

B. Single versus Multiple Sources of Evidence

The general prescription for conducting qualitative research is to use multiple sources of evidence and methods, i.e., triangulation (Eisenhardt 1989;

⁸² Appendix A2.3 provides an overview of the various possible sources of evidence screened as candidates for populating the research. Section A2.3.1 details the selection criteria used. These criteria were based on theoretical considerations.

Pettigrew 1990; Miles and Huberman 1994; Patton 2002; Bryman and Bell 2007; Creswell 2009; Yin 2009; Miles *et al.* 2013; Yin 2014; cf. Mason 2002)⁸³.

The most significant benefits that are derived from multiple sources of evidence lie in (a) drawing upon the particular and varied strengths of the different instruments of data collection (e.g. Pettigrew 1990), (b) developing “converging lines of inquiry” (Yin 2014, p. 122) or “cross-checks” (Pettigrew 1990, p. 277), (c) corroborating and enhancing the data collected (e.g. Pettigrew 1990; Yin 2014), and, (d) construct validity (Yin 2014)⁸⁴. Essentially, a corroborative strategy strengthens confidence in one’s findings and enhances the accuracy of conclusions (Yin 2014). Conflicting or inconsistent evidence, on the other hand, aid in identifying issues regarding the integrity of the data sources, data collection instruments and the evidence itself (Miles *et al.* 2013).

This research relies entirely on the extent of triangulation used by the Commission (Vella and Foxall 2011). The investigation demonstrates a strong emphasis on triangulating from a variety of sources⁸⁵.

C. Limitations of the Evidence

There are several limitations arising from the use of secondary archival qualitative data and of a single source of evidence threatening the validity and reliability of the research.

The Commission’s investigation was produced for different research objectives and audiences (Stewart and Kamins 1993; Yin 2009; Vella and

⁸³ For example, a single study may use a mix of interviews, archival evidence, documents, and direct observations. Even when using a single source of data, say interviews, some researchers collect their data from multiple informants from any single site.

⁸⁴ Mason (2002), on the other hand, is reluctant to place great importance on triangulation of method to establish validity: she correctly points out that triangulation of methods and sources imply a single and objective social reality that may be known through using different methods and sources of data (Yin (2014) seems aware of this assumption). And, therefore, cautions researchers to pay very close attention to the consistency between method and ontological/epistemological assumptions. Mason (2002) suggests that explaining how researchers arrive at the conclusion of validity is more recommendable than using a wider variety of methods and sources of data. At best, methods triangulation captures the multi-dimensional aspects of the social world.

⁸⁵ Section A5.8.2 in Appendix 5 details the sources of evidence used by the Commission to conclude its inquiry. Section A5.6.4 in Appendix 5 details the problems faced by the Commission in generating certain quantitative data for estimating market size and share and the describes how it used a variety of sources to produce the estimates required at law.

Foxall 2011; Yin 2014) and from the value lens of a regulator (Vella and Foxall 2011, 2013). The evidence presented in the report is comprised of information collected from several third parties on a set of observable events. The evidence may not narrate the unfolding of events literally and objectively (Mason 2002; Yin 2009; Vella and Foxall 2011; Yin 2014) and may be deliberately edited (Yin 2009, 2014). The report was constructed through the input of several officials and the authors may have not necessarily been the same persons who conducted the actual investigations. Therefore, authors may have inadvertently or deliberately introduced their own biases, errors, subjective assessments, and interpretations of the original investigators. In addition, they may have missed some of the insights investigators may have developed during fieldwork. The latter may have also introduced similar biases, errors, and subjectivity in data instrument design and data gathering (Vella and Foxall 2011)⁸⁶. In addition, the report may contain biased, erroneous, and subjective opinions of the industry players themselves. Data unimportant to the investigation but critical to the present research may have been omitted. The Commission is the sole 'narrator' of events and, although there is significant evidence to demonstrate a fair degree of impartiality, the threat of being inadvertently influenced by the insights generated and conclusions drawn by the authors and the investigators remains possible.

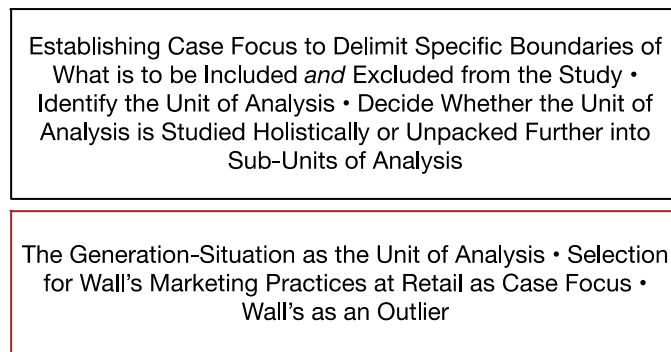
Despite the initial screening of alternative reports and the iterative strategy, there remains a distinct possibility of an incomplete picture emerging (Vella and Foxall 2011). Certain theoretical propositions may not be examined because there is a lack of sufficient data. Also, relying on a single source of evidence might lead to wrong conclusions. However, given the overall quality and integrity of the data (including the extensive level of triangulation used by the Commission), the extensive historical coverage of events within the report, and the empirical quandary originally motivating the research, the option of populating the research with primary evidence was rejected (Vella and Foxall

⁸⁶ For example, (Miles and Huberman 1994, p. 35) point out that in conducting open ended or semi-structured interviews, the interviewer may summarize the verbal reports of third party already at source or in the process of transcription. In this sense all interviews are open to this element of subjectivity; however, single source research is highly susceptible to the errors that arise from the particular source of data (Patton 2002, p. 556).

2011)⁸⁷. A strategy that involves actively and continually searching for evidence that may counter such insights and conclusions is followed during the analysis and interpretation (Miles *et al.* 2013; Yin 2014). Further, an awareness of all biases and retaining a critical perspective on the data reduces the threat of being misled by the evidence (Yin 2009; Vella and Foxall 2011; Miles *et al.* 2013; Yin 2014).

2.3.4 The Units of Analysis, Case Focus, and Boundaries

Figure 10 – Considerations in Bounding the Research and Creating Focus



The delineation of the units of analysis and case focus and boundaries emerges from the theoretical considerations discussed in Chapters 3 and 4.

The case focuses on the economic analogue of the process of natural selection operating on the lineages of marketing practices emitted by Wall's within the ice cream market at retail and in direct competition with other manufacturers during the history of the ice-cream market as evidenced in the Commission report of 1979. Competition is defined according to whether organisations are experiencing similar selective pressures (Metcalf 2005) when pitching ice creams at the retail level of analysis. Thus, national *and* regional manufacturers may be considered direct competitors depending on whether these are operating on the same market segment.

⁸⁷ As Vella and Foxall (2011) argue, a number of factors suggest very high level of integrity, accuracy, and quality of the data, namely, (a) the level of triangulation within the report, (b) the relatively apparent degree of impartiality of the Commission, and (c) the fact that these documents are used to establish and recommend competition policy. The degree of triangulation in the report (see Appendix 5, Sections A5.6.4 and A5.8.2), for example, is a strong indicator of the awareness on the part of the Commission with respect to threats of negligence, bias, and error. It also reflects considerable attention to issues of validity and reliability (Vella and Foxall 2011).

The *unit of analysis* is defined as ‘the marketer situation at retail from the perspective of Wall’s between 1922 and ca.1978 as specified in the report. The situation is delineated by the intersection of the learning history of Wall’s (the ‘genotype’) and the environmental selection factors posited by the more influential stakeholders at retail, namely, consumers, retailers, and rivals (socio-economic contingencies), in conjunction with any important dimensions within the physical environment (physical contingencies). The lineages of marketing practices emitted by Wall’s and emerging from its interaction within the situation are characterised as the socio-economic manifestation of the ‘phenotype’⁸⁸.

As described in Section 2.2, the report is cast as two distinctive generation-situations at retail (Figure 5) wherein identical categories of *embedded sub-units of analysis* may be identified. The embedded units relate to the mutually contingent reciprocal interactions between Wall’s and the more influential stakeholder at retail. The interpretive device used to analyse the reciprocal behaviour within these socio-economic relationships is termed the *bilateral contingency of reinforcement* (Foxall 1999b; Vella and Foxall 2011, 2013) between Wall’s, on the one hand, and stakeholders, as the selective environment, on the other. Since the various stakeholders represent selective agents and since Wall’s is characterised as the locus of selection, the principal bilateral contingencies are denoted: Consumer↔Wall’s, Retailer↔Wall’s, and Rivals↔Wall’s⁸⁹. The identification and characterisation of embedded units is critical because it serves to generate a deeper understanding of the process of selection within and across each relationship category, i.e., how these relationship categories, as environmental agents, operate independently and jointly on the selection for practices. All socio-economic relations are presumed subject to physical contingencies (e.g., seasonality and the weather).

The central aim of the case study is to demonstrate that over the two situations at retail, the marketing practices of Wall’s are shaped, maintained

⁸⁸ The concept of a marketer situation follows the distinction made within the BPM to delineate a specific empirical episode of the interaction of the individual and elements within its environment. Chapter 4, Section 4.2 describes how the “consumer situation” provides a fine grained approach to understanding consumer behaviour in situ, whereas Section 4.3 suggests the “marketer situation” as a similar analytical tool for characterising marketer behaviour in real world contexts.

⁸⁹ The symbol “↔” is a convenient shorthand introduced by Vella and Foxall (2011) to denote the idea of ‘mutually-reinforcing behavioural interactions within the bilateral contingency’.

(*selected for*, retained, and *replicated*) and discontinued (*selected against*) by social and physical contingencies of reinforcement and punishment. In addition, the case also needs to demonstrate that exclusivity of supply as a characteristic feature of the marketing practices of Wall's was selectively retained for certain advantage conferring properties (the selecting consequences). The evaluation of Skinner's analogy proceeds along this basis.

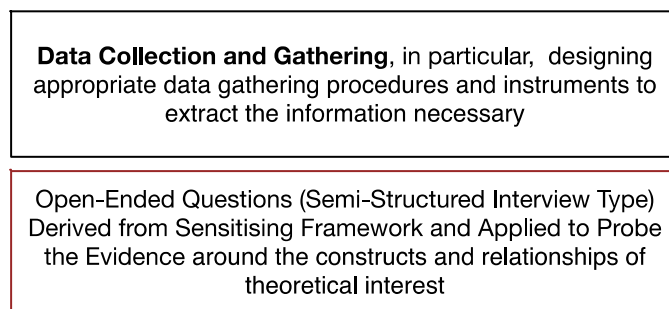
The *case focus* is defined as follows: 'The case is a longitudinal study of the practices emitted by Wall's in its efforts to develop the market for the **mass consumption of ice cream** within the UK between 1922 and ca.1978. Conducted from **the perspective of the continual interaction between Wall's and its selective environment**, the case focuses on the practices of this **large-scale manufacturer** vis-à-vis the **development and maintenance of nationwide retail network**. The points of central interest are: (a) the emergence and the prolific use of **exclusivity** contracts to secure, maintain, and expand the retail network, and, (b) the **practices supporting a nationwide network for mass consumption of ice cream**. Behaviour-environment interactions are considered within and across two distinct generation-situations. The research interprets the evidence from an operant perspective to understand whether and how **the various elements comprising the marketer behaviour setting faced by Wall's independently and jointly function to selectively retain and eliminate various practices** (with special emphasis on exclusivity) via **processes analogous to those described by operant conditioning** procedures (reinforcement and punishment). The study is based on a report published by the Monopolies and Mergers Commission in 1979.'

The process of selecting the appropriate case relies on the theoretical concerns of the study and on earlier research (George and Bennett 2005; Yin 2014): together, the research problem, objectives and sensitizing framework provide the essential guide to delineate the class of events of which the case/s should be an instance (Pettigrew 1990; George and Bennett 2005; Miles *et al.* 2013; Yin 2014). Wall's was selected as the focal concern via *extreme*

*sampling*⁹⁰. This technique identifies polar (or outlier) values of each candidate on the dependent or independent variables of theoretical interest. The selected cases often demonstrate some form of an “unusual” type of deviation on these variables in respect to other members of the population (Gerring 2007). Vella and Foxall (2011, 2013) note how the findings on Wall’s appear to contradict one of the implications within the Marketing Firm that firms are generally limited in the degree of control they exercise on the marketer behaviour setting. The authors find that Wall’s dominated both the distribution and retail markets and held a monopolistic chokehold over both with a 70% retail market share. In contrast, no other national, regional, or local manufacturer independently held such market power. The 1979 report also claims that Wall’s already held a 40% market share. In parallel, however, an early screening of the four investigations suggested that processes analogous to operant conditioning seemed to be in operation. Does this dominance significantly dilute the behaviourist claim of environmental primacy in determining the behaviour of the firm? Or is this dominance a result of operant selection?

2.3.5 Data Gathering Instruments

Figure 11 – Considering Appropriate Case Study Questions around the Research Objectives



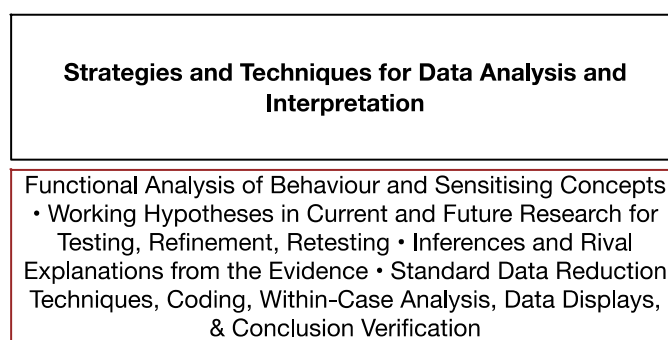
Data collection is conducted through a set of open-ended questions derived from the sensitizing framework and applied to probe all the evidence (Dnes 1992; George and Bennett 2005; Yin 2009, 2014) around the constructs

⁹⁰ In qualitative research purposeful rather than random sampling is the prescribed basis for selecting cases for study because the sample is either usually too small (Patton 2002; Gerring 2007; Miles *et al.* 2013; Yin 2014) or because, in the case of research that relies on secondary qualitative evidence, the extent of available evidence further curtails the eligibility of candidates. For the full array of sampling strategies refer to Chapter 5 in both Patton (2002) and Gerring (2007). Naturally, this form of purposive sampling precludes statistical generalisation (e.g., Patton 2002; Gerring 2007; Miles *et al.* 2013; Yin 2014). Contrary to statistical sampling, case units are not necessarily representative of the broader population (Gerring 2007; Yin 2014). In addition, “unit homogeneity across the sample and the population is not assured” (Gerring 2007, p. 20). Therefore, too much bias may exist.

and relationships of theoretical interest. Performing a similar function to key informant in-depth semi-structured interviews (Yin 2014), the technique guarantees: (a) a focused, consistent and structured comparison of the evidence (Dnes 1992; George and Bennett 2005; Miles *et al.* 2013); (b) the generation of valid and reliable observations (Miles *et al.* 2013); and, (c) in future research, for the possibility of replication in a systematic and rigorous manner and continuity (George and Bennett 2005). In addition, the technique is an important step in organising and reducing data (Dnes 1992)⁹¹.

2.3.6 Strategies for Interpreting and Analysing Data

Figure 12 – Considerations on Data Analysis and Interpretation



In the EAB, research is conducted through a systematic observation of the properties of the individual’s environment (*stimulus events in the world*) and the properties of her behaviour (*responses*) over time (Catania 1998). The method rests on conducting a functional analysis of behaviour: analysing behaviour-environmental relations by classifying behaviour and environments according to their response and stimulus functions respectively (Pierce and Cheney 2008). A functional analysis typically disregards the actual content or physical characteristics of observed behaviour. This research, however, utilises *both* functional and topographical analyses thereby attending to both the richness of the evidence within the reports and the theoretical developments within the literature domains that inform this research (Vella and Foxall 2013)⁹².

⁹¹ These questions were formulated loosely following the principles of semi-structured in-depth interviews: for example, the questions are structured to allow (a) probing evidence that contain unanticipated findings (Dnes 1992; Miles *et al.* 2013), (b) avoiding bias (through relatively open-ended questions) (Dnes 1992), and (c) looking for possible rival explanations by testing emerging patterns against other data (Patton 2002; Miles *et al.* 2013).

⁹² See Chapter 1 (Section 1.2.1) with respect to how the latter strategy mitigates the threat of vacuity. See Appendix 2.7 (Section A2.6.1) for a description of the procedure used to conduct the functional analysis.

The form of interpretation put forward here utilises the BPM as the signal interpretive device to analyse real world behaviour in lieu of the three-term contingency.

The analytic strategy is, therefore, largely theory driven and relies on the sensitizing framework and the research propositions derived therefrom to develop a valid and reliable interpretation (Vella and Foxall 2011, 2013; Yin 2014).

A: Developing Operant Interpretations: Analogies and Sensitizing Concepts

A fundamental methodological issue tackled in this research relates to how the various terms, operations, and processes particular to the EAB are to be interpreted and demonstrated through qualitative data.

Technical definitions, concepts, operations, and processes developed in the EAB form the language (or technology) used by behaviourists to describe the principles of operant behaviour uncovered under laboratory conditions. The language is appropriate to predicting and controlling the behaviour of interest and, as stated, the three-term contingency is the fundamental unit of analysis (Moore 2008). Since the elements of the three-term contingency (and the established experimental operations and processes) have precise formal definitions they may be considered akin to what Blumer (1954) defines as “definitive concepts” (pp. 1-7)

With respect to behaviour in natural settings, however, only *analogies* may drawn – direct extrapolation is not possible (Foxall 1990, p. 129; 1994, 1998b, 2010b). Assuming an unproblematic correspondence between experimental and real world settings and direct continuity of principle as one moves from the controlled confines of the former to the complexity and

ambiguity of the latter is untenable (e.g., Foxall 1995c; Foxall 2010b)⁹³. An example of the treatment of EAB terms as analogies is the *schedule of reinforcement* which refers to precise arrangements of contingencies used in laboratory experiments: A number of these schedules may be in operation individually and in combination to exert multiple effects that cannot be unravelled with the required degree of precision (Foxall 1990, 1994, 1998b; Foxall and Schrezenmaier 2003; Foxall 2007a, 2010b). In such complex situations these effects may only be inferred from behavioural responses and their consequences (Foxall 1995c, 2010b). Analogies are drawn in these cases and reference is carefully made to *patterns* of reinforcement in real-world settings in contrast to *schedules* in laboratory environs (Foxall 1998b)⁹⁴.

An operant interpretation of behaviour may be likened to a process of translating from one distinct system of meanings to another system where the BPM functions as an interpretive device or ‘translation’ mechanism (Foxall

⁹³ In addition to the problems demarcating the nature of real world environments already described in Chapter 1 (Section 1.2), both Lee and Foxall highlight additional complications: (a) The number, salience, and the complexities of the contingencies in operation in a given context also impose limits on interpretations (Lee 1988) to the extent that some important contingencies may be invisible to researchers. (b) Interpretations are a function of the evidence available at hand and are also susceptible to the challenges related to the problem of *equifinality*. With respect to the evidence available for interpretation, a lack of information may hamper the identification of the consequences of behaviour and in constructing the contingencies governing the behaviour of research subjects (Lee 1988). Foxall (e.g. 1995c, 2010b) remarks on the “elusiveness” of the individual histories of consumers that may be derived, in part, from verbal reports by consumers themselves but which are never complete. Incompleteness arises because some behaviour is shaped and maintained by contingencies that the individual has not stated and analysed (i.e., realised) publicly or privately (i.e., verbal behaviour) (Lee 1988). The Commission report comes a long way to provide an extensive description of the development of the industry since the 1920s and of the marketing behaviours of the main units of analysis. However, as discussed in Section 2.3.3, the narrative is incomplete and suffers from a number of related limitations. (The use of multiple sources of data may mitigate the problem of incompleteness and “elusiveness” but creates issues with respect to the different levels of credibility among alternative sources due to such factors as different authoring objectives, perspectives, and biases.) Equifinality presents an additional problem when conducting operant interpretations and cannot be neglected (Lee 1988; Foxall 1995c). Categorising behaviour requires establishing classes of functionally similar responses. Some response may take different forms, such as putting on a coat or lighting a fire. However, if these responses have identical function, for example, to keep warm, then they are grouped within a single operant (equifinal class) (Lee 1988; Foxall 1995c). Conversely, topographically similar emissions may belong to different operant classes since they produce different consequences within the environment (Lee 1988) – reading for entertainment in contrast to reading for study. Equifinality taxes operant interpretations heavily in that several plausible conclusions may be drawn from observations generated through non-experimental methods (Lee 1988) and “it reduces confidence that the interpretation is complete and unambiguous” (Foxall 1995c, p. 36). (See also Foxall (1990, pp. 98-124), Foxall (1995c, pp. 30-46), Staddon (2001), and Foxall (2010b, pp. 66-76)).

⁹⁴ Similarly, all terms developed within the EAB, e.g., *operant contingency*, *reinforcer*, and *punishment* are also appropriately applied in analogy.

2010b). The qualitative descriptions of the observations of firm behaviour made by the Commission that are formulated within an economic and legal framework is one system of meaning. Operant terms and principles are the second system of meanings. The BPM embodies an elaboration of the three-term contingency that accounts for real world complexity and, therefore, is the means through which the process of translation is carried out. Further, the model facilitates linking theory to empirical observation and vice versa.

Vella and Foxall (2013) also claim the use of *sensitizing concepts* when applying EAB concepts and procedures to develop operant interpretations of complex behaviours. It is not entirely clear which of the EAB terms/procedures were used by the authors as an analogy and which were posited as sensitizing concepts or whether all analogies were treated as sensitizing concepts. In this research, *all* analogies serve as sensitizing concepts. In addition, the elements of the BPM in application to the firm are also treated as sensitizing concepts⁹⁵.

As a strategy for treating and analysing qualitative data, “sensitizing concepts are non-definitive theoretical instruments or schemes that give “the user a general sense of reference and guidance” when approaching research” (Blumer 1954, p. 7; Vella and Foxall 2013, p. 383). Sensitizing concepts are particularly useful in theory building and in bridging the gap between theory and qualitative observations of the empirical world (including the capture of

⁹⁵ The BPM was originally conceptualized and later applied in extensive research to construct an operant understanding of consumer behaviour. The assumption so far has been that the model may be equally applicable to understanding the marketing behaviour of firms. Such an assumption is fairly reasonable in that the BPM is an elaboration of the three-term contingency for understanding economic behaviour within natural settings. In evaluating the application of the BPM with research, Vella and Foxall (2011) conclude in favour of its continued use. However, the application of the BPM in research on firm behaviour is only a recent phenomenon. Therefore, its use remains a working hypothesis.

subjective meaning) (Blumer 1954; Layder 1993; Van Den Hoonaard 1997; Bowen 2006)⁹⁶.

The methodological function of sensitizing concepts as explained by Blumer (1954) is three-fold: (a) they act as clear reference points providing direction in probing, analysing and interpreting empirical evidence of social phenomena; (b) although these concepts require formal definition, they are best demonstrated through empirical examples. In other words, sensitizing concepts connect theory to empirical findings and vice versa; and, (c) sensitizing concepts are themselves subjected to testing, to evaluation, and to refinement when useful in empirical research or otherwise abandoned⁹⁷. In other words, sensitizing concepts function as “working hypotheses” (Guba and Lincoln 1979, pp. 38-40). In addition, the theoretical conclusions drawn from within an operant interpretation should be regarded as working hypotheses prone to error and open to refinement and improvement (Lee 1988). This goes beyond Skinner’s approach to interpretations (i.e., that they are “merely useful, not true or false” (Skinner 1984g, p. 663)) because it renders theory testable and

⁹⁶ Although the research has a pronounced orientation around theory development, following a grounded theory approach is considered inappropriate. First, the main goal of this research is evaluative rather than exploratory. Grounded theory is designed primarily for the latter form of research. Second, grounded theory is only one among several methods for analysing data and building theory (Layder 1993, pp. 45-50; Langley 1999). The use of sensitizing concepts, appears more relevant to the evaluative scope of this research. Third, grounded theory is susceptible to diffuseness and overload because the approach advocates going out in the field with as little theory as possible (Dnes 1992; Miles and Huberman 1994) and several iterations of data collection towards theoretical saturation (e.g., Eisenhardt 1989). Fourth, the inductive analytical strategy that underlies grounded theory relies on the empirical data itself to generate patterns, themes and categories or “emergent concepts” rather than on a pre-determined scheme (Patton 2002; Bowen 2006). An interpretative analysis of behaviour, however, uses an established set of concepts and framework to conduct a functional analysis of behaviour even though the meaning of behaviour is uncovered from the data. This requirement emerges as a direct implication from the need to generate interpretations consistent with operant principles and research (e.g., Foxall 2010b). Unlike grounded theory, the conceptual scheme is largely determined before data collection and analysis.

⁹⁷ The process of evaluating concepts-in-use is similar to radical behaviourist construction of a behavioural technology (see Foxall (1995c); Baum (2005); Foxall (2010b)). Within radical behaviourism, the emphasis appears on whether or not the developed technology leads to the control of behaviour. Concepts and principles that express technology found to control behaviour are retained; others are refined or rejected. The use of sensitizing concepts in interpretation is similar but has a different aim: concepts are the means to connect empirical observation with theory and vice versa thus providing a better understanding of social phenomena in real world settings.

falsifiable. It should also be noted that sensitizing concepts might also emerge from the data through analysis (Patton 2002; Vella and Foxall 2013)⁹⁸.

2.3.7 Evaluation Criteria

Two sets of evaluation criteria are adopted: (1) *plausibility, usefulness, and objectivity* as predicated by radical behaviourist methodology, and, (2) validity and reliability as these apply to positivist case study research and within the narrow scope of the meaning the term “qualitative” takes within this research (Vella and Foxall 2011)⁹⁹.

A. Plausibility, Usefulness and Objectivity

Since *plausibility* lacks proper definition (Foxall 2010b), the criterion is understood within this research to refer to: (a) the extent to which the conclusions and interpretations drawn are credible and persuasive; and, (b) more importantly, the degree to which these interpretations (and the frameworks upon which these are built) are logically consistent with both operant principles and the domain within which these principles are applied (Vella and Foxall 2011).

With respect to the plausibility of theoretical frameworks, two additional considerations are made: (a) the extent to which the frameworks may be operationalized and may generate propositions or hypotheses for application, evaluation, and testing in empirical research; and, (b) the capacity of the frameworks to link theory and empirical observation comprehensively and intelligibly (i.e., a capacity to exhaustively capture the phenomenon frameworks have been designed to interpret and explain) (e.g. Foxall 2010b). Plausibility is

⁹⁸ The manner in which Vella and Foxall (2011) analyse the evidence suggests additional strategies for conducting interpretations. Other techniques adopted include **data reduction** (*coding, data displays*, main elements of the SMC framework), **within-case analysis** and the **drawing and verifying conclusions** (Miles *et al.* 2013). The analytical and interpretative process is essentially iterative (Vella and Foxall 2011; Miles *et al.* 2013). Appendix A2.6.2 describes and elaborates on the additional strategies used by Vella and Foxall (2011). Appendix A2.6.3 details the techniques involved in data reduction, within-case analysis, and conclusion drawing and verification following, on the most part, the prescriptions of Miles *et al.* (2013), a standard text in the analysis of qualitative data.

⁹⁹ See Appendix A1.2 for an explanation of what is meant by qualitative within this research. There are several criteria predicated by the various epistemological stances for judging the quality of research (Guba and Lincoln 1994; Mason 2002; Patton 2002; Bryman and Bell 2007; Gibbert *et al.* 2008; Miles *et al.* 2013). The discussion within this section focuses on criteria relevant to the assumed radical behaviourist position and with emphasis on falsification.

presumably enhanced when researchers express greater confidence with respect to these two dimensions. In addition, the use of the BPM improves plausibility because the model explicitly takes into account differences in behaviour within experimental laboratories in contrast to the real world and the idiosyncrasies of human learning (e.g. Foxall 2010b). Plausibility is enhanced by treating the components of the BPM as sensitizing concepts and the empirical and theoretical conclusions derived from research as working hypotheses. Components and conclusions are continually subjected to structured and focused empirical testing, to gradual refinements via additional real world observation and theoretical considerations, and, to peer review and evaluation.

Given the trade-off between plausibility, on the one hand, and external validity and reliability, on the other, the research emphasises the latter criteria (Staddon 2001).

Usefulness is understood in terms of the adequacy of the sensitizing framework in rendering a plausible, valid, and reliable operant interpretation of firm behaviour.

Since interpretation is theory-laden and subjective to varying degrees, the criterion of *objectivity* requires an attempt to be as impartial, neutral, and unbiased as possible (Vella and Foxall 2011)¹⁰⁰.

B: Validity and Reliability

The four criteria of quality governing positivist case study research are construct validity, internal validity, external validity, and reliability (Gibbert *et al.* 2008; Yin 2014)¹⁰¹.

¹⁰⁰ As a former marketing practitioner, special attention is awarded to the issue of value-ladenness and related biases (Bryman and Bell 2007) that may arise due to knowledge and experience in the conduct of business organisations. Certain practices that are considered as standard conduct in business may be regarded as unethical by social scientists (Vella 2010). Although the experience is invaluable in rendering the interpretation and discussion more plausible, exercising a degree of reflexivity is important. The research does not take a normative stance with respect to the ethical issues raised by any monopolistic behaviour identified and studied.

¹⁰¹ Although Vella and Foxall (2011, 2013) are concerned with validity and reliability, they do not specify what specific criteria they utilize to evaluate their study.

Several tactics are available to combat issues with respect to *construct validity*¹⁰²: To avoid *confirmation bias*, Flyvbjerg (2011) suggests explicitly recognising sources of researcher bias, assumptions and preconceptions and, following the analysis, discussing these together with concepts and hypotheses in the light of empirical evidence. The discussion should point to empirical evidence that appears to falsify assumptions, concepts, and hypotheses (Flyvbjerg 2011). The use of rival explanations, where possible, contributes towards reducing confirmation bias. In addition, the search for empirically grounded alternative rival explanations highlights the characteristic tendency of case studies towards falsification rather than verification (Flyvbjerg 2011; Yin 2014).

Using multiple sources of evidence and other forms of triangulation are techniques for combatting *verification bias* (Gibbert *et al.* 2008; Yin 2014) and for refining concepts (Eisenhardt 1989; Gibbert *et al.* 2008; Yin 2014). Using evidence produced by a third party avoids the verification biases of the author of this research. The adequate level of triangulation in the Commission's report mitigates the biases of the original investigators. Yin (2014) suggests stating the phenomenon of interest around a set of very specific concepts and using operational definitions and measures that already exist in the literature if applicable. This ensures adequate operationalization (Yin 2014). The overarching theory led case study design, the use of the BPM, the iterative strategy, and the specification of constructs and measures are therefore presumed to enhance construct validity. In addition Mason (2002) suggests that demonstrating validity also requires researchers to show that the chosen method, collection instruments and sources of data are adequate to capture and reflect the various theoretical concepts of interest. Other research quality improvement strategies include: (1) designing and implementing a robust and well-conceived theory-led data analysis strategy aimed at enhancing measurement validity and reliability (Potter and Levine-Donnerstein 1999); and, (2) explicitly stating the logic underlying all methodological choices and

¹⁰² *Construct validity* is here defined in relation to concerns with respect to whether concepts are sufficiently defined to allow operationalization and proper investigation (Eisenhardt 1989; Gibbert *et al.* 2008; Yin 2014) and whether the researcher introduces verification or confirmation bias during instrumentation and consequent data collection (Flyvbjerg 2011; Yin 2014).

demonstrating how the analysis and interpretation have been constructed (Mason 2002).

Attending to empirically based rival explanations as systematic search for causality is an analytic strategy aimed at jointly minimising the threats of *internal validity* (George and Bennett 2005; Yin 2014)¹⁰³. An explicit theoretical framework for conducting the research also enhances internal validity (Gibbert *et al.* 2008). Comparisons between empirical evidence and theory within the discussion improve the sharpness of constructs thereby improving internal validity (Eisenhardt 1989).

With respect to external validity, the research aimed only at achieving analytic generalisation, i.e., whether theoretical propositions and concepts *fit*, *partially fit* or *do not fit* with the empirical observations contained in the case (Lee 1999, p. 157)¹⁰⁴.

¹⁰³ *Internal Validity* deals with (a) concerns of drawing inferences when events are either not observed directly (Yin 2014) or not completely represented (e.g., through omission, different research objectives driving the compilation and collection of the secondary dataset and so on); and, (b) the extent to which claims of causal relations between independent and dependent variables may be warranted (Bryman and Bell 2007; Gibbert *et al.* 2008; Yin 2014). In qualitative (interpretivist) research, internal validity is paralleled by the credibility criterion, i.e., the extent to which interpretation is trustworthy and believable (Guba and Lincoln 1994; Lee 1999; Mason 2002; Bryman and Bell 2007; Miles *et al.* 2013). By definition, therefore, there is a degree of overlap with the plausibility criterion.

¹⁰⁴ *External Validity* deals with the issue of whether the conclusions of the research are generalizable beyond the confines of the immediate work (Bryman and Bell 2007; Yin 2014). Flyvbjerg (2011), for example, addresses the misrepresentation of generalizability as a threat to the integrity of the case study as a rigorous research method. Whereas the use of multiple cases does enhance the potential for generalizability of the findings (e.g., Eisenhardt 1989; George and Bennett 2005; Gerring 2007; Yin 2014), generalization from a single case is severely limited irrespective of its design and sampling methods (cf. Flyvbjerg 2011). This limitation, however, does not threaten the case study either as a rigorous research method in its own right or as a means of generating valuable insights and constructing theory.

In application to case research, Yin (2014) uses reliability to refer to the extent of repeatability or *replicability* of the research¹⁰⁵. In this sense, creating an audit trail tracing (and justifying) all the methodological steps and choices increases the potential of the research being repeated and later investigators arriving to the same conclusions (Bryman and Bell 2007; Gibbert *et al.* 2008; Vella and Foxall 2011, 2013; Yin 2014). The audit trail is created through the case study protocol¹⁰⁶, the case database (Yin 2014), and documenting the entire case design (Vella and Foxall 2011, 2013). This encourages complete transparency by facilitating comprehensive retrieval of the data and reproducibility of the study (Gibbert *et al.* 2008). Replicability also aims minimising bias and error within a study (Gibbert *et al.* 2008; Yin 2014) and steps have been taken to reduce these within reasonable limits.

Having established the design of the case study, the following chapter presents two theoretical building blocks – (1) a general understanding of the central principles of operant psychology, and, (2) a critical exploration of *Selection by Consequences*. The BPM, the Marketing Firm, and the SMC are explained in Chapter 4.

¹⁰⁵ In general, however, there are limitations with respect to replicability of qualitative research: for example, the impossibility of faithfully reproducing particular social situations (Bryman and Bell 2007, p. 410) or duplicating *all* the conclusions drawn. While the use of secondary data in the public domain gives rise to the opportunity for reproducing the study, this is not entirely possible because of a degree of subjective judgement introduced by different researchers (and their disparate experiences and skills). Mason (2002) interprets *reliability* in application to qualitative research to retain some of the meaning the term holds in quantitative research: That is, to refer to issues with respect to the consistency and accuracy of method and technique in application and reapplication. It is not possible to attend to reliability in the same manner as with quantitative research. However, Mason (2002) suggests that researchers must demonstrate that the data collection, generation and analytic methods used are the more appropriate means to addressing the research objectives and answering questions as accurately as possible. For example, evidence should not be neglected, misrepresented, invented, or treated unfairly. In addition, conclusions drawn must be warranted through carefully constructed explanations (Mason 2002; Miles *et al.* 2013). Therefore, the creation and maintenance of an audit trail, attention to possible rival explanations, the development of a case study protocol (Appendix A2.5), the adoption of standardised data collection instruments, and the application of coding rules/techniques are all aimed to enhance the accuracy and consistency of the study. In addition, reliability is improved by relying on the general methodology provided by Vella and Foxall (2011, 2013) and on the specified tactics for drawing and verifying conclusions.

¹⁰⁶ See Appendix A2.5.

Chapter Three

Selection by Consequences: Operant
Conditioning and Socio-Cultural Evolution

3.1 Introduction

Operationalizing Skinner's socio-cultural evolutionary analogy to assess its applicability in characterising the process of (economic) selection operating on marketing practices gives rise to two issues. The first is methodological: since real world firm behaviour is not amenable to an EAB, how do we design research to study it? The previous chapter tackled this issue. A method and design was developed through which to generate a valid and reliable interpretative analysis of behaviour using a case study populated with qualitative data and set to mimic a steady-state experiment.

The second issue is related to identifying a critical set of concepts to make operationalization possible. Taken on their own, operant principles are insufficient to address the theoretical and empirical complexities of the market behaviour of profit-making organizations. The principles emerging from experimental laboratories are not sensitive to or anticipate the idiosyncrasies and complexity of social *and* literal exchanges that characterise such economic behaviour. Therefore, additional principles from evolutionary economics and strategic marketing are introduced to construct a foundational and parsimonious sensitizing framework to allow empirical work to proceed. Jointly, therefore, psychology and economics bring to bear on the research problem. This second issue defines the scope of this chapter.

The chapter is structured as follows: Section 3.2 provides a set of operational definitions to delineate the fundamental principles used in operant psychology. This also facilitates a fuller appreciation of Skinner's evolutionary analogy.

Section 3.3 reconstructs Skinner's analogy as explained and implicit in Skinner (1953, 1961b, 1969, 1971, 1974, 1981, 1984b, 1984h, 1984i, 1984f, 1986, 1989a, 1989b). The core statements emerge and are summarised in *Selection by Consequences* (Skinner 1981) and in the replies to the direct criticisms of this paper (Skinner 1984h, i, f). Earlier publications demonstrate the development of the ideas and provide further insights into Skinner's

thinking. Central research propositions are derived around Skinner claims that cultural practices are selected through a process that is analogous to the process of operant conditioning and that “*no new behavioural processes are involved*” in the evolution of cultural practices (Skinner 1984b, p. 221; 1984f, p. 718; 1984h, p. 504).

Section 3.4 critically appraises Selection by Consequences in the light of the generic Variation, Selective Retention, and Inheritance-Replication (VSI) framework of socio-cultural evolution pointing out the areas wherein Skinner’s conceptualisation is weak or incomplete. Additional research propositions and operational definitions are suggested. Section 3.5 provides a summary of the various points that will be developed along the way.

This literature review forms the conceptual and operational heart of the research.

3.2 Principles of the Experimental Analysis of Behaviour

3.2.1 Operant Conditioning

Operant conditioning summarises causal or functional relations between behaviour (the dependent variable) and its environment (the independent variable) uncovered using experimental procedures “whereby the rate of responding is brought under the control of consequent stimuli (reinforcers and punishers) in the presence of antecedent signals that particular outcomes will follow the performance of specific actions” (Foxall 1990, p. 32; 2010b)¹⁰⁷.

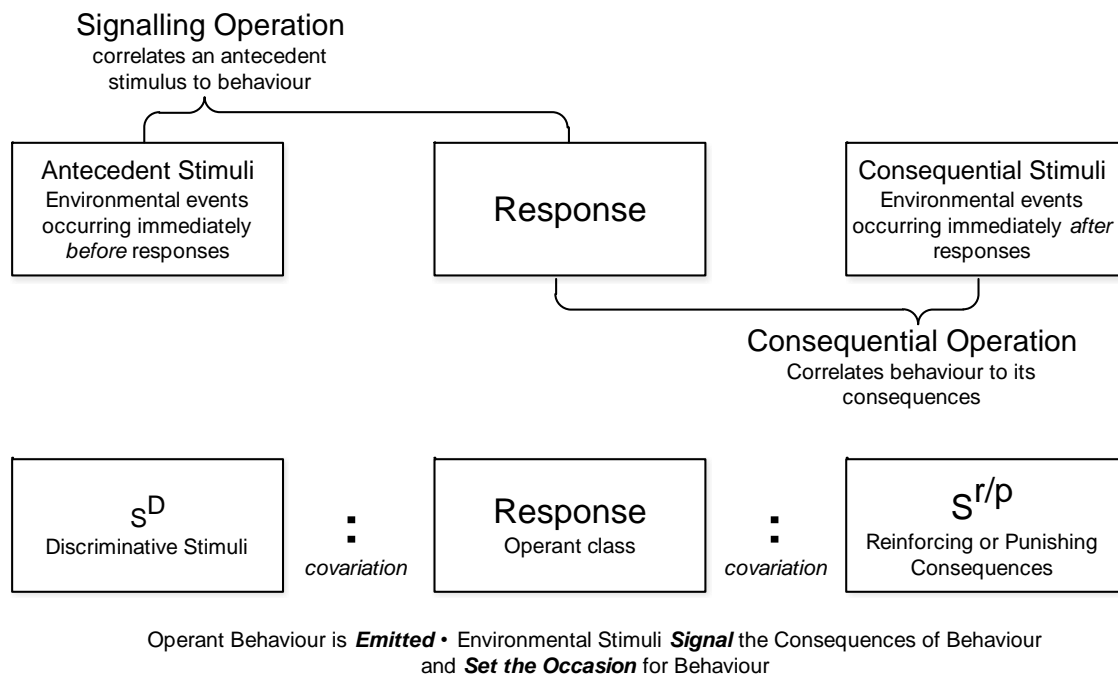
Sections 3.2.1 to 3.2.6 explain the various dimensions of this definition. Section 3.2.7 describes the operant interpretation to problem-solving distinguishing between behaviour that falls under the direct control of environmental contingencies (contingency-shaped behaviour) and behaviour

¹⁰⁷ Skinner (1974, 1981, 1984b) claims that operant conditioning is an evolved learning process thereby constituting an important dimension of human phylogeny and ontogeny and providing significant flexibility to individuals during their respective lifetimes. Through operant conditioning, for example, the rate of emission of new responses could be strengthened by the environmental consequences that immediately followed them (Skinner 1981).

that falls under the indirect control of these contingencies through verbal behaviour. The latter form of behaviour is uniquely human and emphasises the important role of the social dimension in Skinner’s thinking. Section 3.2.8 describes how behaviour is acquired. Section 3.2 thus provides the central operant principles uncovered in the EAB and emerge directly from Skinner’s work in the field.

Figure 13 summarises the components of the experimental procedures and relations involved depicting the three-term operant *contingency*, $S^D:R \rightarrow S^{r/p108}$.

Figure 13 – Operant conditioning as a Response→Stimulus model of consequential learning in Experimental Spaces



3.2.2 Behaviour and its Properties

Within this research, behaviour is operationally defined as the set of functions that facilitate the interaction between individuals and their physical

¹⁰⁸ The colon or \rightarrow denotes the terminological usage “sets the occasion for” (Cooper *et al.* 2007; Foxall 2007c, p. 6; Moore 2008; Johnston and Pennypacker 2009) reflecting covariation or probabilistic relations between variables (Foxall 1990). In the EAB, *procedures* or *operations* are defined as a particular arrangement or alteration of conditions within an experimental setting. *Processes* are changes in the response rates (the outcomes of behaviour) as a result of an experimental procedure (Ferster and Skinner 1957, pp. 730-731; Catania 1998; Moore 2008).

(Skinner 1966b, 1969, 1971, 1984d) and social environment (Skinner 1966b, 1969, 1971; 1981, p. 501; 1984d)¹⁰⁹.

One essential difference between behaviourist and other explanations lies in the analysis of behaviour through its function rather than providing a topographical description followed by an examination of related or underlying mechanisms (Baum 2005). Thus, *patterns* of behaviour are conceptualised in terms of groupings of functionally similar behaviours (a *response class*) irrespective of their topography. Hence, buying a tie and picking flowers are classed as functionally similar behaviour if the function of these topographically dissimilar behaviours is giving the tie or the flowers away as a present. On the other hand, reading a book for pleasure or for writing a review comprise two different response classes despite the similarity in the topography of behaviour¹¹⁰.

The central concern in this research is *operant* or *instrumental* behaviour, i.e., “behaviour that operates upon the environment and is instrumental in obtaining consequences” (Alhadeff 1982, p. 10). *Operant* behaviour is defined as “any behaviour whose future frequency is determined primarily by its history of consequences” and, therefore, may be said to be “selected, shaped and maintained by the consequences that have followed it in the past” (Cooper *et al.* 2007, p. 31)¹¹¹. Operants are *emitted* to reflect the spontaneity of behaviour prior to the occurrence of behaviour or to influence of consequences (Staddon 2001). Catania (1998) points out the *probabilistic* nature of causal relations

¹⁰⁹ The term “behaviour” appears to be an elusive concept (Glenn 1989; Cooper *et al.* 2007) since instances thereof may be defined in terms of different aspects such as topographical descriptions (i.e., form or structure of actions), the distribution of activities over time, or the locus of behaviour whether private or public (Glenn 1989). For example, Skinner also defines behaviour in terms of “the action of the whole organism” (Delprato and Midgely 1992, p. 1152). Cooper *et al.* (2007), Moore (2008) and Johnston and Pennypacker (2009) offer an interesting discussion on how behaviour may be defined. Moore (2008) describes behaviour as the “interaction between the organism and the environment that has particular properties as a result of certain functional relations that obtain between the features of the behaviour and the features of the environment. The interaction may have developed phylogenetically or ontogenetically, and represents a central characteristic of the organism as it progresses through its life cycle” (p. 68). The identified operational definition of behaviour appears sufficiently generic to be applied to the behaviour of the firm and to capture the emphasis on environmental interaction placed by evolutionary interpretations (see Section 3.3 and Section 3.4).

¹¹⁰ These points are the two dimensions of *equifinality* (Foxall 2010b). See also footnote 93 on page 77.

¹¹¹ The apparent circularity of this definition is discussed elsewhere (see Section 3.2.4, footnote 114 on page 91).

summarised by the three-term contingency: environmental stimuli *signal* the consequences of behaviour and, therefore, *set the occasion* for behaviour to produce reinforcement or punishment.

Behaviour is measured across a variety of quantifiable dimensions (see Cooper *et al.* 2007). Following Vella and Foxall (2011, 2013), the ‘measurable’ properties of behaviour that feature in this research are qualitative descriptions of changes in the rates of responding and the topographical dimensions.

3.2.3 The Environment as a Source of Stimulation

The *environment* refers to “the sum total of objects, circumstances, and stimulus properties” (Moore 2008, p. 66) that contributes in some way to changes in behaviour (Pierce and Cheney 2008; Johnston and Pennypacker 2009). It comprises a particular arrangement of such elements or events. The “environment conditions behaviour” means that environmental events establish the *conditions* for patterns of behaviour to occur at their particular and relatively enduring rates (Blackman 1974, p. 38).

An *environmental stimulus event* is operationalized as “a physical, temporal, social, or regulatory event that may produce a change in the rate of responding” (Vella and Foxall 2011, p. 57).

3.2.4 The Consequences of Behaviour

Through experiments, operant psychology provides a formal approach to analysing and researching instances where some consequences make behaviour more probable in future and other consequences make future emissions less likely (Skinner 1953, 1966b, 1974, 1980, 1987; Moore 2008; Pierce and Cheney 2008). *Consequential operations* are the experimental procedures employed to establish enduring changes in the rate of responding and are summarised by the R→S portion of the three-term contingency

(Catania 1998; Moore 2008; Pierce and Cheney 2008; Johnston and Pennypacker 2009)¹¹².

Consequences are conceptualised as the effects, modifications, or changes brought about by behaviour in the environment (Moore 2008; Johnston and Pennypacker 2009). Always following behaviour, these environmental consequences are expressed in terms of rewards and punishment (Skinner 1953). Consequences are classed as (consequential) stimuli because it is assumed that in *future* these stimuli may increase or decrease behavioural emissions (Skinner 1953; Johnston and Pennypacker 2009)¹¹³.

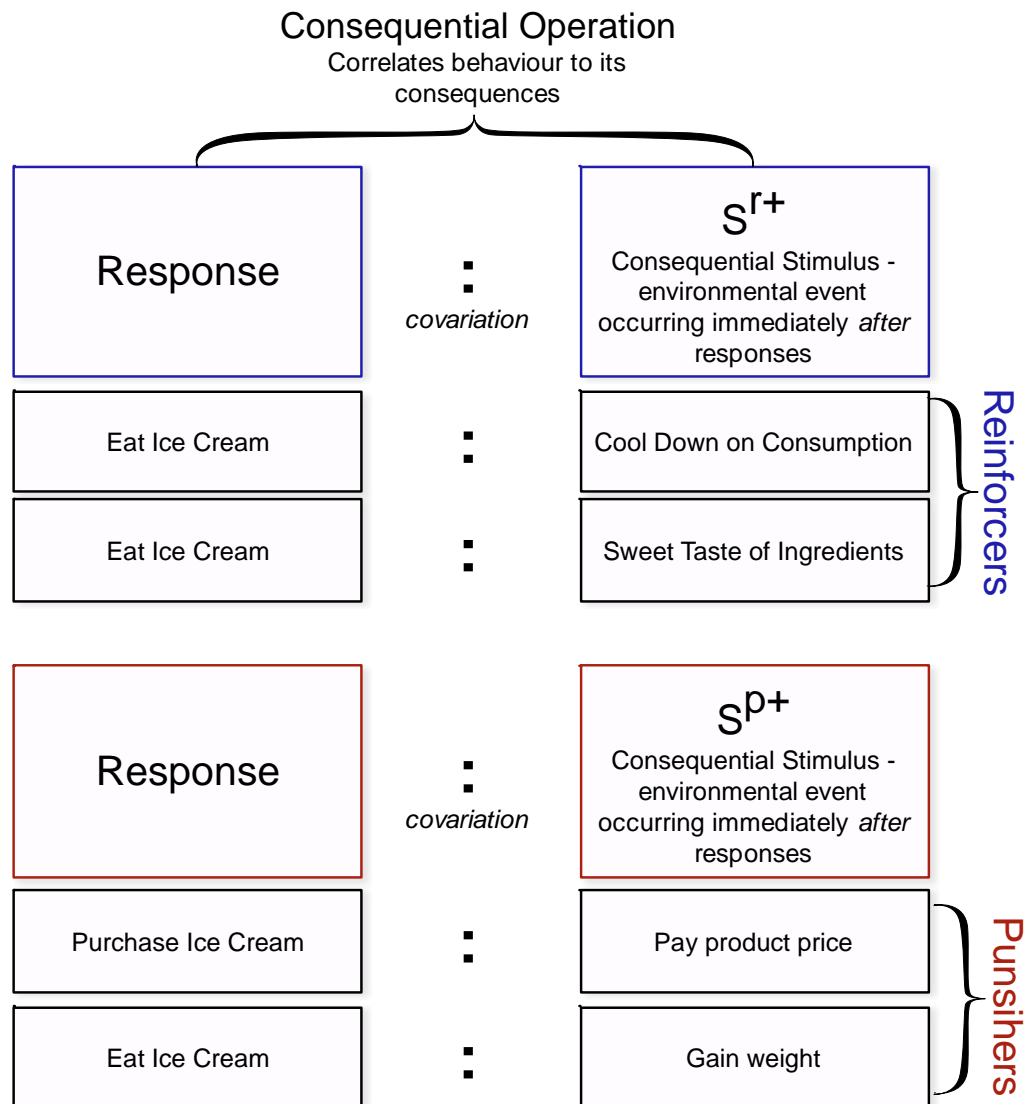
Consequences that are *empirically demonstrated* through an EAB to increase the likelihood of future behaviour are termed *reinforcers* whereas consequences that decrease the likelihood of future behaviour are termed *punishers*. Some consequences do not have any effect on behaviour and are considered *neutral* (Foxall 1990; Catania 1998; Moore 2008; Pierce and Cheney 2008; Johnston and Pennypacker 2009; Vella and Foxall 2011) (Figure 14). Although some events serve as effective reinforcers for most individuals, these events do not necessarily function so for all (Cooper *et al.* 2007, p. 275)¹¹⁴.

¹¹² Cooper *et al.* (2007, pp. 255-372) provide a very detailed explanation of the experimental aspects involved in these processes and operations. For the purposes of interpretation, the main principles suffice.

¹¹³ "It is not correct to say that operant reinforcement 'strengthens the response which precedes it.' The response has already occurred and cannot be changed. What is changed is the future probability of responses in the same class. It is the operant as a class of behaviour, rather than the response as a particular instance, which is conditioned" (Skinner 1953, p. 87).

¹¹⁴ The circularity of the principle of reinforcement is usually countered through the explanation that not all consequences of behaviour are reinforcing (*consistently* response strengthening) or punishing (*consistently* response weakening), and that some consequences do not produce changes in the future rates of response while others do (e.g., Zeiler 1978, pp. 22-24; Foxall 1990, p. 40; Catania 1998, p. 70; Cooper *et al.* 2007, pp. 260-261; Moore 2008, pp. 122-124; Tonneau 2008). Ice cream is categorised as either a reinforcer or punisher because of its consistent increases and decreases in behaviour when utilised in a consequential operation (Moore 2008). Only after an additional analysis via signalling operations, for example, a hot day or a craving for sugar, is it possible to better determine "why" ice cream reinforces behaviour or punishes it. (Natural selection is not circular for similar reasons - not all variations are of selective significance.)

Figure 14 – Examples of Reinforcers and Punishers



Consequences produced by operant behaviour are grouped according to the typical effects behaviours produce within the environment: the production, presentation, or increases of stimulus events, the removal or prevention of stimulus events, or changes in the consequences produced by other behaviour (Catania 1998; Johnston and Pennypacker 2009). Such stimulus events may be considered as appetitive, aversive, or neutral by classifying their common effects on behaviour (e.g., Vella and Foxall 2011)¹¹⁵. Groupings form *stimulus classes*.

¹¹⁵ The terms “appetitive” and “aversive” should not be taken as implying an intrinsic property of a stimulus (leading to) or implicating “mental acceptance” or “desire” on the part of the individual (Foxall 1990, 1997b, 2007c, 2010b). The relationship between the response and its consequence is not “teleological”, i.e., it does not indicate that the organism acts in such a way because it *plans* or *wishes* to obtain a reinforcer (Foxall 1990, pp. 38-39). Neither should these terms be taken as implying a judgement that some consequences are “good” or “bad” in either the absolute or normative sense. See also Appendix A3.2.

In addition, the EAB categorises reinforcers and punishers as positive or negative to summarise their overall effects on the environment: *positive* is the modifier used to refer to increases or decreases in future responding when the consequences of behaviour present or add events to the environment. *Negative* is the modifier used to refer to increases or decreases in future responding when the consequences of behaviour reduce or remove events to the environment (Catania 1998; Moore 2008).

Figure 15 presents operational definitions of positive and negative reinforcers and punishers based on Johnston and Pennypacker (2009, pp. 73-74).

Figure 15 – Operational Definitions of Positive and Negative Reinforcers and Punishers

Response	<p style="text-align: center;">S^{r+}</p> <p style="text-align: center;">Positive Reinforcer</p> <p>A class of stimuli that occur immediately following responding, resulting in an increase in some aspect of the response class over baseline events</p>
Response	<p style="text-align: center;">S^{r-}</p> <p style="text-align: center;">Negative Reinforcer</p> <p>A class of stimuli that are terminated following responding, resulting in an increase in some aspect of the response class over baseline events</p>
Response	<p style="text-align: center;">S^{p+}</p> <p style="text-align: center;">Positive Punisher</p> <p>A class of stimuli that occur immediately following responding, resulting in a decrease in some aspect of the response class over baseline events</p>
Response	<p style="text-align: center;">S^{p-}</p> <p style="text-align: center;">Negative Punisher</p> <p>A class of stimuli that are terminated immediately following responding, resulting in a decrease in some aspect of the response class over baseline events</p>

Source: Adapted from Johnston and Pennypacker (2009, pp. 73-74, emphasis added)

Although the fundamental datum used by Skinner in research on reinforcement is the rate of responding (Skinner 1953, 1974; Cooper *et al.* 2007; Foxall 2010b), the consequential operation is now said to effect all or any of the properties of behaviour (Cooper *et al.* 2007). Behaviour is reinforced and not the individual (Catania 1998; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009).

Three conditions must be satisfied within an EAB to term a stimulus as a reinforcer or punisher: (a) behaviour produces some consequence, (b) the probability of behaviour increases or decreases respectively, and, (c) the increased or decreased probability of behaviour is a function of the specific consequence (Catania 1998; Cooper *et al.* 2007; Moore 2008). When these conditions are met, the stimulus is termed a reinforcer and the behaviour that generated such a stimulus has been reinforced (Catania 1998; Cooper *et al.* 2007; Moore 2008). These conditions provide the basis for establishing reinforcers and punishers through qualitative data. In interpretation, association (rather than correlation) proceeds on the basis of the most likely function of behaviour rather than the contiguity of behaviour and its environmental effects¹¹⁶.

Reinforcement and punishment are defined in Figure 16 in terms of experimental operations following Cooper *et al.* (2007) and Pierce and Cheney (2008).

¹¹⁶ See also Appendix A2.6.2 and Appendix A3.1.

Figure 16 – Definition of Positive and Negative Reinforcement and Punishment Procedures

Modifier	Effect on Behaviour in the Class of Procedures termed as <i>Reinforcement</i>	Effect on Behaviour in the Class of Procedures termed as <i>Punishment</i>
<p>Positive (Presentation, Occurrence, or Increase in Some Stimulus Event)</p>	<p>“A class of procedures involving the occurrence of a stimulus immediately following responding that results in an increase in some aspect of the response class over baseline levels” (Johnston and Pennypacker, 2009, pp. 73-74).</p>	<p>“A class of procedures involving the occurrence of a stimulus immediately following responding that results in decrease in some aspect of the response class over baseline levels” (Johnston and Pennypacker, 2009, pp. 73-74).</p>
<p>Example</p>	<p>Praising a child for sharing her toys is a positive reinforcer if the child begins sharing her toys regularly (Pierce and Cheney 2008, p. 68).</p>	<p>Scolding a child for crossing a busy road without permission is a positive punisher when the child begins to regularly ask permission to cross the road (Pierce and Cheney 2008, p. 68).</p>
<p>Negative (Removal, Termination, or Decrease in Some Stimulus Event)</p>	<p>“A class of procedures involving the termination of a stimulus immediately following responding that results in an increase in some aspect of the response class over baseline levels” (Johnston and Pennypacker, 2009, pp. 73-74).</p>	<p>“A class of procedures involving the termination of a stimulus immediately following responding that results in decrease in some aspect of the response class over baseline levels” (Johnston and Pennypacker, 2009, pp. 73-74).</p>
<p>Example</p>	<p>Self-administering a mild analgesic to relieve a headache is a negative reinforcer if the individual begins to take this medication (as a cure for recurring headaches).</p>	<p>Two boys are watching their favourite TV show and start fighting. Parent switches off the TV. Reinforcing event (the favourite TV show) is terminated to decrease the fighting (Pierce and Cheney 2008, p. 69).</p>

Source: Adapted from Johnston and Pennypacker (2009, pp. 73-74) and Pierce and Cheney (2008, p. 68)

A. Interpreting Literal Exchange

Marketer and consumer behaviour are characterised as a chain of interlocked sequence of events extending over space and time that eventually either terminate in literal exchange or in escape-avoidance behaviours (Foxall 1990). Literal exchange constitutes a transaction between two parties involving the mutual surrender of property rights (Foxall 1999b; Vella and Foxall 2011, 2013) and therefore is best conceptualised as the intersection of two terminal responses. Exchange behaviour is simultaneously reinforced and punished: when an individual purchases a product, she acquires legal title to ownership and use. Behaviour may be strengthened by the benefits accrued from such title. In exchange, however, she surrenders an amount of money equal to its market price. The surrender of money may weaken purchase behaviour (Alhadeff 1982; Foxall 1990, 1997b, 1999b; Vella and Foxall 2011). The purchase and consumption of ice cream is positively reinforced on a hot day and positively punished on presentation of its actual price. A discount or a buy-one-get-one-free offer on ice cream functions reduce the positively punishing effects of ice cream purchase and, therefore, the discount (or promotion) is interpreted as a negative reinforcer. Reinforcers and punishers operate independently, simultaneously (Zeiler 1978) and in combination (Vella and Foxall 2011)¹¹⁷.

3.2.5 Antecedent Stimulation

The *signalling operation* is the second integral part of operant conditioning. The operation summarises the S→R portion of the three-term contingency (Catania 1998; Moore 2008) where R represents the operant class emitted in the presence of an antecedent stimulus event S. The signalling characterisation of an event does not arise from an intrinsic property of the stimulus itself but acquires its function by virtue of the individual's history of reinforcement and punishment learning in identical and similar situations (Foxall 1990, 1997b, 2010b; Vella and Foxall 2011, 2013).

¹¹⁷ The definition of literal exchange in these terms is a Skinnerian interpretation rather than attributable directly to him.

Stimuli acquire either *discriminative* or *motivational* function.

The explanation given for the future re-enactment of behaviour that has a certain consequence also hinges on the environmental events present when the behaviour is originally emitted, learned, and performed and its consequences are generated (Foxall 1990; Cooper *et al.* 2007; Foxall 2007b; Johnston and Pennypacker 2009). Reinforcement (or punishment) operations may alter the function of stimuli that are immediately antecedent to the reinforced behaviour (Alhadeff 1982; Cooper *et al.* 2007). When behaviour is emitted in the presence of some particular antecedent event and that behaviour produces a reinforcing or punishing effect (i.e., a consistent increase or decrease in the rate of responding), the antecedent events may come to serve a signalling function: that is, reinforced behaviour is more likely to be emitted when this or similar antecedent events are present rather than when absent (Foxall 1990; Johnston and Pennypacker 2009). As a result of this “association” (Alhadeff 1982, p. 10) or repeated temporal and/or spatial “pairing” (Cooper *et al.* 2007, p. 261; Johnston and Pennypacker 2009), the particular set of environmental antecedents evoke (“make more likely” (Cooper *et al.* 2007, p. 261)) the future emission of reinforced behaviour in its presence (Alhadeff 1982; Cooper *et al.* 2007; Foxall 2007b; Johnston and Pennypacker 2009).

Over a period (establishing a history), these antecedent stimuli assume *discriminative function* as they may *set the occasion* for the emission of certain responses rather than others (Catania 1998; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009). Such antecedents are known as

*discriminative stimuli*¹¹⁸. The term *discrimination* is used to describe instances when the individual responds in different ways to stimulus events that differ from the discriminative stimulus as a result of a history of reinforcement and punishment in the presence of other stimulus events (Moore 2008).

Following the distinctions by Laraway *et al.* (2003), Michael (2007), and Fagerstrøm *et al.* (2010), Vella and Foxall (2011, 2013) point to the distinction between an antecedent stimulus that assumes discriminative function and an event that functions as a motivating operation (MO).

Whereas a discriminative stimulus is correlated to the differential availability of an effective reinforcer (or punisher) for a particular behavioural emission, an MO is correlated to the differential reinforcing (or punishing) effectiveness of some environmental event (Michael 2007), i.e., the degree to which a consequence is reinforcing or punishing within a particular situation (Fagerstrøm *et al.* 2010). In very lay terms, while “an MO determines how much the consumer wants something ... an S^D signals its availability” (Fagerstrøm *et al.* 2010, p. 115).

¹¹⁸ The technical definition of a discriminative stimulus is “a stimulus that controls a type of behaviour because that stimulus has been [correlated] to the *differential availability* of an effective reinforcer for that type of behaviour. Differential availability means that the relevant consequence has been available in the presence of, and unavailable in the absence of, the stimulus... A true S^D constitutes at least a probabilistic guarantee that the relevant consequence will follow the response. ... The unavailability of a reinforcer in the absence of a stimulus implies that the unavailable event would have been effective as a reinforcer if it had been obtained” (Michael 2007, p. 377). *Stimulus control* is the term used to refer to the situation when the likelihood of behavioural emissions varies with respect to properties of antecedent environmental events (Moore 2008). In the early instances during which stimuli acquire discriminative function, behaviour tends to be emitted only when the configuration of the environment is exactly the same as that in which the behaviour was reinforced in the past. Over time, responses will also be emitted when the configurations are similar to the original conditions. This phenomenon is referred to as *stimulus generalisation* (Alhadeff 1982; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009). Such terms as *generalisation* and *discrimination* should not be mistaken as processes occurring in the ‘mind’ of the individual; these terms only refer to relations between antecedent stimuli and operants. On the one hand, stimulus generalisation refers to instances to describe when the individual responds in similar ways to stimulus events that are similar to the discriminative stimulus. On the other, discrimination is used to describe instances when the individual responds in different ways to stimulus events that differ from the discriminative stimulus as a result of a history of reinforcement and punishment in the presence of other stimulus events (Moore 2008). It follows therefore that the *learning history* of the organism is defined in terms of a history of reinforcement and punishment in sufficiently similar (rather than identical) situations. To simplify matters, the research assumes that errors do not occur in stimulus generalisation due, for example, to the biological limitations of human cognitive (physiological) functions as described in bounded rationality (Simon 1955, p. 101).

An MO is defined as “an environmental event that first establishes (or abolishes) the reinforcing or punishing effect of another event and second, evokes (or abates) behaviours related with that event ... an MO has two main effects: first, it establishes or abolishes the reinforcing (or punishing) effect of another event (the *value-altering effect*) and second, it evokes (or abates) behaviours related with that event (the *behaviour-altering effect*)” (Michael 2007; Fagerstrøm *et al.* 2010, p. 111). Figure 17 elaborates and provides examples of the two defining effects of MOs¹¹⁹.

The specification of MOs originally emerges from Michael (1982) who extended on the use of the terms *deprivation* and *satiation*. Broadly, these latter terms are operationally defined as follows: deprivation refers to the resulting changes in the rate of responding (usually increases) as a result of the withholding reinforcers. Satiation refers to the resulting changes in the rate of responding (usually decreases) as a result of presenting reinforcers (Cooper *et al.* 2007).

¹¹⁹ For example, the blue tap on water cooler may represent a discriminative stimulus for cold water since in the past the colour has been associated with the availability of cold water. Thus while spending a few hours without water in a hot and stuffy room (an MO) increases the value of water, the blue tap (S^D) does not (Cooper *et al.* 2007; Fagerstrøm *et al.* 2010). See also Figure 18 and Figure 19 on page 102.

Figure 17 – The Two Defining Effects of Motivating Operations

<p>Establishing Operations (EO)</p>	<p>Establishing operations refer to MOs that increase the reinforcing or punishing effectiveness of some event.</p> <p><i>Value altering effect:</i> an increase in the current effectiveness of some stimulus, object, or event as reinforcement [or punishment].</p> <p><i>Behaviour altering effect:</i> an increase in the current frequency of all behaviour that has been reinforced [or punished] by that stimulus, object or event (i.e., the evocative effect).</p>
<p>Food Deprivation as an EO</p>	<p><i>Value altering effect:</i> An increase in the reinforcing effectiveness of food.</p> <p><i>Behaviour-altering evocative effect:</i> An increase of the current frequency of all behaviour that has been reinforced by food.</p>
<p>Abolishing Operations (AO)</p>	<p>Abolishing operations refer to MOs that decrease the reinforcing or punishing effectiveness of some event.</p> <p><i>Value altering effect:</i> a decrease in the current effectiveness of some stimulus, object, or event as reinforcement [or punishment].</p> <p><i>Behaviour altering effect:</i> a decrease in the current frequency of all behaviour that has been reinforced [or punished] by that stimulus, object or event (i.e., the abative effect).</p>
<p>Food Ingestion as an AO</p>	<p><i>Value altering effect:</i> A decrease in the reinforcing effectiveness of food.</p> <p><i>Behaviour-altering abative effect:</i> A decrease in the current frequency of all behaviour that has been reinforced by food.</p>

Source: Michael (2007, p. 376)

3.2.6 Contingencies of Reinforcement

The *three-term operant contingency*, $S^D:R \rightarrow S^{r/p}$, summarises the interrelationships within and across the consequential and signalling operations just described. The contingency is the “fundamental analytical unit of operant behaviour” (Moore 2008, p. 92) and “the central explanatory device” (Foxall 2005, p. 35) in operant psychology.

Contingency, therefore, means “causal dependence” (Staddon 2001, p. 43) and “implies an ‘if-then and not otherwise’ relation...if the response occurs (in the presence of a discriminative stimulus), then the consequence will follow and not otherwise” Moore (2008, p. 92). Contingencies summarise the lawful relationships between environmental events that set the occasion for behavioural emission (**a**ntecedent stimuli or events), an operant (**b**ehaviour), and the consequences such operant produces (**c**onsequent events or consequential stimuli). Johnston and Pennypacker (2009) define the three-term contingency as “a set of functional relationships among classes of antecedent stimuli, responses and consequent stimuli that together constitute the model of how behaviour is influenced by the environment” (p.6). The three-term contingency summarises the process of operant conditioning¹²⁰.

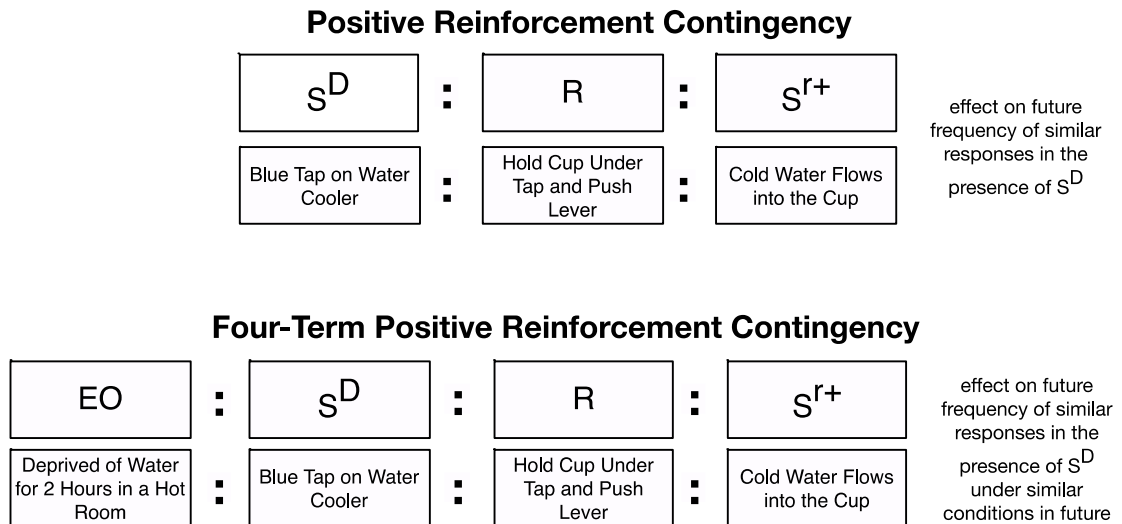
The inclusion of MOs transforms the operant contingency into a four-term contingency – $MO:S^D:R \rightarrow S^{r/p}$.

A. Types of Contingencies

There are four basic types of contingencies of reinforcement summarising distinct processes of reinforcement and punishment – positive reinforcement, negative reinforcement, positive punishment, and negative punishment contingencies (Figure 18 and Figure 19).

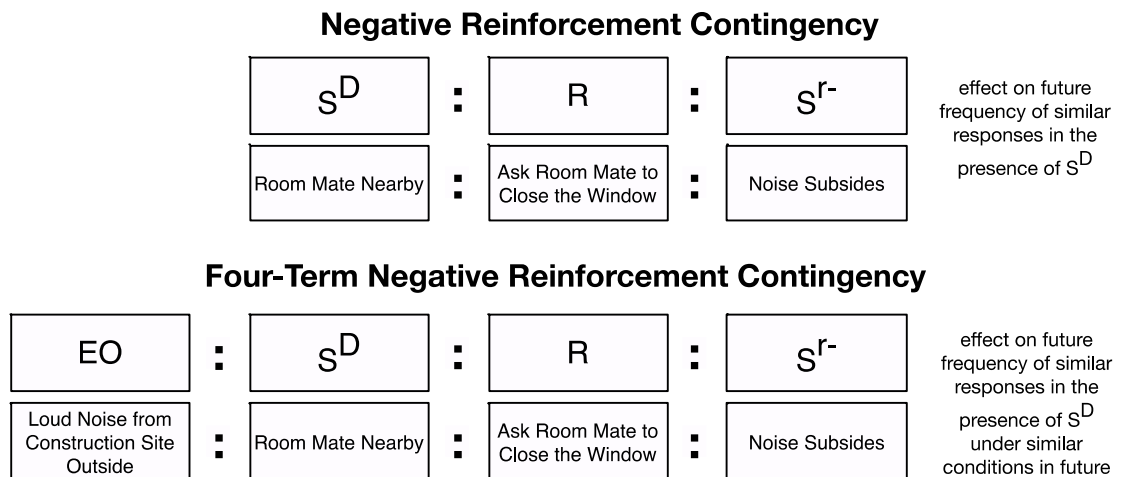
¹²⁰ Skinner’s (1969) description of the three-term contingency emphasises behaviour-environment interaction and the interrelationships summarised by the contingencies: “an adequate formulation of the interaction between an organism and its environment must always specify three things: (1) the occasion upon which a response occurs, (2) the response itself, and (3) the reinforcing consequences. The interrelationships among them are the ‘contingencies of reinforcement’” (p. 7).

Figure 18 – Positive Reinforcement Contingency and Motivating Operations



Source: Cooper et al (2007, pp. 265, 292)

Figure 19 – Negative Reinforcement Contingency and Motivating Operations



Source: Cooper et al (2007, pp. 265, 292)

B. Schedules of Reinforcement

Contingencies of reinforcement also comprise a *schedule of reinforcement*, which operates directly on the recurrence of operant behaviour (Foxall 2005). Schedules are “precise arrangements of contingencies” specifying the relative frequency with which behavioural emissions are followed by reinforcers or punishers (Foxall 1990, 2005; Cooper *et al.* 2007; Vella and Foxall 2011, p. 62). Such schedules may be *continuous* or *intermittent*, where “continuous schedules provide reinforcement continuously and intermittent schedules provide reinforcement either according to specified time intervals (interval schedules) or according to numbers of responses (ratio schedules)”

(Vella and Foxall 2011, p. 62). Further, both ratio and interval schedules may be fixed or variable (Figure 20).

Figure 20 – Intermittent Schedules of Reinforcement

Fixed Ratio Schedules	Arrangements where “reinforcement obtains after a certain fixed number of responses are performed.”
Variable Ratio Schedules	Arrangements where “the number of responses required changes from one reinforcer to the next.”
Fixed Interval Schedules	Arrangements where “reinforcement is obtained according to a fixed time interval.”
Variable Interval Schedules	Arrangements where “the amount of time elapsed between one reinforcer and the next is varied.”

Source: Vella and Foxall (2011, p. 64)

C. Approach and Escape-Avoidance Behaviour

Non-reinforced responses made in the presence of a positive or reinforcing stimulus event are called *approach* responses (Alhadeff 1982; Pierce and Cheney 2008). Approach is shaped and maintained by positive reinforcement contingencies.

Both avoidance and escape are response classes to aversive stimulus events and as the intensity of these events increases, so does the likelihood of escape-avoidance behaviour increase (Cooper *et al.* 2007). Emissions that terminate or remove existing or on-going stimulus events are termed as *escape* behaviour. On the other hand, emissions that prevent or postpone the presentation of aversive stimuli are termed *avoidance* (Alhadeff 1982; Cooper *et al.* 2007; Pierce and Cheney 2008)¹²¹. No particular distinction will be made between escape and avoidance contingencies because both response classes are usually maintained through negative reinforcement (Vella and Foxall 2011, 2013)¹²².

¹²¹ Taking medication to cure an ailment is an instance of escape. Having annual flu shots to prevent getting sick constitutes avoidance.

¹²² These two response classes of behaviour are of particular importance to conceptual development and research on firm behaviour (Vella and Foxall 2011, 2013).

3.2.7 Rule-Governed and Contingency Shaped Behaviour

Rules play an important part in evolutionary interpretations since the concept is used to reflect quasi-stable properties – the relative stability or regularity in features emerging from the selective elimination and retention of those entities undergoing natural selection (from one generation to the next). Rules are also important because the concept is used to construct explanations of replication and inheritance and transmission of stable features to alter the frequency distribution of characteristic traits within the population over generations¹²³.

Thus, to begin constructing Skinner’s evolutionary analogy, it is important to examine the Skinnerian definition of rules, the role these rules play during the lifetime of the individual, and, rule formulation. These three points constitute the subject matter of this section¹²⁴.

Underlying Skinner’s conceptualisation of rules as antecedent stimuli and contingent behavioural emissions of rule-following and rule-formulation are two important dimensions: first, a recurring theme in Skinner’s work (e.g., 1953, 1961b, 1963, 1966c, b, 1969, 1971, 1974, 1981, 1984b, h, f, 1986) and also a vital part of Selection by Consequences is the emergence and evolution of verbal behaviour among humans and our susceptibility to social reinforcement, which, in turn underscores the importance of “verbal communities” or social groupings. Second, Skinner argues that behaviour is acquired (shaped) and maintained either directly through an exposure to the contingencies of reinforcement (*contingency-shaped behaviour*) or indirectly through rules (*rule-governed behaviour*) (Skinner 1953, 1966b, 1969, 1974, 1984d; Pelaez 2013).

Rules are verbal (spoken or written) explicit or implicit descriptions of contingencies presented as prescriptions, instructions, injunctions, and/or descriptive summaries of the contingencies (Skinner 1966b, 1969, 1984d, g). Simply put, a rule is “a contingency-specifying discriminative stimulus” (Skinner

¹²³ Refer to the definition of natural selection in Chapter 1, Section 1.1.1 and related explanations in Section 3.4 (especially Section 3.4.3 and Section 3.4.4).

¹²⁴ For the purposes of the research and of operationalization, Skinner’s foundational views suffice. Chapter 12 of Modgil and Modgil (1987) offers an interesting insight with respect to Skinner’s conceptualisation of rule governed and contingency shaped behaviour.

1966b; 1969, p. 149; 1984d, p. 588; 1984g)¹²⁵. Contingencies summarise empirical regularities or lawful relations between antecedent events that set the occasion for behavioural emissions, the operant emission, and the consequences such an operant generates within the environment. Specification of the contingencies is therefore a specification of empirical regularities or consistencies. Hence, rules express this regularity and consistency (Hayes and Hayes 1989).

Rules may be found as antecedent environmental verbal events outlining the *probable* outcomes contingent on following the rules and on not complying (Skinner 1966b, 1969, 1984d).

Behaviour that is contingency-shaped is never identical to rule-governed behaviour¹²⁶. For example, the existence of a rule does not necessarily mean that the behaviour specified within that rule will be evoked; not all contingencies can be described accurately or completely or observed or analysed¹²⁷; and, rules embody solutions to past problems (i.e., behaviour appropriate, adapted, or fit to satisfy past contingencies) and thus may not necessarily be appropriate

¹²⁵ “Rules [are] derived from the contingencies, in the form of injunctions or descriptions which specify occasions, responses and consequences” (Skinner 1966b; 1969, p. 160; 1984d, p. 588; 1984g). Examples of rules specifying behaviour are advertising slogans, price lists, marketing plans, brands, company policies, and objectives, laws, the legally-binding interventions by the regulator, and contracts (Vella and Foxall 2011). Cultural maxims and physical technologies are also examples of rules that may come to regulate an individual’s behaviour (Skinner 1966b; 1969, p. 160; 1984d).

¹²⁶ This is because whereas contingency-shaped behaviour comes under the *direct* control of discriminative stimuli and is *directly* maintained by its consequences, rule governed behaviour comes under verbal stimulus control (thus, indirect) and is only indirectly maintained by consequences (Skinner 1966b, 1969, 1984d). In lay terms, a parent tells his child that playing with matches may result in getting burnt. This is a verbal description of the contingencies. The child experiences the contingencies indirectly. If the child plays with matches and does burn her fingers, she would then have directly experienced the negative consequences of not following her father’s advice.

¹²⁷ Skinner (1969) provides a behavioural definition of terms as *awareness* and *unconsciousness*. With regards the latter, for example, he argues: “all behaviour is basically unconscious in the sense that it is shaped and maintained by contingencies which are effective even though they are not observed or otherwise analysed” (Skinner 1969, p. 247). Therefore, awareness is defined in terms of the extent to which an individual is able to describe the relevant variables including the events that signal the consequences of behaviour and the reinforcement and punishment contingent upon emitting certain behaviours (Skinner 1969; see also commentaries on Behaviourism at Fifty in Catania and Harnad 1984, pp. 615-667). (For a discussion on an operant interpretation of awareness see also Lee (1988, pp. 138-143)) The term *error*, according to Skinner (1966b, 1969, 1984d) reflects a judgment on the part of the individual. Instead, responses are either appropriate or inappropriate to satisfy the prevailing contingencies (Skinner 1966b, 1969, 1984d, f). In trials, “a response is made that is less than complete but still enough to produce a consequence that alters its probability of occurrence. It is not an “error” just because no effective change follows” (Skinner 1984f, p. 718).

given prevailing environmental conditions¹²⁸ (Skinner 1966b; 1969, p. 160; 1971, 1974, 1984d). That said, it is relatively easier to identify the rules governing behaviour because of the conspicuousness of rules (e.g., Skinner 1974). Rules are learnt more rapidly than the contingency-shaped behaviour specified therein (e.g., Skinner 1966b, 1969; 1974, p. 138; 1984d).

Rules may thus be interpreted as a *probability* to act in a certain way given sufficiently similar circumstances with the ultimate emphasis placed on *actual* emitted patterns. The view expressed by Skinner does not mean that individuals are predisposed to act in a certain way (Skinner 1984g)¹²⁹. Rather, rules provide a basis for predicting the behaviour of individuals given stable environmental conditions and individual biological and learning histories, i.e., the potential for the continuity of behaviour within sufficiently similar settings (Foxall 1993b, 1997b, 2010b).

A. Rule Following and Formulation

Individuals interacting continuously with their physical and social environments (Skinner 1961b, 1966b, 1969, 1971, 1984d, h), solve the problems posed by the complexity of prevailing contingencies through following or formulating rules (Skinner 1966b, 1969, 1984d, h)¹³⁰. Problem solving is defined in terms of some chain of behaviour terminating by satisfying complex

¹²⁸ Skinner brings the example of the difficulties skilful doctors find in describing all their experiences and lessons learnt to pass on to younger generations.

¹²⁹ In reply to commentaries on Skinner (1963) in Catania and Harnad (1984), Skinner (1984g) clarifies: “a disposition to perform behaviour is ... a probability of behaviour” (p. 662).

¹³⁰ Skinner treats the social environment as part of the natural and objective world. This contrasts sharply with Searle’s compelling distinction between objective or brute facts, on the one hand, and “institutional facts” or “facts dependent on human agreement” on the other (Searle 1995, p. 2). At the methodological level, however, the two views facilitate important and similar considerations for the purposes of this research including the idea that literal exchange is an institutional fact or a social practice. It should also be noted that the extraction or formulation of rules is clear in Foxall’s account of consumer behaviour (Foxall 1999c) but not in his account of the firm (Foxall 1999b). Chapter 4 addresses this shortcoming within the ambit of the firm.

environmental contingencies and solution of which brings about a reinforcing change in behaviour (Skinner 1966b, 1969, 1984d)¹³¹.

In his explanation, Skinner also seems to be drawing an analogy between the conditions or problems posed by a real world environment that need to be satisfied and the arbitrary reinforcement criteria imposed by the researcher in an experimental setting as part of the environmental conditions of the research subject. In the latter setting, the criterion may be understood as a minimum set of conditions that must be satisfied to produce reinforcement (e.g., Skinner 1950, 1984c)¹³². For example, imagine collecting a friend's suitcase from baggage claim without having any information on the characteristics of the suitcase except the tag number. The criterion for reinforcement in this case (i.e., satisfying the contingency) is returning the suitcase to its owner satisfied through emitting a chain of responses such as random sampling of suitcases, marking checked suitcases and so on. Each response sets the occasion for subsequent responses with reinforcement and punishment contingent upon zeroing in on the correct suitcase (Skinner 1966b, 1969, 1984d)¹³³.

Broadly, problem solving involves either following existing verbal specifications of the contingencies (extracted by the individual from previously reinforced and punished responses, the prescriptions of others including proverbs, codified laws and scientific achievements; both as regulatory

¹³¹ Quick freezing technology or meteorological models for predicting the weather represent examples of specifications of physical contingencies (physical rules) whereas competition law and marketing configurations are interpreted as being a specification of social contingencies (social rules). Marketing configurations or mixes also involve rules for conducting literal exchange. Such a formulation does not deny the complexity of these phenomena or human inventiveness. Rather it presents an operant interpretation emphasising only observable dimensions of behaviour and a specification of the variables arranged as contingencies. That is, reliable relations of occasions for emitting certain behaviours over others and the reinforcing (presumably the solutions such as quick freezing) or punishing (food spoiling quickly, ice cream melting in transport between a factory and a distributor) consequences. In non-behavioural terms, contingencies may be conceptualised as describing patterns of behaviour that worked relatively well or badly across a range of instances. For the various commentaries on Skinner's view of problem solving see also Catania and Harnad (1984).

¹³²The reinforcement criterion is an important concept in this research and is operationally defined in Section 3.2.8A.

¹³³ Quick freezing technology is a case of the non-trivial resolution for avoiding spoilage. Marketing is the equally complex resolution for generating profitable literal exchange of sufficient volume to guarantee survival and growth of the firm depending upon ever-changing market conditions. Skinner's explanation suggests that one dimension of complexity involves a dynamic environment characterized by a multitude of contingencies and lack of foresight about the reinforcement criterion, for example, the "topography of the solution is not known" (Skinner 1984d, p. 590). Thus, Skinner (1961b, 1973; 1978, pp. 16-20; 1989b), Dawkins (1984), and Blute (2010) emphasise the non-teleological nature of Selection by Consequences.

discriminative stimuli) or emitting *precurrent* behaviour in the absence of an adequate pattern of terminal behaviour (Skinner 1966b, 1969, 1984d).

Precurrent behaviour is defined as behaviour that functions as a discriminative stimulus for subsequent action: for example, preparing a shopping list before visiting a super market. Writing the list is precurrent behaviour and the list itself is a discriminative stimulus for obtaining groceries (Pierce and Cheney 2008). Therefore, solving a problem involves emitting responses that serve as reinforcers (success) and punishers (failure) to subsequent emissions until the environmental conditions are satisfied through the chain (Skinner 1966b, 1969, 1984d). The process is referred to as *chaining*. The criterion of reinforcement, in this case, is obtaining products that fulfil a particular reinforcing function (e.g., food)¹³⁴. Rules may be constructed, through observation, irrespective of whether the individual is subject to the prevailing contingencies (Skinner 1969).

In the Skinnerian account of problem solving (Skinner 1966b, 1969, 1984d, a), verbal discriminative stimuli are highly effective and flexible signals setting the occasion for subsequent behaviour of the individual and of others (including collaboration and social transmission and replication of certain practices). Individuals privately or publicly verbalise and extract rules summarising their experiences. In addition, a public product of individual problem solving also involves the possible transmission to others within the social grouping and subsequent formal and informal accumulation of solutions. Some of these verbally formulated solutions are retained thereby facilitating more effective behaviour on the part of individuals who do not necessarily require being exposed directly to the contingencies expressed in the rules. These rules are borne out of solutions to past environmental problems, govern stable patterns of behaviour, and may be taken as representing relatively adequate predictions of behaviour: “culture solves problems for its members, and it does so by transmitting discriminative stimuli already constructed to

¹³⁴ Other examples of precurrent behaviour include analysing and studying the environment through private (thinking) and public verbal calculations, devising and running experimental models that mimic the physical world, statements of purpose (setting goals), forecasting and so on (Skinner 1966b, 1969, 1984d, h). Marketing plans, objectives, and forecasts, therefore, are taken as examples of the setting of self-rules (Vella and Foxall 2011) and constructing discriminative stimuli.

evoke solutions” (Skinner 1966b; 1969, p. 141; 1984d, p. 585). Effective behaviour depends upon the appropriateness of the behaviours prescribed in the rules given the prevailing contingencies (Skinner 1966b, 1969, 1984d)¹³⁵.

3.2.8 The Acquisition of Behaviour through Shaping and Differential Reinforcement

So far, the discussion has treated the determination of the contingencies that maintain previously learned behaviour. How is behaviour acquired?

Generally, complex behaviours are not acquired in their complete form or spontaneously but develop gradually (Skinner 1981, 1984h, f; Foxall 1990, 2005). A range of behaviours from small changes to original and novel behaviours may emerge from a process called *shaping* (Foxall 2005; Cooper *et al.* 2007). Shaping is defined as the “process of systematically and differentially reinforcing successive approximations to a terminal behaviour” (Cooper *et al.* 2007, p. 421). This terminal, end-product, or target behaviour is claimed to have been achieved when its topography, frequency or one of the other properties of behaviour has reached a reinforcement criterion that has been predetermined (Cooper *et al.* 2007, p. 421)¹³⁶.

Shaping involves two procedures: differential reinforcement and successive approximations. *Differential reinforcement* is defined as the “procedure in which reinforcement is provided for responses that share a predetermined dimension or quality and in which reinforcement is withheld for responses that do not demonstrate this quality” (Cooper *et al.* 2007, p. 421). The effects of differential reinforcement, therefore, are that reinforced responses occur more frequently while responses that are not reinforced are

¹³⁵ The gravest problem arises if rules do not change as the environment changes (Skinner 1966b, 1969, 1971, 1984d). Rule governed behaviour, therefore, runs the risk of being insensitive to prevailing contingencies (Catania 1984) and of giving rise to inertia as a feature of patterns of behaviour compliant to the non-adapted rules. Further, it should be noted that even when a person engages in private thought or ‘conjures’ up an innovative solution to a problem (expressed in behavioural terms), the control that private verbal stimuli exert is ultimately derived from the contingencies of reinforcement external to the individual (e.g., Foxall 1996a, 1999c). In his explanation, Skinner describes and emphasises stable and recurring patterns of behaviour. Although not explicitly formulated in terms of *variation*, Skinner does indirectly address changes in behaviour and novelty through the formulation of rules and problem solving. His emphasis, however, remains on recurring behaviour and underlying learning processes.

¹³⁶ *Target behaviours* may be defined as operants that experiments are designed to impart among individual subjects.

extinguished. Differential reinforcement produces a *novel* response class of behaviour¹³⁷. This class is composed of behaviours that share properties of the subclass that has been previously reinforced. For example: a mother differentially reinforces her daughter by complying to the child's requests whenever these requests include "please" and does not comply if the child does not frame her requests politely. Once the new response class emerges differentially reinforced, the child would frame all her requests politely. In this simple example, the target behaviour was polite requests (Cooper *et al.* 2007).

Extinction does not result from punishment procedures but refers to the procedure that occurs "when reinforcement of a previously reinforced behaviour is discontinued [and, as] a result, the frequency of that behaviour decreases in future" gradually or immediately (Cooper *et al.* 2007, p. 457). Extinction is thus maintained through either positive or negative reinforcement contingencies (Cooper *et al.* 2007).

In conclusion, behavioural modification also involves antecedent interventions (by manipulating antecedent environmental events) rather than just arranging consequences in the shaping procedures just described (Cooper *et al.* 2007).

A. The Criterion of Reinforcement

The *criterion for reinforcement* is operationally defined as the set of environmentally imposed conditions or requirements that behaviour must satisfy to some degree in order to produce reinforcement. The criterion is a yardstick against which performance is evaluated.

In the afore-mentioned differential reinforcement example, the emission by the child of the utterance "please" following a request for an object is reinforced by the mother's compliance. Compliance (the reinforcing consequence) is a function of the politely framed utterance (the reinforcing criterion). Behaviour that roughly matches the reinforcement criterion is rewarded (i.e., positively selected and survive within the repertoire of the

¹³⁷ Shaping is about learning new behaviours rather than habit formation (Foxall 1990).

individual). Behaviour, therefore, is either adapted or maladapted to satisfying environmentally imposed conditions.

In effective differential reinforcement, the responses in the individual's repertoire that either share some property (e.g., topography) with or are required for accomplishing the target behaviour are reinforced. As the reinforced responses occur more frequently, the reinforcement criterion is shifted to reinforce those responses that resemble the target behaviour more closely. "The gradually changing criterion for reinforcement during shaping results in a succession of new response classes, *successive approximations*, each one closer in form to the terminal behaviour than the response class it replaces" (Blackman 1974; Cooper *et al.* 2007, p. 422).

The criterion for reinforcement is important because there is sufficient similarity between this experimental standard and the notion of the *selective criterion* in socio-cultural evolution to draw a useful analogy between the two. The selective criterion is an integral part of socio-cultural evolution and refers to the requirements that the entity being selected must satisfy in varying degrees to be retained and, hence, continue and survive (Campbell 1969; Aldrich 1979; Van Parijs 1981; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010)¹³⁸.

3.2.9 Learning History

The learning history of the individual is an important dimension of behaviourist explanation. Although Skinner does not define the concept formally, it is ever present in the range of publications examined as the accumulated history of reinforcement and punishment of an individual.

Within the BPM, the definition of learning history is more explicit and accounts for the single most important representation of the individual therein

¹³⁸ See also Section 3.3 and Appendix 3, Sections A3.3.1B and A3.5.

(Foxall 1994, 2010b)¹³⁹. Learning history is operationalized as the cumulative “sum total of ... emitted behaviours and their consequences under particular conditions ... learning history summarises the cumulative contingencies of reinforcement and punishment under which the individual ... has previously behaved” (Foxall 1997b, p. 58). Most importantly, learning history represents ‘habit’ or the potential for the continuity of behaviour within sufficiently similar behaviour settings (Foxall 1993b, 1997b, 2010b). Repeated interaction with the environment modifies the learning history of the individual altering the probability of similar emissions being repeated in future (e.g., Foxall 1992a, 2010b)¹⁴⁰.

3.3 Selection by Consequences: the Natural Selection-Operant Conditioning Analogy

The preceding section established the basic operant principles required as an essential background to appreciating and evaluating Skinner’s socio-cultural analogy. Attention now turns to Selection by Consequences. Skinner’s socio-cultural analogy may be roughly conceptualised as an evolutionary framework with underlying principles (expressed in Selection by Consequences and relevant publications) that answers the question: “how do cultures and their practices evolve?” The purpose of this section is to identify and detail the key components of Skinner’s (1981) framework and to establish Skinner’s answer to the question. The examination along these two themes allows the development of a set of research propositions to apply in the research, the operationalization of Skinner’s key arguments, and the extent to which additional arguments may be needed from evolutionary economics.

In identifying Skinner’s socio-cultural evolution analogy for the purposes of operationalization and application to firm behaviour, Selection by Consequences, as described in Skinner (1981), does not provide a single

¹³⁹ In Chapter 2 (Section 2.2), learning history was characterised as providing the subjective meaning of behaviour (the uniqueness of a given individual) because it provides the basis for establishing the reasons why a person behaves in a certain way within a particular context of behaviour. Chapter 4 (Section 4.2.2) explains and elaborates the role learning history plays as a variable within the BPM in application to consumer behaviour. Chapter 4 (Section 4.3.1A) applies the concept in relation to the individual firm.

¹⁴⁰ A key point that shall be explained in Sections 3.3 and 3.4 is Skinner’s claim that individuals do not store information about their learning experiences; rather they are changed by reinforcement and punishment contingencies (Skinner 1974, 1981, 1984f, g, e, 1985).

stand-alone source from which to draw a comprehensive understanding of his thinking¹⁴¹. For example, important dimensions of the analogy discussed in earlier work (e.g., Skinner 1969, 1971) appear underemphasised, implicit, or missing from the 1981 publication. This section, therefore, contributes by synthesising and bringing to bear Skinner's earlier and later publications and the relevant criticisms to Skinner (1981) in Catania and Harnad (1984, 1988) within a single locus and offer a complete answer to how Skinner conceptualised socio-cultural evolution¹⁴².

Section 3.3.1 examines the key components of Skinner's socio-cultural evolution analogy while Section 3.3.2 provides Skinner's answer to *how* cultural practices evolve.

¹⁴¹ Contrast Skinner's broad and incomplete treatment of the subject matter in *Selection by Consequences* (Skinner 1981) to Donald T Campbell's (1965, 1969) more focused and detailed framework. Barlow (1984) makes a similar observation arguing that the treatment of the subject of socio-cultural evolution by Skinner (1981) is not as "sophisticated" as that found in Campbell's work (p. 482).

¹⁴² Appendix A3.3 establishes the warrant for this claim detailing the problems motivating the reconstruction as a first step to applying Skinner's analogy in research. The criticism generated in the appendix should also be viewed in the light of the criticisms of incompleteness and vacuity drawn in Chapter 1, Section 1.2.1. It is also important to note that in later publications, namely (Skinner 1984b, 1986, 1989a, b), Skinner adds minor details to his perspective on socio-cultural evolution. Unfortunately, Skinner fails to integrate the various contributions made on the subject by his critics (see Catania and Harnad 1984, 1988) in this later body of work.

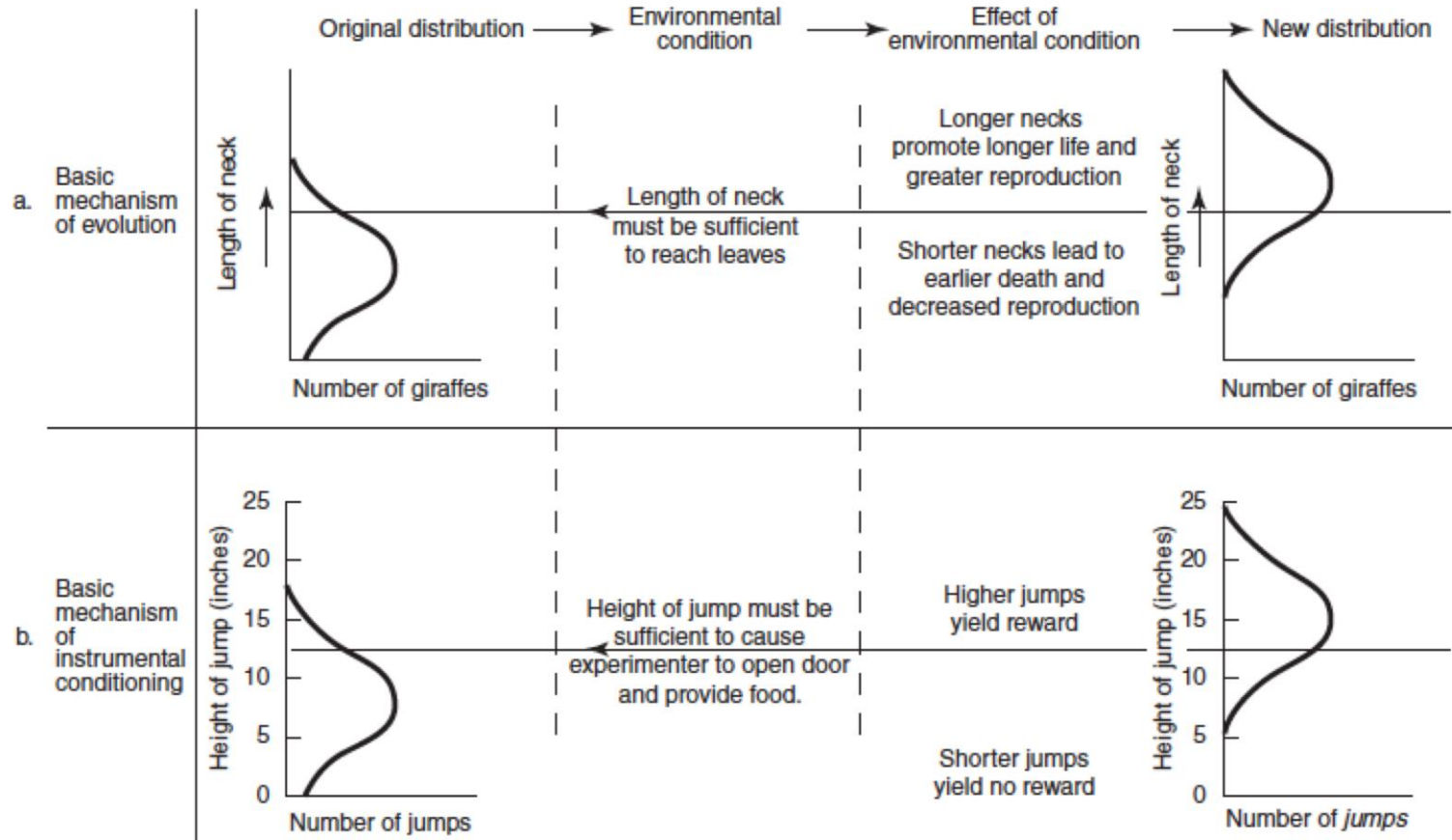
3.3.1 Key Components of Selection by Consequences

The phrase “selection by consequences” was coined and used by Skinner (1981) to refer to a meta-principle or “causal mode” incorporating two analogous mechanisms: (a) the mechanism of natural selection in biological evolution, and, (b) the mechanisms that contribute to the acquisition, continuity and discontinuity of the behaviour of an individual during his lifetime and to the acquisition, continuity and discontinuity of socio-cultural practices. More specifically, reinforcement and punishment, as the procedures underlying operant conditioning, characterise both the processes of human learning within a single lifetime (Figure 21) and the natural selection dynamics in socio-cultural evolution (Skinner 1953, 1969, 1971, 1973, 1974, 1978, 1981, 1984h) over generations¹⁴³. As Skinner repeatedly claimed, “*no new* behavioural processes are involved” in the evolution of cultural practices (Skinner 1961b; 1984b, p. 221; 1984f, p. 718; 1984h, p. 504).

Thus, the first central component of Skinner’s analogy is that operant conditioning provides a sufficient basis for developing an explanation of socio-cultural evolution by processes analogous to biological natural selection (Skinner 1984b, f, h).

¹⁴³ See also Hallpike (1984) who states that Selection by Consequences runs the risk of being “a combination of the trivial and the profoundly misleading” (p. 490). Also refer to Campbell (1984a) who discusses why the term “selection by consequences” is misleading, and, to Plotkin and Odling-Smee (1984) as another example of researchers who take issue with Skinner’s presentation.

Figure 21 – Individual Learning as a Selection Process



Source: Blute (2010, p. 143): The basic mechanism of evolution compared with the basic mechanism of operant conditioning. The two examples used are (a) the natural selection of long necked giraffes, and, (b) an experiment with a jumping cat.

The second central component of Skinner's evolutionary analogy is the emphasis placed on the environment in regulating and modifying human behaviour instead of on the individual himself as the creative, autonomous, and initiating agent¹⁴⁴. In Skinner's evolutionary account, the environment (i.e., physical and social contingencies) functions as the initiating agent and selects the biological endowment of the species, individual behaviour, and group cultural practices (Skinner 1981). The individual is the locus where the environment operates and, therefore, the behaviour of individuals is the joint result of: (a) "contingencies of survival" that are responsible for human genetic endowment. These contingencies have led to the evolution of operant conditioning processes that provide a significant degree of flexibility to humans in relation to dynamic and complex environments. Importantly, human behaviour is generally susceptible to conditioning by reinforcement (Skinner 1981)¹⁴⁵. Equally important is the emergence of social and verbal behaviour among humans (Skinner 1966c, 1973, 1978, 1981, 1984b, h, e, 1986, 1989a). (b) "Contingencies of reinforcement" and punishment responsible for repertoires acquired and maintained by individuals during lifetime of learning (Skinner 1981). (c) The "cultural contingencies" that shape and maintain the behaviour of individual members of cultural groups (Skinner 1953, 1961b, 1966a, 1969, 1971, 1981, 1984h, f, 1989b). Therefore, "the origin and transmission of a cultural practice are ... plausibly explained as the joint product of natural selection and operant conditioning" (Skinner 1989b, p. 117; Skinner 1981). Thus, these three dimensions may be considered as separate but deeply interwoven levels of analysis and situational influences on any individual's behaviour.

The third principal component is the idea that the EAB procedures of shaping, maintenance, weakening, and extinction of behaviour either through direct exposure to environmental contingencies or through rules summarising contingencies are sufficient to describe how cultural practices are acquired,

¹⁴⁴ See also Skinner (1953, 1969, 1971, 1974) for additional explanations by Skinner on these last dimensions.

¹⁴⁵ Individual behaviour is *assumed* to have an innate susceptibility to reinforcement. However, the biological inheritance of the individual does not comprise specific instances of operants (Skinner 1981; Alhadeff 1982; Skinner 1984b). On the other hand, however, human behaviour is generally susceptible to particular reinforcers and punishers such as sweetness and saltiness (Skinner 1973, 1978). See also Skinner (1974).

continued, or discontinued within the lifetime of a single individual and over several generations of practitioners (e.g., Skinner 1981, 1984b, f, 1986, 1989b)¹⁴⁶. That is, these processes describe the dynamics through which cultural practices are selectively retained, eliminated, transmitted, and replicated among members of a cultural grouping during the lifetime of the individual and across generations. And, environmental factors are responsible for the regulation and modification of individual behaviour and cultural practices through these processes¹⁴⁷. Socially-mediated reinforcement and punishment contingencies facilitate the transmission of new and existing cultural practices, i.e., practices are replicated and retained through verbal behaviour via rules that describe the contingencies or specify injunctions (e.g., laws) (Skinner 1966b, 1969, 1971, 1981, 1984b, f, d, 1986, 1989b). These contingencies interact with the physical environment (Skinner 1961b, 1966b, 1969, 1971, 1984d, h).

Additional dimensions to Skinner's analogy include: Cultural practices seem to constitute the unit of selection at the cultural level of analysis (Skinner

¹⁴⁶ According to Skinner (1966c, 1981, 1984b, 1984f, 1986, 1989b), behaviour is also acquired through observation, imitation, and modelling processes. Imitation carries similar meaning to the everyday use of the word. Skinner (1989b) defines modelling as "a way of showing another organism what to do. It primes [either verbally and non-verbally] behaviour in the sense of evoking it for the first time and thus exposing it to potential contingencies of reinforcement" (p. 116). Given the detail of the evidence in the Commission reports, it does not seem likely that a clear distinction between say observation, imitation and modelling on the one hand and the other processes of regulation and modification (e.g., shaping) may be established in all cases. At the cultural level of analysis, Skinner (1981, 1984b, 1984f, 1986, 1989b) claims that observation, imitation, and modelling are less effective than shaping in the acquisition and the transmission of cultural practices. Imitation and modelling, for example, only award the imitator with an already existing repertoire – that of the individual being imitated: operant shaping prepares individuals for a far greater flexible and broad behavioural repertoire (e.g., Skinner 1984b, 1986; Skinner 1989b). The emergence of verbal and social behaviour and transmission via rules instead of modelling and imitation are important features that allowed the evolution of human individual and cultural behaviour (Skinner 1981, 1984f). And, cultural groups whose behaviour is rule governed are less efficient than those whose behaviour is shaped by direct exposure to the contingencies (Skinner 1984f). On the other hand, rules are learnt more rapidly than the contingency-shaped behaviour specified therein (e.g., Skinner 1966b, 1969; 1974, p. 138; 1984d). For the purposes of this research, therefore, observation, imitation, and modelling are ignored unless there is clear and compelling evidence of such processes. Refer to Chapter 18 of Cooper *et al.* (2007) for processes involved in imitation and modelling.

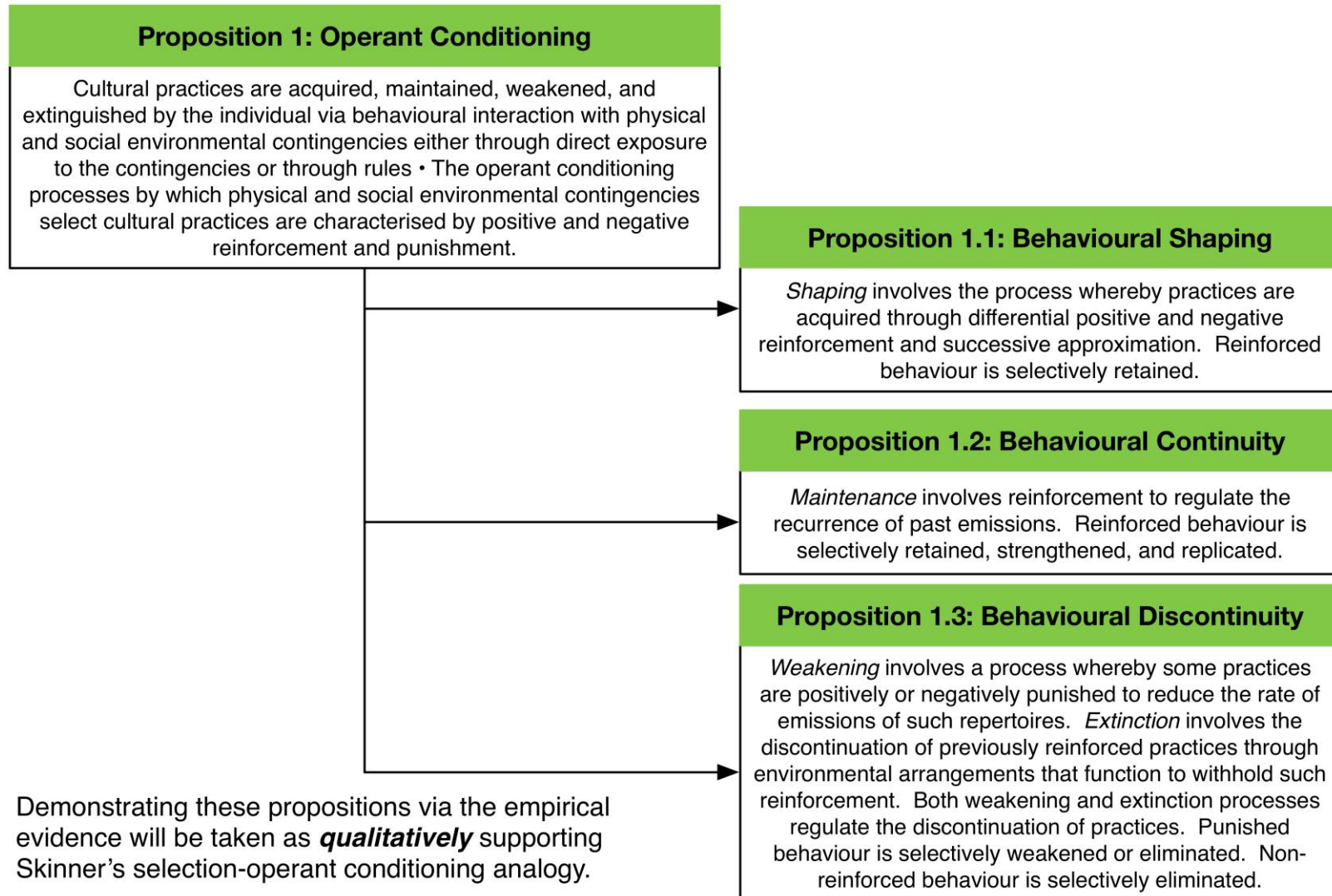
¹⁴⁷ Underlying these inferences is the analogy that Skinner draws between the operant laboratories and the cultural environment: Skinner (1971), for example, draws strict parallels between a cultural environment and the experimental space to characterise both as "sets of contingencies of reinforcement" and claiming that "designing a culture is like designing an experiment" (Skinner 1971, p. 150) since "the difference between contrived and natural conditions is not a serious one" (Skinner 1971, p. 156). Over his publications Skinner uses this parallel to elaborate on how the environment operates on individual behaviour and cultural practices. Although Skinner (1971) does admit that interpreting real world based on generalisations from an experimental science generates oversimplification, he does not go beyond to address the methodological implications of such a practice.

1984h)¹⁴⁸. Cultural practices originate in the behavioural *problem solving* interactions of individuals with their selective physical (Skinner 1961b, 1966b, 1969, 1971, 1984d, h) and social environments (Skinner 1961b, 1966b, 1969, 1971, 1981, 1984d, h) during individual lifetimes, i.e., during a single generation. The effectiveness of behaviour and cultural practices in contributing solutions to the environmental problems faced by the individual and by the group respectively are central to Skinner's account – behaviour-environment interactions define the *selecting consequences* (Skinner 1981; Catania 1984; Dawkins 1984; Skinner 1984h). Certain behaviours and practices have environmental consequences that confer advantage in relation to the idiosyncrasies of a specific environment. The idiosyncrasies are represented in the EAB as reinforcement conditions or criteria. The replication of such practices among members of a cultural group is positively related to the extent to which these practices are effective on the aggregate in solving the environmental problems encountered by the group. As a result, the adoption of the practice survives or declines (Catania 1984; Skinner 1984h, f). The outcome of selection is survival success and differential reproduction of the species, the continuity of an individual's repertoire of behaviour (via retention and replication by the individual) during his or her lifetime (Skinner 1981; Staddon 1984), and, the continuity of a set of recurring and stable practices within a particular cultural grouping via individual and social retention and replication (Skinner 1981; Catania 1984; Dawkins 1984; Skinner 1984h).

In summary, at the cultural level of analysis, Selection by Consequences may be described as a broad-brush framework fashioned on Darwinian natural selection for characterising cumulative socio-cultural change within the lineages of behaviour-environment relations. Operant conditioning and related processes bring about these changes. Figure 22 presents the central research propositions that govern the research.

¹⁴⁸ Section 3.3.2B and Section 3.4.3B discuss this in greater detail.

Figure 22 – First Set of Central Research Propositions Capturing the Core Dimensions of Skinner’s Socio-Cultural Evolution Analogy



3.3.2 The Evolution of Cultural Practices

Given the central dimensions of Selection by Consequences, the discussion now turns to Skinner's answer to the question "how do cultures and their practices evolve?" To answer this question, however, it is important to define the agent of selection (the socio-cultural environment) and what appears to be Skinner's unit of selection (cultural practices).

A. The Socio-Cultural Environment: the Agent of Selection

Skinner defines the term culture with reference to the social environment (Skinner 1969, 1971, 1974, 1984h, f, 1989b, a), that is, with reference to the reinforcement and punishment contingencies that (a) are maintained by a cultural grouping and (b) are the central influences in the formation of the repertoires of new members to the group (Skinner 1961b, 1969, 1974, 1984h, b, 1989b, a)¹⁴⁹. Socio-cultural contingencies, i.e., all external situational variables arranged and mediated by peers through social interaction, regulate, and modify individual behaviour in conjunction with the contingencies characterising the physical environment (e.g., Skinner 1961b, 1966b, 1969, 1971; Skinner 1974, 1984d, h)¹⁵⁰.

B. Cultural Repertoires, Practices, and Traits: the Unit of Selection

In contrast to the clarity in defining the social environment as the selective agent, Skinner is inconsistent and relatively ambiguous in how he defines and describes what is being selected.

Skinner uses the term "cultural practices" extensively in his work (e.g., Skinner 1953, 1961b, 1966a, 1969, 1971, 1978) but does not define it. In these

¹⁴⁹ See Skinner (1984h) in reply to Harris (1984).

¹⁵⁰ Examples of social arrangements include a wide range of mediating entities: the family, governments, the education system, religious agencies, economic institutions, government, the law, and other forms of social organisation (Skinner 1953, 1961b, 1971, 1989b). Skinner conceptualises organisations and institutions in terms of antecedent social contingencies with regulatory dimension (see in particular Catania 1984, p. 716; Hallpike 1984; Skinner 1984f, p. 719). The rules defining the regulatory dimension of organisations and institutions may be implicit or explicit and formal or informal and their survival (i.e., retention and replication for continuity) results in their net reinforcing effects on compliant behaviour (e.g., Skinner 1961b). In Chapter 4 (see Section 4.3.2C), markets are defined as institutional contingencies with regulatory dimension.

publications, cultural practices appear to encompass a very broad range of associated phenomena from such physical technologies as refrigeration to different forms of government, employment, and educational practices. Skinner, therefore, does not appear to feel the need for differentiating between technology that resolves a physical problem (prevent spoilage of food through refrigeration) and a social one (currency and literal exchange as an enabler of trade). Further, he seems to use the terms “cultural practices” and the “repertoire” of the cultural grouping interchangeably.

In reply to Dawkins (1984), for example, Skinner (1984h) refers to cultural practices as variations: “better ways of hunting, gathering, growing, making tools and so on” (p. 504). This confounds matters since evolutionary explanations must distinguish the unit of selection and between the stability and variation to identify and characterise the rules that regulate for relative stability (the genotype) and the actual variations (the phenotype) that emerge from the interaction of these rules with prevailing environmental conditions¹⁵¹.

Skinner (1974, 1989b) also describes cultural practices as characteristics of a culture likening practices to the features or traits of individuals, for example, eyes, wings, and hearts (Skinner 1984h, f). Such a characterisation creates further confusion to the extent that several authors (e.g., Barkow 1984; Barlow 1984; Dawkins 1984; Donahoe 1984; Gamble 1984; Hailman 1984; Hallpike 1984; Harris 1984; Hogan 1984; Maynard Smith 1984; Stearns 1984) interpret Selection by Consequences as implying *group* rather than *individual selection*¹⁵².

In summary, therefore, Skinner’s inconsistency and lack of clarity creates a degree of confusion because in his account cultural practices are group behaviours, traits, or properties of the set of recurring and stable aggregate

¹⁵¹ This point is discussed in further detail in Section 3.4.3B.

¹⁵² Appendix A3.4 expands on this point to argue that the authors are correct in interpreting Skinner’s ambiguous exposition as implying group selection. However, Skinner’s account is *not* one of group selection: like Darwinian natural selection, Skinner’s analogy is based on selection operating on the individual rather than at the level of the group (Skinner 1961b, p. 536; 1984e, pp. 702, 705; 1984h, f): “I used phrases such as ‘survival of species’ and ‘advantage to the species,’ **carelessly**, perhaps, but scarcely ‘revealing [my] endorsement of group selection” (Skinner 1984e, p. 705, emphasis added).

behaviours of individuals within a particular group, and, they are also stable repertoires and variations thereof.

To clarify Skinner's position, the following interpretation is made. At the individual level of analysis, the *behavioural repertoire* is the highest level of organisation of an individual's set of recurring and stable behaviour (i.e., of operants)¹⁵³. At the cultural level, and in keeping with the methodological individualist philosophy of Skinner, cultural practices refer to the combined or aggregate classes of operant behaviour by members of a cultural grouping. In other words, cultural practices are to the group what operants are to the individual. *Behaviour* refers to operants at the individual level of analysis and the term *practices* refers to aggregate operants at the cultural level of analysis¹⁵⁴. Cultural practices originate from individuals (Skinner 1981). The *cultural repertoire* or *repertoire of cultural practices* is defined as the highest level of organisation of the set of recurring and stable practices of individual members to a cultural grouping.

Tentatively, since behaviour is the dependent variable and unit of selection in individual learning, it would follow that cultural practices would be the equivalent group level construct¹⁵⁵.

¹⁵³ This follows the clarification made by Hull *et al.* (2001, p. 522) who define an *operant repertoire* as comprising a set of interrelated lineages of behaviour. Each lineage originates at different times during the individual's lifetime and reflects a specific history of reinforcement and punishment due to interaction with specific environmental contingencies. The various lineages are inter-related each having the possibility of impacting other lineages within the repertoire. The complexity of a repertoire grows in terms of the number of operant lineages it carries, how the various component lineages interact with each other, and, the temporal and spatial relations among them (Hull *et al.* 2001). Populated by operants, each lineage has historically performed specific functions facilitating the individual's interchange with the environment over space and time. Also, as specified earlier, behaviour may be said to hold variety of quantitative and qualitative properties including frequency and topography (Cooper *et al.* 2007).

¹⁵⁴ Such a distinction is made following that made within evolutionary economics between recurring patterns of behaviour, i.e., habits, at the individual level, and group recurring patterns, i.e., routines, at the organisational level of analysis (Becker 2001; Hodgson 2003; Becker 2004, 2005, 2007; Hodgson 2008, 2009a, b; Hodgson and Knudsen 2010). See also Appendix 1, Section A1.1.

¹⁵⁵ The clarification just made has implications with respect to clarifying (a) the outcome of the selection process in terms of what is being selected, and, (b) the causal relevance of the consequences or effects of the properties or traits of a given practice to their presence in what is being selected. Suffice it to say that the way in which Skinner's analogy is presented (see especially Skinner (1981) and Skinner (1984h)) implies no conceptual difference between the object of selection (cultural practices) and the advantage conferring properties for which these cultural practices are selected (Catania 1984; Dawkins 1984). All these points are further discussed in Section 3.4.4 wherein the further clarifications on the unit of selection are made.

C. The Evolution of Cultural Practices: A Case of Individual Selection

Having defined the agent of selection (the socio-cultural environment) and the probable unit of selection (cultural practices) in Skinner's analogy, the discussion now turns to his answer to the question, "how do cultures and their practices evolve?"

Stable Practices

During the lifetime of the individual, practices are acquired, maintained, weakened, and extinguished via reinforcement and punishment within a broad social and physical context (Skinner 1961b; 1969, p. 13; 1974; 1984h, p. 506; 1984b; 1989b, p. 52; 1989a). The continual interaction with the environment shapes the learning history of the individual. As rules, prevailing cultural contingencies describe and/or prescribe the occasion for the practice to be emitted, the emission itself, and the reinforcement and/or punishment contingent upon such emission. Complying with cultural contingencies and adopting existing practices is characterised as following existing rules or rule-governed behaviour. All other things being equal, stable practices are retained since these are relatively adapted to the prevailing contingencies or fail to change as the environment changes (Skinner 1966b, 1969, 1971, 1984d) or variations therein fail to appear or make the grade (Skinner 1981). In any case, stability reflects a relative degree of regularity in behavioural emissions that may be characterised as routine. In this sense, the rules appear to **routinize behaviour** and members of a cultural grouping behave in similar fashion most of the time and across generations.

Variation

In Skinner's account the evolution of cultural practices starts during the lifetime of an individual (Skinner 1981) who, in the course of interacting with her environment, may be confronted by physical or social contingencies not sufficiently similar to the past or are somehow incongruent with established

prescriptions and descriptions for action¹⁵⁶. Thus, the environment sets the occasion for variation (Skinner 1981).

The process of variation is usually a gradual process of environmental shaping: “When a currently adaptive feature is presumably too complex to have occurred in its present form as a single variation, it is usually explained as the product of a sequence of simpler variations, each with its own survival value” (Skinner 1981, p. 502). Therefore, over time, a sequence of behaviours is emitted which ultimately terminates in the resolution of the conditions imposed by the environment; i.e., the problem is resolved when behaviour is appropriate for or satisfies the prevailing contingencies (Skinner 1966b, 1969, 1984d). Therefore, behaviour is acquired through a process of shaping and involves differential reinforcement and successive approximation procedures (Skinner 1981)¹⁵⁷.

Consequences, described in terms of the effectiveness of behaviour in contributing to the resolution of the prevailing contingencies (in terms of the reinforcement criterion), reward behaviour while other consequences (those which do not effectively resolve the contingencies) penalise the behaviour that generated them (Skinner 1981) or, as is the case of differential reinforcement, do not produce reward.

Skinner (1981) uses the example of “a better way of making a tool, growing food, or teaching a child” as behavioural variations and “the tool, the food, a useful helper” are the rewarding consequences (p. 502). These behaviours enhance the effectiveness of the individual in dealing with her environment, i.e., in contributing to the more effective resolution of dynamic and complex social and physical contingencies. By corollary, behaviours that do not satisfy prevailing contingencies are either not reinforced (as a result of differential reinforcement processes) or penalised and, consequently, filtered out or selectively eliminated, at least, temporarily. Given the individual’s

¹⁵⁶ Ultimately the most effective means of reinforcement learning is through a direct exposure to the contingencies (see Section 3.2.7).

¹⁵⁷ The Skinnerian analogy does not explicitly account for constraints on the range of variations possible, for example, those constraints arising from the cognitive (biological) limitations of humans (Maynard Smith 1984; Provine 1984; Stearns 1984). On differential reinforcement and successive approximations, see Section 3.2.8.

biological endowment (the susceptibility to reinforcement learning) and a history of learning, in sufficiently similar settings, rewarded behaviours recur. Positively and negatively “reinforced behaviour is ‘transmitted’ [from generation to generation] only in the sense of remaining part of the repertoire of the individual” (Skinner 1981, p. 502).

The Environment and Reinforcement Criteria

Skinner’s generic account of emissions contributing to the effectiveness of behaviour in resolving environmental problems is interpreted as implying an appeal to the reinforcement criterion.

Specific problems, for example, quick and inexpensive transport across great distances or managing a profitable business, require the identification of the related specific criteria, which behaviours must satisfy in varying degrees (and hence may be retrospectively described as adapted or otherwise) to produce reinforcement. Elaborating on Skinner’s (1981) tool-making example and only as a means of illustration, the invention of the automobile may have originally satisfied the criterion of ‘quick and inexpensive horseless transport across great distances’ and reinforced the use of cars as a means of transport instead of a carriage. However, daily driving experiences and the diffusion of the automobile result in additional reinforcers (e.g., speed) and unexpected punishing consequences (e.g., traffic and pollution). In this sense, although the basic criterion remains intact, the associated behaviours and diffused practices produce consequences that introduce further complexity. These cumulative changes are reflected in a reinforcement criterion that is increasingly more complex and continually shifting. Socio-economic contingencies introduce a further dimension to complexity: as driving becomes more diffused within a group, different segments may reveal differentiated reinforcement criteria. In the automobile market, different segments (e.g., family sedans, eco-friendly, high performance) and brands (VW Beetle, VW Polo, Aston Martin) may be observed¹⁵⁸. As Hodgson and Knudsen (2010) argue, the interaction among suppliers, customers and rivals lead to important changes in the environment that, in turn, cause changes in the selective criteria through space and time.

¹⁵⁸ See also the comments of Hallpike (1984) and the reply by Skinner (1984h) on the complexity of selecting contingencies.

For example, during recession one vital selection criterion that regulates the behaviour of firms is credit. In contrast, during economic growth, this criterion recedes in priority paving way for other important conditions (Hodgson and Knudsen 2010).

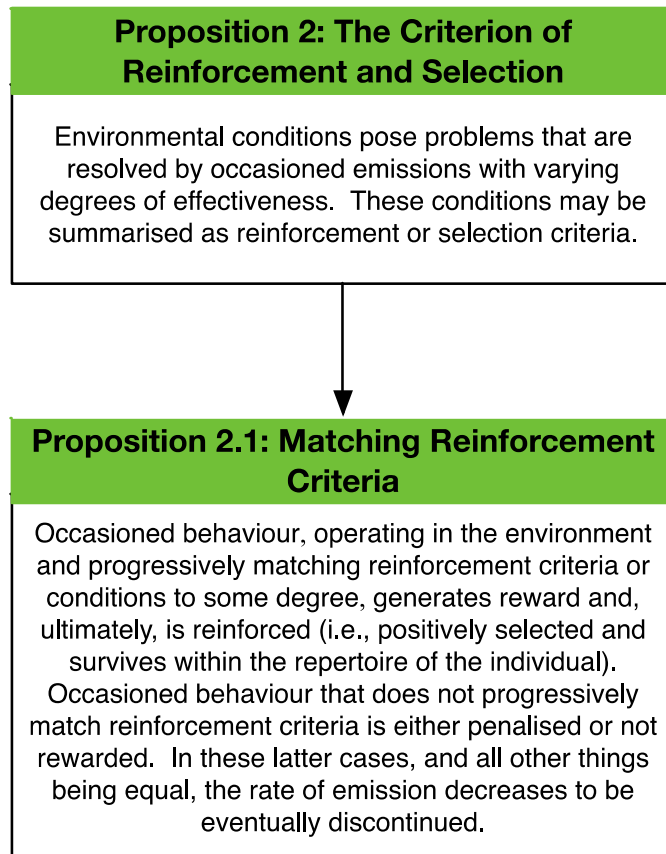
Within Skinner's view, it is in this sense that the environment *shapes* the behaviour of the individual, regulating and modifying her emissions. Consequences select for behaviour appropriate to satisfying the prevailing contingencies and filter out behaviour that does not satisfy the contingencies. Repertoires are acquired since some of the previously learnt responses are not appropriate to the prevailing conditions. Other behaviours are maintained because environmental contingencies are not sufficiently altered to set the occasion for problem solving. "The environment selects [for] behaviour" and is thus responsible for the "evolution of the species and for the repertoire acquired by each member" (Skinner 1985, p. 291). Stability is brought about because, all other things being equal, the integrity of previously learnt contingency relations is not upset in any appreciable way by prevailing conditions¹⁵⁹. In Skinner's view, problem solving contributes to the survival of the individual's repertoire (Skinner 1981, 1984h)¹⁶⁰.

Therefore, the following proposition requires investigation (Figure 23).

¹⁵⁹ Hallpike (1984) among others provides an interesting critique of Skinner's (1981) relatively poor characterization of stability and change.

¹⁶⁰ The term "survival" here is interpreted in relation to the continuity of behaviour or practice within the individual's and the group's respective repertoires in interaction with prevailing contingencies. Reinforced behaviours and practices are retained because of the contribution of particular behaviours, at the individual level, and practices, at the cultural level, to the effectiveness in solving the problems posed by dynamic and complex physical and social contingencies (i.e., in relation to the criterion of reinforcement). In this sense, behaviours and practices hold survival value and confer advantage relative to other behaviours and practices in respect to the reinforcement criterion.

Figure 23 – Research Propositions Capturing the Criterion of Reinforcement (Selection Criterion)



Retention and Inheritance: Transmission, and Diffusion

Contingencies *change* the individual; information on the contingencies is not stored or retained in memory for later use (Skinner 1966c, 1971, 1974, 1981; Catania and Harnad 1984; Delprato and Midgely 1992) even though individuals may indeed extract rules about existing and prevailing contingencies. Reinforced practices recur throughout the lifetime of the individual whereas the rate of emissions of non-reinforced or punished repertoires declines and eventually disappears. Thus, learning history ensures retention and heredity of certain practices during the lifetime of the individual. In Skinner’s account, therefore, learning history appears to function as a mechanism for retention and inheritance.

Whereas the storage metaphor is rejected at the level of the individual, it is adequate for the cultural level of analysis, for example, codified rules and laws or instruction manuals (Skinner 1981, 1984h). The term “learning history” in reference to cultural groupings implies these physical products and formal/informal plus codified/verbal rules.

Shaping through verbal behaviour is an important means to securing the differential replication of repertoires acquired by an individual among others within and across generations. Solutions that contribute to the survival of an individual¹⁶¹ are transmitted (replicated) to others and diffuse across the members of the culture (Skinner 1981, 1984h). Once a novel practice is introduced, however, “we must wait for selection to occur” (Skinner 1981, p. 504).

Replication Across Individuals Within a Group

What processes are involved for practices to result in differential retention and replication through environmental interaction? According to Hallpike (1984), Skinner (1981) does not tackle this question very clearly. Earlier accounts, particularly the ones surrounding problem solving and rules (e.g., Skinner 1961b, 1966b, a, 1969, 1971, 1973, 1974, 1978, 1989b), suggest that Skinner envisages an individual interacting with her social environment and communicating her solution to her peers via a rule (either by describing the contingencies or by imposing them). Alternatively, the resolution may reside in the environment without being communicated (for example, an artefact such as a hammer)¹⁶². In any case, rules and the artefacts of the original solution, either as verbal or non-verbal stimulus events, acquire discriminative or motivational function (Hogan 1984; Skinner 1984e, p. 705)¹⁶³ given learning histories. In their own problem solving emissions, others may come across the solution and follow the prescriptions and descriptions embodied in existing alternative practices or adopt the new practice or reject both and develop their own competing solutions.

It seems that Skinner envisaged the socio-cultural environment to be populated by a set of heterogeneous practices residing in parallel at any single

¹⁶¹ The assumption underlying this seems to be a conviction that “a person acts upon the environment, and what he achieves is essential to his survival and the survival of the species” (Skinner 1974, p. 210; 1984e, p. 705; 1989b) albeit indirectly (Skinner 1984h) or as an aggregate effect (Skinner 1984h, f).

¹⁶² Written instructions for the construction of a tool are considered as an instance verbal behaviour.

¹⁶³ Skinner (1984e, p. 705) in reply to (Hogan 1984) who points towards the importance of motivational variables. Unfortunately Skinner’s response in relation to Hogan’s comment on this issue is very terse.

instance (Skinner 1971, 1974). Any single practice could be inconsistent or in competition with existing practices (Skinner 1974, 1981)¹⁶⁴ and, not necessarily reflect the same degree of adaptation in relation to the conditions set by the environment. Thus, maladapted and adapted practices often reside concurrently in the environment (Skinner 1971)¹⁶⁵. Each solution either reinforces or punishes (in varying degrees) the behaviour of respective practitioners thereby, on the aggregate, contributing positively or negatively to the effectiveness in solving the problems of a number of individuals within a cultural grouping.

Skinner's account provides the mechanism for retention and transmission (i.e., reproduction (Skinner 1984h, p. 504)¹⁶⁶ or replication or the production of copies (Dawkins 1984)) during the lifetime of an individual and for diffusion occurring within and across generations (Skinner 1984h). In evolutionary theory, fitness provides a measure for differential replication and shows the relative importance of a particular practice over others within a population of practices subject to similar selection factors¹⁶⁷. Skinner does not mention fitness within his account. However, the notion of fitness is implicit throughout. At the individual level of analysis, the discussion on operant conditioning implies that the "reproductive success" of certain patterns of behaviour over others is measured through increases (and decreases) in the rate of future emissions during someone's lifetime: "reinforced behaviour is 'transmitted' only in the sense of remaining part of the repertoire of the individual" (Skinner 1981, p. 502). The process of operant conditioning results in a repertoire comprising increasingly frequent behaviours which are functionally effective for the individual within a particular environment and corresponding contexts. Those behaviours that are less functionally effective decrease in their frequency of emission (Leslie 2002). Learning changes the individual. This accounts for retention and replication of behaviour by the

¹⁶⁴ That said, competition among individual practices may or may not always be involved (Skinner 1981).

¹⁶⁵ "Not every practice in a culture, or every trait in a species is adaptive, since non-adaptive practices and traits may be carried by adaptive ones, and cultures and species which are poorly adaptive may survive for a long time" (Skinner 1971, p. 128).

¹⁶⁶ Skinner (1984h) in response to Donahoe (1984) equates transmission to reproduction.

¹⁶⁷ See also Section 3.4.3A.

individual during her lifetime. Hence, the differential retention and replication of behaviours within an individual's repertoire implies fitness.

At the cultural level, retention and replication occur primarily through verbal and non-verbal shaping (and to a less efficient extent through observation, imitation and modelling) together with the retention within individual repertoires¹⁶⁸. Presumably, given a sufficient amount of time, certain single and competing solutions are retained, transmitted, and diffused to the extent that they are shared and come to regulate and modify the behaviour of a sufficiently large number of individuals within a cultural group across several generations. Several competing practices within a cultural group would have different rates of replication and retention, which result in different degrees of fitness.

Figure 24 – Research Propositions Aimed at Understanding Selection Outcomes as Predicated by Skinner's Analogy

Proposition 3: The Outcomes of Selection

The outcomes of selection are the differential retention and replication of cultural practices. Those behaviours/practices that are functionally effective to the individual in his or her interaction with the environment will recur and increase in frequency (they are retained) over space and time. Those that are less effective decrease in frequency. Within a single generation behaviours/practices exhibit fitness differences.

Existing practices and variations generate different reinforcement and punishment levels in terms of both quality and quantity reflecting the extent to which each satisfies prevailing reinforcement criteria. The richer the reinforcement schedule in terms of both quality and quantity, the greater the chances that associated practices have to survive and diffuse within the cultural grouping¹⁶⁹.

¹⁶⁸ See previous section and footnote 146 on page 117.

¹⁶⁹ The term schedule of reinforcement is used here to retain the strict Skinnerian interpretation. As stated in Chapter 2 (Section 2.3.6A), reference is made to *patterns* of reinforcement in real-world settings in contrast to *schedules* in laboratory environs (Foxall 1998b). Skinner does not make this distinction and always speaks in terms of schedules irrespective of whether he is explaining experimental or cultural settings.

As a new practice is adopted, consequences reinforce the behaviour of an increasing number of members of the culture within a single and across a number of generations. Stable practices denote that either variation has not appeared or variation has surfaced but has not been selected for by the prevailing cultural contingencies (Skinner 1981) or variation has been selected out or there have been impediments to replication and diffusion.

3.4 Blind Variation, Selective Retention and Inheritance-Replication

The preceding section discussed the core components of Skinner's socio-evolutionary analogy from his publications and from criticisms to Selection by Consequences. A number of constructs were identified including, for example, the *reinforcement criterion*. Although missing from Skinner's account, the reinforcement criterion is an integral part of the explanation when an analogy is drawn with the *selective criterion* in socio-cultural evolution. The selective criterion is crucial to explanations of socio-cultural evolution. Another construct unclear within the analogy is the *unit of selection* (the answer to the question, what is being selected?) Addressing the question is also very important because it leads to investigating why an entity of selective significance has been selectively retained or eliminated. Three research propositions were identified (Figure 22 to Figure 24). Demonstrating the main research proposition (Figure 22) within the empirical evidence will be taken as qualitatively supporting Skinner's selection-operant conditioning analogy.

This section critically appraises Selection by Consequences in the light of the generic VSI framework of socio-cultural evolution pointing out the areas wherein Skinner's conceptualisation is weak or incomplete. Additional research propositions and operational definitions are suggested. Section 3.4.1 recalls the definitions of evolution and natural selection made in Chapter 1. Section 3.4.2 defines the process and conditions of natural selection as generally understood within the VSI framework. Section 3.4.3 discusses the outcomes and objects of selection. Section 3.4.4 concludes that the three conditions for natural selection are present in Skinner's socio-cultural evolutionary analogy to varying degrees of detail, emphasis, and clarity. The critical appreciation

emerging from this discussion provides a blueprint for elaborating the SMC framework (Chapter 4) and conducting the operant interpretation of the Commission's report (Chapter 5).

Before addressing the substantive dimensions of the discussion, it is important to make a methodological note. Characterising socio-cultural evolutionary change through natural selection is not a trivial matter. Although researchers agree on the generic outlines of the framework applicable to economic evolutionary change the specific mechanisms and processes involved remain matters of debate and contention (e.g., Winter 1990; Hull *et al.* 2001; Metcalfe 2005; Witt 2008; Hodgson and Knudsen 2010). Within evolutionary economics, there are differing perspectives on what "evolutionary" specifically means (e.g., Hodgson 1994; Vromen 1995; Hodgson 1999; Witt 2003, 2008; Vromen 2012) and, some of these views are not necessarily commensurable (Witt 2008). In what follows, therefore, the definitions employed are simply points of reference from a vast literature on the subject. The conceptualisation is an essential starting point that incorporates the minimum necessary requirements for developing an evolutionary interpretation, and, thus, allows the assessment of Skinner's analogy for relative completeness before application in research.

Therefore, deriving a more comprehensive treatment of socio-cultural evolution within evolutionary economics highlighting the various debates therein is beyond the scope of the section. Debate and contentious issues (e.g., contrasting different definitions of selection, fitness and so on) are sidestepped in favour of a focus on operationalization. Complexity may be added at later stages after the Skinner's analogy has been empirically evaluated¹⁷⁰.

3.4.1 Evolution by Natural Selection

Evolution refers to an accumulation and a sequence of changes that affect the characteristics or traits of individuals or a population from one generation to the next (Van Parijs 1981; Endler 1986; Knudsen 2002; Ridley 2004). The research focuses exclusively on the changes in the distribution of

¹⁷⁰ This treatment is a result of the selected methodological strategy (see Chapter 1, Section 1.3.4 and Appendix A1.3).

certain patterns of practice and related traits within a single population of marketing repertoires over generations through the economic analogue of natural selection (i.e., on *micro-evolution*).

Natural selection is one of several mechanisms that bring about evolutionary change. Stated as a research proposition, natural selection may be described as follows: certain individuals within a particular population inhabiting and interacting within a specific environment may possess some characteristic trait that, on average, leads them to reproduce more offspring to the following generation than others within that environment. That is, there is variation on the characteristic among the individuals within some population tied to a particular environment. The environment is characterised by a limited set of resources that could sustain the population. In addition, the likelihood of reproductive success of the individual must be *causally dependent* on whether the trait is present or not. If the characteristic trait is heritable (that is, there is a *consistent* relationship between the parent and its offspring on that trait), then the presence of the characteristic will increase in the frequency distribution of characteristic traits within the population over generations. *This* is the *automatic* outcome of selection: a change in the proportion of traits in the population where those traits exhibiting higher *fitness* appear more frequently in the population (Campbell 1969; Van Parijs 1981; Endler 1986; Ridley 2004; Futuyama 2009; Hodgson and Knudsen 2010). The terms *reproductive* or *biological fitness* or *reproductive success* denote “the average number of offspring left by an individual relative to the number of offspring left by an average member of the population” (Ridley 2004, p. 74). Not only does the process account for reproductive success but it also refers to situations where parents leave less offspring than others so that the presence of the trait in the frequency distribution decreases in relation to others (Vromen 1995).

If a trait increases the likelihood of reproductive success among those who possess it, then the trait is judged *adaptive* relative to (1) the idiosyncrasies of the environment within which it exists, and, (2) “neighbouring alternatives” (which also have some extent of adaptation relative to the environment) (Van Parijs 1981, pp. 62-63). Thus, the environment “imposes” a criterion for selecting (“evaluating”) among traits expressed in terms of the likelihood of an

entity reproducing within its specific environment when possessing one of those traits (Van Parijs 1981, p. 97).

3.4.2 The Process of and Conditions for Natural Selection

Natural selection requires three necessary conditions: variation, selective retention and elimination, and, inheritance-replication located and interacting within a specific environment (Campbell 1969; Aldrich 1979; Van Parijs 1981; Endler 1986; Vromen 1995; Metcalfe 1998; Hull *et al.* 2001; Knudsen 2002; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). In this research, these conditions are considered sufficient to establish a generic and baseline framework for achieving the research objectives¹⁷¹.

Figure 25 to Figure 27 depict each of these three conditions respectively and draw the implications of each of these conditions on the manner in which an evolutionary explanation based on natural selection must be constructed. It is analytically useful to consider the three components as discrete stages (Aldrich and Ruef 2006). The phases should not be mistaken for a linear sequence; rather, the stages are concurrent and are linked in continuous feedback cycles and loops or iterations (e.g., Plotkin and Odling-Smee 1984; Hull *et al.* 2001; Metcalfe 2005; Aldrich and Ruef 2006).

¹⁷¹ Difficult questions arise with respect to whether and how these three principles apply (Campbell 1969; Hodgson and Knudsen 2010) in socio-cultural evolution and what supplementary but logically consistent arguments are required to complete a socio-evolutionary explanation – thus, the three conditions alone may not be entirely sufficient, albeit necessary (Aldrich *et al.* 2008; Hodgson and Knudsen 2010).

Figure 25 – Variation as a Necessary Condition for Natural Selection

Variation as a Condition for Natural Selection

Condition Defined	Implications for Evolutionary Explanation
<p>There must be variation among individuals with respect to some measurable characteristic or trait of selective significance (Campbell 1969; Endler 1986; Hull <i>et al.</i> 2001; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010).</p> <p>“What is important in selection is the abundant production of new phenotypes to permit the species to keep up with the possible changes in the environment” (Mayr 1997, p. 2093).</p>	<p>An explanation must be provided how variations are generated and replenished within a particular population (Hodgson and Knudsen 2010).</p>

Source: Adapted from (Campbell 1969; Endler 1986; Mayr 1997; Hull *et al.* 2001; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010)

Figure 26 – Selective Retention and Elimination as a Necessary Condition for Natural Selection

Selective Retention and Elimination as a Condition for Natural Selection

Condition Defined	Implications for Evolutionary Explanation
<p>Consistent relationship between the trait and the consequences of such traits to confer advantage in survival and reproduction (Endler 1986; Lennox 1992); i.e., the trait must be of selective significance (Metcalf 2005). Some traits exhibit a higher degree of adaptation to prevailing conditions via their consequences and, consequently, these traits increase in numerical significance in relation to others, which exhibit a lower degree of adaptation (Metcalf 2005).</p> <p>Entities of selective significance interact via certain processes with the environment, which imposes a set of consistent selective criteria. These criteria are the basis against which certain traits via their consequences are either selectively retained or eliminated (Campbell 1969; Aldrich and Ruef 2006). Environmental interaction results in fitness differences, i.e., differential replication (Hull <i>et al.</i> 2001, p. 516; Knudsen 2002, p. 467; Metcalf 2005; Hodgson and Knudsen 2010, p. 107).</p> <p>The selective criterion may be expressed in terms of specific problems of adaptation and traits and variants are analogous to solutions to such problems (Hodgson and Knudsen 2010).</p>	<p>An explanation must:</p> <ol style="list-style-type: none"> (1) Describe the specific environment and the rival traits undergoing similar selective pressures (Campbell 1969; Hull <i>et al.</i> 2001; Metcalf 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010); (2) Identify the unit of selection, a notoriously difficult task (Catania 1984; Dawkins 1984; Sober 1984; Lloyd 1992; Mayr 1997; Hull <i>et al.</i> 2001; Mayr 2002; Aldrich and Ruef 2006; Hodgson and Knudsen 2010) and the environmental consequences of such traits (Dawkins 1984; Lennox 1992); (3) Provide an appropriate definition and measurement of fitness (Endler 1986; Metcalf 2005; Hodgson and Knudsen 2010); (4) Account for the relevant selective criteria (Campbell 1969; Aldrich and Ruef 2006; Hodgson and Knudsen 2010); and, (5) Detail the specific selective processes and dynamics that govern interaction (Campbell 1969; Skinner 1981, 1984h) and that are causally involved in differential replication and elimination.

Source: Adapted from (Campbell 1969; Endler 1986; Lennox 1992; Hull *et al.* 2001; Knudsen 2002; Metcalf 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010)

Figure 27 – Inheritance with Replication as a Necessary Condition for Natural Selection

Inheritance with Replication as a Condition for Natural Selection

Condition Defined	Implications for Evolutionary Explanation
<p>Parents and offspring must share the particular trait and the relationship between parents and offspring for the trait must be consistent (Endler 1986). Therefore, a specified trait must be heritable.</p> <p>Retention <i>preserves</i> positively selected trait variations while copying or replication mechanisms reproduce, duplicate, and propagate said variations as the case arises in future interactions within the environment. The outcome of these processes is continuity or survival of the positively selected variant (Campbell 1969; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). Replication proceeds with a degree of <i>fecundity</i> (a relatively high volume of copies), <i>longevity</i> (persistence), and <i>fidelity</i> (an accurate reproduction of copies) (Hull 1980; Becker 2001; Hodgson and Knudsen 2010).</p> <p>The information metaphor is important in replication (Hodgson and Knudsen 2010). In Skinner’s case the metaphor has use only with respect to the level of abstraction where behaviour occurs, that is, as an extra-personal variable (Skinner 1981, 1984h).</p>	<p style="text-align: center;">The explanation must:</p> <ol style="list-style-type: none"> (1) Establish the consistent relationship between parent and offspring for a particular (heritable) trait (Endler 1986), (2) Specify mechanisms for retention and duplication (Campbell 1969; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010); (3) Specify the processes underlying copying of positively selected variants in interaction with a specific environment; (4) Establish what is being retained and replicated which is usually defined in terms of instruction sets (“code containing instructions of behaviour”) or rules that carry useful information with respect to the manner in which past problems of environmental adaptation were solved (Hodgson and Knudsen 2010).

Source: Adapted from (Campbell 1969; Hull 1980; Skinner 1981, 1984h; Endler 1986; Becker 2001; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010)

3.4.3 Outcomes and Objects of Selection

A. The Outcome of Selection: Fitness Differences

If the three conditions are met, then the outcome of natural selection will follow automatically: a change in the proportion of traits in the population where those traits exhibiting higher (reproductive) *fitness* appear more frequently in the population (Campbell 1969; Van Parijs 1981; Endler 1986; Ridley 2004; Futuyma 2009; Hodgson and Knudsen 2010). Thus, with any given generation, traits exhibit fitness differences (Endler 1986; Hodgson and Knudsen 2010).

Biological *fitness* is a descriptive within-generation measure quantifying the shifts in the traits leading to changes in the distribution of the genotype. The measure is not explanatory, i.e., it does not explain the causes of these shifts (Sober 1984; Endler 1986). Fitness may be thought of a measure describing the capacity of a particular genotype in reproducing itself in the next generation relative to the reproductive capacity of the average genotype (Hodgson and Knudsen 2010)¹⁷².

In the social domain, biological reproduction is interpreted in terms of copying and replication. Thus, economic fitness is defined as the differential propagation or replication of a particular or firm-specific instruction set (i.e., “code containing instructions of behaviour”) in the entire population (Hull *et al.* 2001, p. 516; Knudsen 2002, p. 467; Hodgson and Knudsen 2010, p. 107). The instruction set carries useful information with respect to how past problems of environmental adaptation were solved (Hodgson and Knudsen 2010). That is, rules in the Skinnerian account¹⁷³. *Economic fitness* is measured as the ‘relative importance of individual brand shares in relation to the share of an

¹⁷² In evolutionary biology, the *genotype* refers to the heritable genetic constitution of an individual, which, in interaction with the environment, determines the individual’s *phenotype* or its observable characteristics (form structure, function, and behaviour) (e.g., Mayr 1997; Futuyma 2009). The genotype, as applicable to the social domain, is conceptualised as set of explicit or implicit quasi-stable instructions or rules that function (i.e., are causally involved) to retain and replicate the behaviour specified in the rules with a degree of fecundity (a relatively high volume of copies), longevity (persistence), and fidelity (an accurate reproduction of copies) (Hull 1980; Becker 2001; Hodgson and Knudsen 2010).

¹⁷³ See Section 3.2.7.

average member of the entire manufacturer population' and demonstrates the result of the processes of evolutionary patterns of economic change (Metcalf 1998, 2005). Following Metcalfe (1998, 2005) the measure of market share is a useful proxy measure for differential economic weighting within the market and is taken to reflect the relative fitness of the various marketing practices (in generating brand sales). Share is a useful proxy because the essential properties of economic fitness arise from the dynamic market interactions of competing organizations (Metcalf 1998, 2005).

It is important to emphasise that (1) within this research an analogy is drawn between biological offspring and the capacity of marketing practices to generate behaviour within firm-customer relations that terminates in the literal exchange of the brands of the firm; and, (2) fitness does not show which of the various properties inherent to behaviour of competing firms confer advantage. Each property, individually and in combination (Dahlbom 1984), contributes positively or negatively to the firm's reproductive and survival success¹⁷⁴.

B. What is Being Selected? Selection "of" and Selection "for"

Neither Skinner (1981) nor his direct replies to criticisms (Skinner 1984h) define and distinguish between the object of selection (what is being selected) and the consequences (i.e., the advantage conferring properties) for which the object is selected (Catania 1984; Dawkins 1984, p. 486)¹⁷⁵. The problem is compounded by a lack of a proper definition of the term "cultural practices" and

¹⁷⁴ Vromen (1995) raises the point that reproduction is more important than survival within biological natural selection: "what counts in natural selection is not whether an organism lives longer than others, but that it leaves more offspring than others. What really matters is an organism's *relative reproductive success*" (Vromen 1995, p. 92, sic). Also, fitness and adaptation are related concepts but should not be confused (Endler 1986; Foxall 2010b). The meaning of *adaptation* that is adopted here refers to the degree to which individuals become suited to environmental conditions through changes in traits that influence their survival and reproductive success (Endler 1986; Okasha 2006; Futuyma 2009; Foxall 2010b).

¹⁷⁵ The issue of what entity is being selected in natural selection is very important (and contentious) in both evolutionary biology (e.g., Lloyd 1992; Mayr 1997; Hull *et al.* 2001; Mayr 2002; Futuyma 2009; Hodgson and Knudsen 2010) and socio-cultural evolution (e.g., Hull *et al.* 2001; Hodgson and Knudsen 2010). Lloyd (1992) and Mayr (1997) identify a non-exhaustive list of such entities (e.g., gene, genotype) considered within evolutionary biology, which together with other units identified for socio-cultural evolution (e.g., comps (Mckelvey 1982), culturgens (Lumsden and Wilson 1980), memes (Dawkins 2006), habits, routines (Nelson and Winter 1982; Hodgson and Knudsen 2006, 2010), individuals and institutions (Hodgson 1994; Hodgson and Knudsen 2006)) comprise the unit of selection debate that spills over into evolutionary economics. Suffice it to say that the identification of an appropriate unit of selection is critical in socio-cultural evolution (e.g., Catania 1984; Dawkins 1984; Hodgson and Knudsen 2006; Witt 2006; Hodgson and Knudsen 2010).

Skinner's inconsistent usage of the term across his various publications. In response to Dawkins (1984), Skinner (1984h) tentatively claims that the units of selection are the cultural practices themselves. Is Skinner's analysis correct?

The terminological distinction made earlier between repertoires, group practices, and individual behaviours¹⁷⁶ serves as a basis to clarify Skinner's cultural evolution analogy with respect to the outcome of selection process in terms of (a) what is being selected, *i.e.*, *the repertoire*, and, (b) the causal relevance of the consequences or effects of the properties or traits of a given practice to their presence in what is being selected.

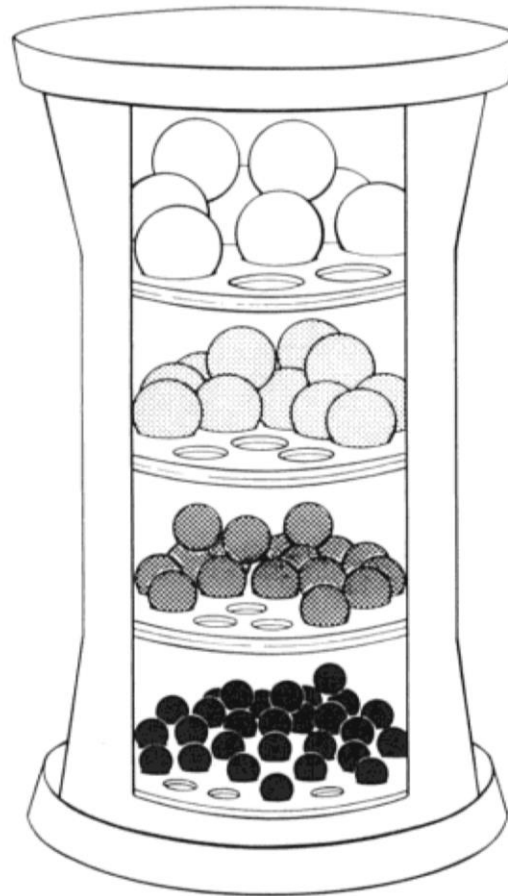
Within the literature reviewed, the conceptual distinction between *selection of objects* and *selection for properties* made by Sober (1984) is frequently cited to provide clarification on the issue of the unit of selection (e.g., Endler 1986; Lloyd 1992; Mayr 1997; Metcalfe 1998; Hull *et al.* 2001; Mayr 2002; Metcalfe 2005; Futuyma 2009; Hodgson and Knudsen 2010). The research follows this distinction.

Sober (1984) illustrates the idea by characterising the selective system as a "selection toy" (Figure 28). The selection toy has three horizontal levels each of which contains holes of identical size. The holes become progressively smaller as one descends towards the bottom. The toy has different sized balls and, when the balls are at the top, shaking the toy distributes the balls to the respective levels. The balls are selected for their size respective to the holes at each level. The smallest size balls are the most successful in reaching the bottom. In parallel, balls of the same size *coincidentally* have the same colour. If the smallest balls are black then the selection process selects the black balls because they are the smallest in size (Sober 1984). With reference to the distinct concepts of *selection of objects* and *selection for properties*, the illustration shows that there has been *selection of balls for the property of size*. There was no *selection for the property of colouration* even though all the smallest balls were black. There was *selection of black balls* but there was not *selection for colour*. *Selection of* therefore reflects the effects of the selection process whereas *selection for* describes the causes of selection (Sober 1984).

¹⁷⁶ See Section 3.3.2B.

That is the consequences of size not colouration satisfied the selection criterion – progressively smaller holes among different levels towards the bottom.

Figure 28 – The Selective System



"A selection toy in which the name of the game is getting to the bottom. The [black] balls are the smallest and therefore have the best chance of descending. After a thorough shaking, the small balls, i.e. the [black], are selected. There is selection for being small, not for being [black]. This illustrates the difference between the concepts of selection of objects and selection for properties".

Source: Sober (1984, p.99)

Thus, what is meant when it is said that there has been selection for a given property is that having the particular property causes survival and reproductive success. In addition, there cannot be selection of entities without there being selection for properties (Sober 1984).

Quite aptly, Sober (1984) describes the phenotypic characteristic of blackness as a “free rider” property and concludes that in evolutionary biology natural selection may result in characteristics increasing in frequency even though there has not been any selection for these properties.

Mayr (1997), therefore, defines the object of selection as: “a discrete entity and a cohesive whole, an individual or a social group, the survival and successful reproduction of which is favoured by selection owing to its possession of certain properties” (p. 2093). This answers the “selection of” question with reference to whether the entities being selected carry or do not carry the properties that confer survival and reproductive advantage in relation to the specific environment (Sober 1984; Mayr 1997, 2002). Mayr (1997) also defines the properties for which objects are selected: Any dimension of the phenotypic characterisation of the object of selection either in whole or in part that confers reproductive and survival success will be favoured by the process of selection. Such characterisation may include a novel or modified emission, improved resource utilisation, or any other variation that confers advantage in relation to the environment and earlier versions. The phenotype, however, is the result of the interaction of the genotype with the particular environment. Therefore, selection is also for any property of the genotype that has contributed to the phenotype that has been favoured. “Selection is directly for the phenotype and indirectly for the genotype” (Mayr 1997, p. 2093). The research assumes this position (cf. Hodgson and Knudsen 2010).

The distinction between stable cultural practices and the emissions by individuals exposed directly to the contingencies in environmental interactions that give rise to variations, however slight or substantial, is readily apparent in Skinner’s analogy (Skinner 1961b, 1966b, a, 1969, 1971, 1974, 1981, 1984h, 1989b). Thus, cultural practices and their characteristic components as observed empirically within a specific environment are likened to the phenotype and its characteristic properties. Learning history plays a role analogous to the replicating genotype because it holds regulatory dimension and is implied in the extent of the continuity of behaviour over time (Foxall 1993b, 1997b; 2010b, cf. Baum 2000). That is, learning history may be expressed in terms of rules, i.e., of consistencies, empirical regularities or contingencies (a) that describe how individuals have changed from a history of reinforcement arising from past interactions with earlier environments, and, (b) that regulate emissions in prevailing environments. These rules may be retrospectively inferred from this history (either explicitly by the individual himself in the form of private or public

verbal behaviour or by others through observation to include those aspects that are tacit or implicit to the individual). In this sense, therefore, the process of selection directly selects *for* cultural practices and their component properties and, indirectly *for* the learning history (expressed in terms of rules) that has contributed such practices and properties.

Following Skinner (see Section 3.3.2), the consequences of these practices and their component properties confer survival and reproductive (replication and retention of operants) advantage to their practitioners due to the contributions of operants in solving the problems encountered in sum total by the cultural group. The objects of selection, however, are the cultural *repertoires* which either carry these practices and component properties and accompanying rules or not (cf. Skinner 1984h).

This leads to a fourth research proposition (Figure 29).

Figure 29 – Research Propositions Capturing the Distinction between Selection of and Selection for

Proposition 4: The Units of Selection

There is selection *of* the marketing repertoire of firms and selection *for* (directly) its marketing practices (the entire phenotype) including the characteristic properties of the mix (phenotypic characteristics) and *for* (indirectly) the learning history (rules) that has contributed to such practices and properties (the genotype).

3.4.4 The Socio-Cultural Evolutionary Framework and Implications to Skinner's Analogy

This section turns to understanding the extent to which Skinner's analogy is complete in relation to the core components of an evolutionary framework based on natural selection just discussed. Generally speaking, the three conditions for natural selection are present in Skinner's socio-cultural

evolutionary analogy to varying degrees of detail, emphasis, clarity, and explicitness¹⁷⁷.

A. Blind Variation

The process of natural selection requires the existence of variety and the emergence of variation (including novelty and discontinuity) in some characteristic common among members of a population subject to similar selective dynamics (e.g., Campbell 1969; Aldrich 1979; Sober 1984; Endler 1986; Mayr 1997; Hull *et al.* 2001; Mayr 2002; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). This characteristic must have selective significance, i.e., there must be a consistent relationship between the environmental consequences a possessed trait generates and the survival and reproductive advantage conferring properties of the consequences of the trait in relation to a specific environment and neighbouring alternatives (e.g., Campbell 1969; Sober 1984; Endler 1986; Metcalfe 2005). In addition, the characteristic of selective significance must be *recurring* and *fairly persistent* or *stable* (Nelson and Winter 1982; Glenn 1988; Metcalfe 2005; Hodgson 2008)¹⁷⁸. Simply put, stability in characteristics emerges from a process of selection and evolution by natural selection requires the emergence of variations (including novelty) in characteristics to proceed.

These elements have been incorporated into Skinner's account by references to his earlier and later works and to the valid commentaries of his peers.

¹⁷⁷ Appendix A3.5 tabulates a summary of the necessary components of an evolutionary explanation based on the mechanism of natural selection. The table also summarises which of these components are explicit or implicit in Skinner's analogy, and which had to be elaborated upon with reference to other literatures.

¹⁷⁸ Evolutionary economics is generally concerned in explaining whether some feature we observe has survival value. Specifically, Nelson and Winter (1982) attract attention to patterns of behaviour and the survival value of recurring behaviour patterns: "what matters to survival is the actions taken in environments that occur repeatedly, not those taken very infrequently" (p. 42). The reason for training focus on recurring patterns of behaviour lies in one of the characteristic perspectives of evolutionary theory which entails firms interacting with environments and learning, through trial and error/success, and *converging* upon "patterns of behaviour that work" (Mintzberg *et al.* 2009, p. 186). What matters in selection dynamics is success (expressed in terms of relative fitness rather than in terms of absolute maximization or minimisation). And, success is based on *actual* results rather than on what motivates individuals or the intentions behind arising variations (Alchian 1950; Langton 1979; Aldrich and Ruef 2006) or potentials (Van Parijs 1981).

Several authors criticise Skinner's analogy as incomplete because he does not emphasise variation and lacks a mechanism for introducing it¹⁷⁹. From an operant perspective variation is assumed to emerge because otherwise operant conditioning is not possible (Leslie 2002). In addition, the experimental process of shaping demonstrates that novel behaviour may be acquired gradually through cycles of environmental interactions that differentially reinforce some emissions over others¹⁸⁰. Thus, in a sense the mechanism for generating variation is present in operant psychology. However, Skinner's treatment is not convincing: Skinner's (1981) examples of variation, "a better way of making a tool, growing food, or teaching a child" (p. 502) are extremely weak. Entire new practices are simply termed as variations (Skinner 1984h, p. 504) or "genetic mutations" (Skinner 1971, p. 127) when more careful analysis might have led to better insights including providing a stronger behavioural interpretation of creativity¹⁸¹. However, at least at this stage, the first question to ask is whether Skinner's account provides a sufficiently good starting point through which to engage with the empirical evidence¹⁸².

Campbell (1969) characterises variation as continuous deliberate or spontaneous heterogenous non-prescient change and uses the example of exploratory behaviour in learning¹⁸³. Variations may be conceptualised in terms of departures however slight or substantial (including novelty) from recurring and stable practices (Aldrich and Ruef 2006). Skinner's view on behaviour,

¹⁷⁹ See Chapter 1, Section 1.2.1. One set of objections cast the mechanism of variation in terms of intentional and deliberate variation nested as a subset of the problem of agency (e.g., Schull 1984; see also Vromen 1995; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). A related explanation emphasises cognitive explanations of creativity and novelty (Aldrich 1979, pp. 86-93; Foxall 1990). Behaviourist philosophy denies any explanation that is not expressed only in terms of observables. Thus, creativity and novelty require an interpretation through an appeal to prevailing contingencies and to the genetic endowment and learning history of the individual (Skinner 1972; Foxall 1990).

¹⁸⁰ Other mechanisms for variation include modelling and imitation (Skinner 1966c, 1981, 1984b, f, 1986, 1989b). See Section 3.3.1, footnote 146 on page 117.

¹⁸¹ Skinner's (1972) account of creativity is also relatively poor. On the study of human creativity and behavioural variability from an operant perspective beyond Skinner's presentation see for example, Dewitte and Verguts (1999) and Neuringer (2002, 2003, 2012), Palmer (2012) and De Souza Barba (2012).

¹⁸² These issues raise the question as to whether operant conditioning is sufficient in explaining the emergence of variation and its origins.

¹⁸³ Heterogeneity may be observed both across and within groups and even across different situations (Campbell 1969).

especially on problem solving, appears adequate in relation this characterisation¹⁸⁴.

Van Parijs (1981) points out that variation must be blind in the sense that the bias can only be “loosely coupled” with the selection criterion. That is, variation and the criterion for selection are only weakly connected and vary independently (Aldrich 1979). Indeed Skinner’s account and the various operant principles explained presume an imperfect knowledge of prevailing contingencies and being non-prescient or lacking foresight. Operant conditioning and, therefore, Selection by Consequences, are non-teleological explanations (Skinner 1961b, 1973; 1978, pp. 16-20; Van Parijs 1981; Dawkins 1984; Honig 1984; Skinner 1984d; Stearns 1984; Skinner 1989b; Blute 2010).

Variation (including novelty) is thus operationalized as: (a) increases or decreases, appearance or disappearance of marketing practices and related features; (b) changes in the topography of the various marketing practices emitted by the firm and related features; (c) changes in the apparent function of the various marketing practices; and, (d) search or exploratory behaviour followed by other instances of variation.

B. Selective Retention and Elimination

Skinner’s explanation and emphasis on operant conditioning processes uniquely specifies the *dynamics* of selective processes – that is, how selective retention and elimination comes about via interaction of behaviour with the physical, social, and regulatory dimensions of the environment. In contrast, existing explanations in the evolutionary economic literature reviewed take processes of selective retention and elimination for granted¹⁸⁵.

¹⁸⁴ See Section 3.2.7. For example, at the methodological level, precurrent behaviour appears an appropriate mode of interpreting purpose and goal-directedness in behavioural terms (i.e., not random in statistical sense and therefore includes bias). Also, as stated earlier (Section 3.2.8), the view that complex behaviours are not acquired in their complete form or spontaneously but develop gradually (Skinner 1981, 1984h, f; Foxall 1990, 2005) implies a range of behaviours (from small changes to original and novel behaviours) that may emerge from shaping (Foxall 2005; Cooper *et al.* 2007). Problem solving captures exploratory behaviour in learning.

¹⁸⁵ Appendix A3.6 provides examples from the literature reviewed. Future research should be directed to establish the extent to which the dynamics of selective retention and elimination are neglected/taken for granted in evolutionary economics.

C. Inheritance with Replication

The requirement of a consistent relation between parent and offspring for a trait (Endler 1986), i.e., in operant terms, the present emission and its 'ancestral' forms in relation to a common function, is ever present within the EAB. Shaping through differential reinforcement and successive approximations provides the basis for tracing lineages. Reinforced behaviour is replicated or repeated in the presence of sufficiently similar settings. Consistent relations are established through empirical observation. In operant interpretation, however, the relation is more difficult to establish and association occurs through inferring the most likely function of behaviour from the evidence. In either case, knowing or establishing a learning history of the individual is critical. Learning history reflects an empirical statement of how reinforced behaviour is retained (and punished behaviour weakened or eliminated) and accounts for the continuity of behaviour¹⁸⁶.

Skinner's cultural evolutionary analogy also underscores the process underlying the verbal and non-verbal social replication via environmental shaping (and observation, imitation and copying), maintenance, weakening, discontinuity, and extinction. The social replication and retention of selectively retained and eliminated traits within a population is critical in Skinner's analogy and parallels similar emphases by others (e.g., Campbell 1969; 1975).

Retention and Replication

Campbell (1969) draws the analogy between mechanisms for the preservation, duplication, and/or propagation of variants that are selectively retained, on the one hand, and memory, on the other. Skinner eschews the memory and storage analogy (Skinner 1966c, 1971, 1974, 1981; Catania and Harnad 1984; Delprato and Midgeley 1992). Whereas the storage metaphor is

¹⁸⁶ See Section 3.2.9. In addition, it should be noted that from the non-behaviourist literature reviewed, the relation between parent and offspring often appears assumed and the analysis proceeds instead on tackling copying or replication mechanisms while presuming inheritance. If this is the case with the state of the broader evolutionary literature, then Selection by Consequences confers an analytical advantage because Skinnerian perspective forces empirical investigation to focus on *establishing* the relation rather than simply assuming it.

rejected at the level of the individual, it is adequate for the cultural level of analysis, for example, codified laws or instruction manuals (Skinner 1981)¹⁸⁷.

The neo-Darwinian conceptualisation of natural selection maintains an inheritance model that is based on a replicating genotype (Futuyma 2009) or gene (Dawkins 1984, p. 486; 2006, cf. Endler 1986; Mayr 2002; Futuyma 2009) and on the phenotype. Dawkins (1984) introduces his distinction between replicators (the genes) and phenotypic effects into the discussion on Selection by Consequences to elucidate Skinner's analogy at each of the three levels of analysis.

In evolutionary biology, the genes serve replicator function: they are understood as "entities capable of forming lineages of duplicates of themselves in some medium" (Dawkins 1984, p. 486), i.e., of copying behaviour that is relatively similar to the original (Hodgson and Knudsen 2010). During the lifetime of a person, recurring patterns of behaviour (habits) rather than the individuals themselves serve as replicators. The positively and negatively reinforcing (and punishing) consequences of behaviour are the phenotypic effects of those habits. Habits are replicators because the frequency at which behaviour is emitted with an environment (increases or decreases) is a function of reinforcement (and punishment) (Dawkins 1984). Dawkins claims he is unclear with respect to the applicability of the analogy to selection at the cultural level because Skinner is not clear about the unit of selection and about the consequences of selection at this level (especially in view of Skinner's arguments that imply group selection, (Dawkins 1984, p. 487)¹⁸⁸). In reply Skinner (1984h) accepts Dawkins' comments on the individual level of analysis but does not reply to them in any special way. Skinner does clarify, albeit tentatively, that the unit of selection are the cultural practices. However, as has been explained, cultural practices are the (direct) reasons for which cultural repertoires are selected because of the consequences of such practices and their components vis-à-vis specific environments in conferring advantage.

¹⁸⁷ The information metaphor is important in replication (Hodgson and Knudsen 2010). In Skinner's case the metaphor has use only with respect to the level of abstraction where behaviour occurs, that is, as an extra-personal variable (Skinner 1981).

¹⁸⁸ See also Appendix A3.4.

Skinner reiterates that the practices developed by individual members of the group, which, over time, are reproduced across members and over generations, are the selecting consequences. As a result, these practices contribute to the survival of the group.

Several inferences may be drawn from the above to elaborate and clarify Selection by Consequences. First, learning history may be considered as being analogous to the replicating genotype (Foxall 1993b, 1997b; 2010b, cf. Baum 2000). The construct refers to the history of changes undergone by the individual as her repertoires came in contact with various environmental variables, i.e., the “cumulative contingencies of reinforcement and punishment under which the individual ... has previously behaved” (Foxall 1997b, p. 58). Certain repertoires are retained and may be replicated (i.e., recur) in future given sufficient similarity of future behavioural contexts. Thus, learning history is *causally involved* in replication because it ensures behavioural continuity given sufficiently similar environmental conditions. In Skinner’s view, current repertoires are the result of past contingencies of reinforcement (including phylogenetic contingencies of survival and ontogenetic and socio-cultural contingencies) (Skinner 1966c, 1981, 1984b, h, e)¹⁸⁹. By definition, contingencies summarise empirical regularities or lawful relations between antecedent events that set the occasion for behavioural emissions, the operant emission, and the consequences such an operant generates within the environment. Specification of the contingencies is therefore a specification of empirical regularities or consistencies, i.e., of rules (Hayes and Hayes 1989). Thus, learning history is said to hold regulatory dimension¹⁹⁰. Although Foxall (1993b, 1997b, 2010b) first draws the analogy between learning history and the genotype, then emphasises causal involvement of learning history and actual behaviour within a particular context, and also implies the replication function of learning history, he does not appear to explicitly recognise that the common

¹⁸⁹ However, this view is limited in that it neglects to appreciate more fully the variables present in current environments and how these intersect with learning histories to result in the situations that engender the continuity or discontinuity of behaviour (Foxall 1995c, a, 1997b, 1998a, b, 1999c, 2005, 2010b). It is for this reason that the BPM emphasises the intersection of the individual (represented by his phylogenetic, ontogenetic, and cultural heritage) and the current behaviour setting to form a *specific empirical situation*. (Hence the importance of using the situation as a unit of analysis). See also Chapter 4, Section 4.2 and Section 4.3.

¹⁹⁰ Rules specifying an individual’s learning history may be retrospectively inferred either explicitly by the individual himself in the form of private or public verbal behaviour or by others through observation to include those aspects that might seem tacit or implicit to the individual.

denominator between history and genotype is the expression of quasi-stable properties as rules.

Second, Skinner does not make a conceptual distinction between the relatively stable character of a repertoire (the equivalent of the genotype in the social world or quasi stable properties of behaviour expressed in learning history, i.e., the *potential* emissions) and the variations (ranging from slight to substantial) in the *actual* emissions observed (as the phenotypic representation of the relatively stable dimensions of the repertoire) emerging when an individual interacts with prevailing environmental conditions. The distinction between stability and variation must be made to identify and characterise the rules that regulate for stability and the variations that emerge from direct exposure to the contingencies in actual interaction of these rules with the prevailing environment. If the environmental contingencies are sufficiently similar to the past, the appropriate previously reinforced behaviours are emitted (reproduced). That is, the pattern of behaviour remains stable and continues. Conceptually, the outcome of the process is that the rules expressing this regularity and consistency continue to hold.

Third, the extent to which previously reinforced behaviour satisfies prevailing contingencies determines differential replication (reproduction) in current environments and differential retention for replication in future contexts (continuity and thus survival). To use Dawkins' terminology, it is the individual's habit (a certain regularly recurring $S^D:R:S^{r/p}$) that is retained or eliminated.

Fourth, at the cultural level of analysis, the regulatory dimension of cultural practices in Skinner's account is a recurring theme (e.g., Skinner 1953; Skinner 1971, 1974, 1989b) and emphasises the replicator function within the social world¹⁹¹. This dimension reinforces the earlier claim that there is

¹⁹¹ For example, "the group supplies supporting contingencies when it describes its practices in codes or rules which tell the individual how to behave and when it enforces those rules with supplementary contingencies. Maxims, proverbs, and other forms of folk wisdom give a person reasons for obeying rules. Governments and religions formulate the contingencies they maintain somewhat more explicitly, and education imparts rules which make it possible to satisfy both natural and social contingencies without being directly exposed to them" (Skinner 1971, p. 170).

selection, albeit indirectly, *for* the learning history (expressed in terms of rules) that have contributed practices and their properties.

Finally, any change in the antecedent and/or consequential variables within the current environment may alter the likelihood of behaviour being *repeated* across similar situations (Kunkel 1977, p. 446)¹⁹². The environment occasions variation and the cycle begins again.

Therefore, within this research, the *genotype* as applicable to the social domain is defined as set of explicit or implicit quasi-stable instructions or rules that function (i.e., are causally involved) to retain and replicate the behaviour specified in the rules with a degree of fecundity (a relatively high volume of copies), longevity (persistence), and fidelity (an accurate reproduction of copies) (Hull 1980; Becker 2001; Hodgson and Knudsen 2010). The learning history of the individual is analogous to the genotype because it holds regulatory dimension functioning to retain and replicate behaviour given sufficient similarity of behaviour setting. The *phenotype* is the result of an interaction of the rules with the prevailing environment, i.e., behaviour resulting from a direct exposure to the contingencies. When the analogy between learning history and the genotype is drawn, the former may be conceptualised in terms of rules that serve retention and replicator function.

At the cultural level of analysis, there is indirect selection *for* learning history (encompassing individual members' learning histories and cultural history including physical verbal storage artefacts) expressed in terms of rules that have contributed practices and their properties.

3.5 Summary

Section 3.2 detailed the foundational definitions and principles uncovered within and governing the EAB. In Section 3.3, Selection by Consequences was explained, interpreted, and clarified through an appeal to these principles, to Skinner's ideas on the subject found in his primary publications, and, to a fundamental set of valid contributions made by a variety of scholars. The

¹⁹² It is those variations that alter the likelihood of replication of behaviour that might be of selective significance.

central research propositions that drive the empirical component of this project were derived in this section. Section 3.4 discussed the principles of natural selection as applicable to socio-cultural evolution to determine the necessary components for the generic VSI framework. The discussion shows that each of the component principles is present in Skinner's analogy to varying degrees of detail, emphasis, explicitness, and clarity.

Selection by Consequences in application to cultural evolution is an exercise by Skinner in narrative interpretation. He extrapolated directly from the experimental space into the real social world without taking into account the complexities of human behaviour in natural settings. The literature review raised a range of valid contributions Skinner did make through his various publications on the subject. Elaborations clarified some important points that Skinner neglected or glossed over: especially with respect to the unit of selection and the inheritance dimensions. Through the discussion on the subject, the chapter proposes that marketing repertoires are selected for their component marketing mix configurations (and their characteristic properties, e.g., exclusivity) and for the rules (summarising the learning history of the firm) that have given rise to such configurations and component properties and, which, so far, have conferred advantage in relation to past environmental selective criteria and conditions.

The following chapter further refines the characterisation and the propositions from the perspective of the Marketing Firm via the BPM to take into account economic behaviour in natural settings. The perspective provides further definitions and the necessary operational measures to devise the SMC and to apply in research against the chosen evidence.

Chapter Four

Selection by Marketing Consequences:
Operationalizing the Framework

4.1 Introduction

The task subsequent to the examination of Skinner's analogy involves establishing and specifying the Selection by Marketing Consequences (SMC) framework. The SMC utilises the elements of the BPM to interpret the operation of the selective environment on the marketing repertoire of the firm for marketing practices, for the properties of these practices, and for the regulatory dimension of the firm's history of learning that contributes to such mixes and properties.

Section 4.1.1 provides a rationale for adopting the BPM and the Marketing Firm as critical components of the SMC and explains how these components are used. Section 4.2 examines the BPM highlighting its deviations from behaviourist orthodoxy and describing its application to interpreting consumer behaviour. Section 4.3 clarifies and exemplifies the elements of the BPM as these relate, in analogy, to the firm (Section 4.3.1). Sections 4.3.2 to 4.3.5 discuss other aspects of the SMC framework providing the main characterisation, definitions, additional propositions, and measures for conducting the research¹⁹³.

4.1.1 The Main Components of the SMC Framework

The BPM is adopted since its components have been conceptualised (Foxall 1990, 1997b, 1999b), operationalized, and applied in empirical research (Vella and Foxall 2011) to offer an operant interpretation of the situational influences on firm marketing behaviour. In the same fashion as the three-term contingency, BPM relates the behaviour of unique individuals in interaction with their environments to the consequences these repertoires produce. The model also emphasises the signalling and motivational function that antecedent environmental stimuli perform and the classes of associated behavioural emissions given a unique learning history of the individual. At this stage, reliance is made on the theoretical development of the BPM for purchase and consumption because this area enjoys greater theoretical development and application in research.

¹⁹³ An abridged version of this chapter appears in Vella (2015).

The logic underlying the Marketing Firm perspective emphasises three important dimensions.

First, if situational influences do also matter in determining differences among firms (e.g., Hagström and Chandler Jr 1998), then a systematic and rigorous approach that combines economics and operant psychology provides an alternative route to shed light on the role played by the external market environment in determining the patterns of adaptive corporate practices of individual firms and the distribution of adapted practices among a given population of firms. However, outside the highly controlled experimental space and with the use of qualitative data it is extremely difficult to identify contingencies, to disentangle their elements, and to establish the interrelationships among variables so precisely as to demonstrate environmental control on behaviour (Foxall 1990, 2010b). Thus, attributing control and uncovering the gradual and successive sequences in which the environment shapes, maintains, weakens, and extinguishes behaviour with the same valid and reliable (scientific) precision as experimental procedures is not possible. The application of the BPM to render an operant interpretation of marketing practices within the theoretical framework of the *Marketing Firm* (Foxall 1999b; Vella and Foxall 2011) allows the generation of research propositions and apposite operational definitions and qualitative measures to validly and reliably identify the ways in which the various elements composing real world market environments operate independently and in combination on the strategic practices of firms. Thus, the research proceeds on qualitatively demonstrating operant conditioning or otherwise.

Second, within evolutionary economics, treatments of the firm focus almost exclusively on the production or supply side (Valente 2012; Vromen 2012) while assuming “an extremely sketchy representation of markets’ internal functioning” and lacking a generalised framework for modelling and researching consumer behaviour in the real world (Valente 2012, p. 1030). This results in a relatively static characterisation of the behaviour of firms because it neglects customers, the “key stakeholder” which calls the firm “into existence and rationalises the use of its resources” (Foxall 1999b, p. 211). Evolutionary

perspectives reject static models in favour of dynamics, disequilibrium, change, and heterogeneity and, by definition, place importance on environmental interaction (Nelson and Winter 1982; Marengo and Willinger 1997; Nelson and Winter 2002; Dosi and Marengo 2007; Dosi 2013; Nelson 2013). Therefore, a simultaneous examination of both supply *and* demand is required when understanding the natural selection dynamics within a particular market. Nelson (2013), for example, argues for developing an evolutionary price theory where demand shares common assumptions with supply and, thus, their interaction within markets may be carefully and more realistically examined. It is also surprising that with its special emphasis on heterogeneous firms, technological advance, dynamics, novelty, and innovation, evolutionary economics maintains an understanding of the factors involved in the allocation of resources and in the supply of the right product mix for purchase and consumption which is devoid of any substantive treatment of non-price marketing dimensions (Nelson 2013). Thus, what of the special functions of branding, advertising, and salesmanship? What of the symbolic rewards and sanctions of consumer behaviour?¹⁹⁴ What of firm strategies that tap into these dimensions to create and nourish demand?

The *Marketing Firm* (Foxall 1999b) provides an operant interpretation of behaviour of the firm to complement that developed on purchase and consumption behaviours (Foxall 1990, 1997b, 2001, 2005, 2007a). Since both interpretations share a common conceptual framework, the BPM, purchase and consumption behaviour and marketing practices may be integrated to investigate and understand the nature of their interrelationship (Foxall 1990, 1994, 1997a, 1999b, 2001; Vella and Foxall 2011). In addition, since the BPM is an elaboration of the three-term contingency, it is a selectionist model assuming Selection by Consequences (Foxall 1996b, 2010b, c). The model also reorients the discussion on situational influences away from simple considerations of changes in price (*elasticity*) towards a focused analysis of the

¹⁹⁴ See, for example, Witt (2010) and Foxall (2013).

dynamic changes in all or any of the elements of the marketing mix, i.e., the *plasticity* of consumer behaviour (Foxall and Schrezenmaier 2003)¹⁹⁵.

Third, the primary emphasis the Marketing Firm awards to profitable literal exchange and to marketing (Foxall 1999b; Vella and Foxall 2011, 2013) in conjunction with the focus on the market environment as a selective system allows a novel interpretation of marketing practices as socio-economic emissions that contribute to the resolution of the perpetual quandary (and moving target) that is posited by the market as the selective system. In addition, the concept of bilateral contingencies within the Marketing Firm provides the necessary analytical framework to examine reciprocal and mutually reinforcing social and literal exchange relations (Foxall 1999b; Vella and Foxall 2011, 2013) and environmental interaction.

4.2 The Behavioural Perspective Model

4.2.1 *Elaborating the Three-Term Contingency*

The BPM elaborates on and is used in lieu of the three-term contingency as an analytical device to interpret behaviour that is not amenable to an EAB. The framework is specifically constructed to account for what Foxall (1990, 1996b, 1997b, 1999c, 2010b) classes as fundamental weaknesses of the EAB, namely, (1) the limitations of non-human experiments in elucidating the peculiarities of human behaviour which principally arise from our capacity to engage in verbal behaviour coupled with the implications of that capacity, and,

¹⁹⁵ Penrose (1959) highlights the point that Wroe Alderson (and colleague) made in the early 1950s: “it is essential to distinguish between what the economist has called the elasticity of demand and the *more fundamental* factor of plasticity” (sic) (p. 72). Penrose affirms that non-price elements within the repertoire of the firm are fundamental to “the remolding of demand.” Through this reference, therefore, Penrose criticises economists for focusing only on the price elements and relegating other elements to the realm of marketing analysis. Foxall and Schrezenmaier (2003) pick on Penrose’s (1959) statement to call for research within the operant paradigm that utilises price and non-price marketing variables to probe the combined effects on consumer behaviour.

(2) the differences that arise between responses emitted in an experimental laboratory and behaviour within a natural setting and associated implications¹⁹⁶.

Although the BPM is a selectionist interpretation (Foxall 2010c) presuming Selection by Consequences (Foxall 1996b, 2010b), the framework has not yet been applied to generate evolutionary interpretations of consumer (Nicholson and Xiao 2010) and firm behaviour.

Section 4.2.1 discusses the three cardinal departures of the BPM from behaviourist orthodoxy: (1) the nature of reinforcement among humans (Section 4.2.1A), (2) the nature of real world settings (Section 4.2.1B), and, (3) the role of private verbal behaviour (Section 4.2.1C). Although the BPM does assume continuity of operant principles, the primary emphasis is on these three departures: first, to account for those situations where the generalisation of the results obtained in EAB to real world behaviour may fall short; and, second, as an on-going examination of the scope and limits of such generalisation through valid and reliable systematic interpretation and empirical research. The BPM relies both on the evidence generated through the study of human operant behaviour (Foxall 1993c) and on the evidence that the CBA has generated¹⁹⁷. Instead of rejecting the EAB outright or simply assuming complete continuity, the BPM offers a mode for interpreting behaviour systematically and rigorously within a radical behaviourist philosophy via the principles of operant psychology. Section 4.2.2 details the variables of the BPM in application to purchase and consumption.

A. The Bifurcation of Reinforcement

Non-human animal experiments provide very limited insight into the situational influences of human behaviour (e.g., Foxall 1990, 1993c, 1994,

¹⁹⁶ For a complete account of the theoretical development of the BPM and the role of interpretation see (Foxall 1990), (Foxall 1992a), (Foxall 1992b), (Foxall 1993c), (Foxall 1993a), (Foxall 1994), (Foxall 1995c), (Foxall 1997b), (Foxall 1998b), (Fagerstrøm *et al.* 2010), and, (Foxall 2010b). Foxall (1996a) provides an overview of the initial years of theoretical and conceptual development. Appendix A4.1 presents an overview of the CBA research programme associated with the use and application the BPM in research on consumer and marketer behaviour.

¹⁹⁷ Empirical work on the BPM appeared first in 1997: see Foxall (1997a). For a selection of empirical work produced within the BPM research programme see Foxall (2005, 2010c), Foxall *et al.* (2007), Foxall and Sigurdsson (2013), Vella and Foxall (2011), Yan *et al.* (2012a, 2012b), and Yani-De-Soriano *et al.* (2013).

2001). Given the human susceptibility to operant conditioning and that verbal behaviour is uniquely human, then surely some reinforcers and punishers may be particular only to humans (Wearden 1988). For example, the reinforcing and punishing consequences associated with conducting literal exchange transactions and receiving praise from others. This consideration holds implications on the nature of reinforcement among humans and gives rise to conceptualising utilitarian and informational sources of rewards and punishment within the BPM (e.g., Foxall 1990, 1993c, a, 1996b, 1997b, 1998b, 2005; 2010b; cf. Kollins et al. 1997)¹⁹⁸.

Utilitarian reinforcement and punishment relates to the positive and negative consequences of consumer behaviour mediated by the direct usable, economic, and technical benefits of a product and its cost (generally associated with contingency shaped behaviour) (Foxall 1997b, 2005, 2010b; Vella and Foxall 2011; Yan *et al.* 2012a). This form of reinforcement is operationally defined in terms of incentives, practical outcomes, functional or instrumental benefits, and costs as positive and negative utilitarian reinforcers and punishers (Vella and Foxall 2011).

Behaviour also generates informational consequences or outcomes relating to verbal feedback on performance and on accomplishment and is usually mediated by the behaviour of others. Informational reinforcement and punishment (generally associated with rule governed behaviour) is operationally defined as a process which regulates the rate of future emissions through positive and negative feedback on performance, on level of achievement, and on the accuracy of such performance respectively (Foxall 1996b, 1997b, 2005, 2010b; Vella and Foxall 2011, 2013). Therefore, informational reinforcement contributes to resolving the problems posed by the prevailing nexus of contingencies more effectively by providing individuals with the necessary feedback on the appropriateness and accuracy of their performance. The feedback is expressed in terms of the appropriateness of behaviour with respect to the generation of utilitarian outcomes of purchase and consumption and in

¹⁹⁸ A recurring theme in Foxall's work relates to the differences between human and non-human animals which he calls the problem of "speciational discontinuity" with specific focus on verbal behaviour, the proposed solution within the BPM of the bifurcation of reinforcement (Foxall 1995c, pp. 32-33, 36-39; 1998b, pp. 327-333), and later hypothesizing symbolic aspects of reinforcement as distinct from feedback on performance (Foxall 2013).

terms of such social outcomes as status and prestige (Foxall 1997b, 2010b).

Utilitarian reinforcement is considered of similar character to “value in use” or functional properties of the product class and the brand, and informational reinforcement is considered of similar character to “exchange value” as feedback on the performance and accomplishments of the individual’s behaviour as a consumer (Foxall 1997b, 2005, 2010b; Yan *et al.* 2012b)¹⁹⁹. Reinforcement is also understood in terms of combinations or configurations or *patterns* that exert relatively low to relatively high levels of control over behaviour.

The bifurcation of reinforcement is a fundamental contention of the BPM as utilitarian and informational reinforcers and punishers are posited as strong environmental consequences that act independently and in combination within a situation to *occasion* consumer behaviour (Foxall 1990, 1992b, 1993c, 1995c, 1997b, 1998b, 2005, 2010b; Vella and Foxall 2011; Yan *et al.* 2012a; Yani-De-Soriano *et al.* 2013). Empirical research repeatedly shows that both sources of reinforcement are influential in the determination of consumer purchase behaviour (Yan *et al.* 2012a)²⁰⁰.

¹⁹⁹ It has been suggested that ultimately the power of informational reinforcement on consumer behaviour derives from such reinforcers being repeatedly paired with utilitarian consequences of behaviour (Foxall 1994, 1997b). Utilitarian reinforcement is largely related to the satisfaction of biological contingencies whereas informational reinforcement satisfies non-biological contingencies and is usually mediated by other people (Foxall 1997b; Yan *et al.* 2012b). Such an explanation would account for why consumer behaviour appears to be a function of patterns of reinforcement that combine both utilitarian and informational rewards (Foxall *et al.* 2006) to the extent that such reinforcement has the greatest effect on consumer behaviour when applied in combination (Foxall 1996b).

²⁰⁰ In contrast, the nature of reinforcement is not explored within the EAB beyond its response strengthening or weakening effects. Skinner seems to classify all sources of reinforcement as being, ultimately, instrumental or utilitarian. In his treatment of culture, for example, Skinner ignores the possibility that social reinforcement might have non-instrumental consequences that may strengthen and weaken behaviour and that may also effect such dimensions as the replication of practices within the group (see, for example, Skinner 1966a, 1969, 1971, 1981, 1984h). Applied operant research recognizes several verbal and social influences as possible reinforcers and punishers effecting human behaviour. Such influences include: (a) the instructional dimensions of goal setting (Arnold and Van Houten 2011), task clarification (Crowell *et al.* 1988), and prompting (Cooper *et al.* 2007, pp. 401-403; Arnold and Van Houten 2011), (b) feedback in terms of a verbal or non-verbal descriptions of some aspect performance and, as a consequence of behaviour (Crowell *et al.* 1988; Cooper *et al.* 2007, pp. 262-263; Rantz *et al.* 2009); and, (c) social reinforcers such as contingent praise (Crowell *et al.* 1988; Cooper *et al.* 2007; Pierce and Cheney 2008). (The selection of publications provided here is not exhaustive.) However, unlike Foxall, none seem to explicitly recognise these consequences of behaviour as independent and separate from instrumental consequences. At worst, Foxall’s approach seems to instil a more fine-grained approach to the reinforcing and punishing consequences of human operant behaviour.

B. The Scope of Behaviour Settings

Clearly laboratory settings are significantly more restrictive than natural ones (e.g., Foxall 1990, 1994, 1996b, 2005, 2010b): consider the differences between the sources of simulation within a controlled experiment and those found within a single aisle in a supermarket. On the one hand, a laboratory is a significantly contrived setting where antecedent and consequential stimuli are purposely limited to a few (or even one) and are almost completely controlled by a single researcher (Johnston and Pennypacker 2009). On the other, a supermarket is characterised by many antecedent and consequential stimuli and in the relative control of several marketers each competing for consumer attention (e.g., Foxall 1990, 1997b, 2010b). These situational variables include different ranges of products, distinctive brands, atmospherics, and so on (e.g., Foxall 1990, 1997b, 2010b; Vella and Foxall 2011).

The BPM assumes that all consumer behaviour may be interpreted in terms of extra-personal influences but recognises the methodological limitations in reliably, objectively, and accurately relating the rate of responding to its actual situational determinants (Foxall 1990, 1993c, 1996b, 2010b). Therefore, the model characterises the range and extent of differences between experimental and real world contexts by positing a set of antecedent stimuli that define the relative stricture of the behaviour *setting scope*. In the EAB, the scope reflects the extent to which behaviour may be brought under the contingency control by the experimental researcher. Within operant interpretations, the scope reflects the extent to which the control of behaviour by extra-personal environmental variables may be established through an accurate and objective specification of the contingencies (Foxall 1990, 1996b, 2010b). Thus, the distinction between the relative scope strictures of behaviour settings may be explained in terms of (a) the relative extent to which the external environment (i.e., “behaviour modifier” (Schwartz and Lacey 1988) or behaviour modification agent) gains contingency control over an individual’s behaviour, and, (b) the extent to which the individual’s rate of responding may be unambiguously related to extra-personal variables (Foxall 1993c, p. 218). Generally, the more closed the behaviour setting, the less unambiguous and the more easily identifiable are the extra-personal influences. Conversely, the

more open the behaviour setting, the greater the ambiguity and difficulty in relating behaviour to its situational determinants (Foxall 1992b, 1993c)²⁰¹.

In operationalization, the scope of the setting reflects the extent to which individuals are compelled by situational influences to behave in particular ways and, therefore, behaviour settings are said to vary in the range of emissions available to individuals (Foxall 1999c, 2005, 2010b; Vella and Foxall 2011, 2013). A relatively closed consumer behaviour setting (queuing at the check-in counter in an airport) reflects a limited range of possible behaviours to produce reinforcement (boarding the plane *en route* to a holiday destination) and relative greater control of the contingencies by others (airport staff, security, and so on).

Further, the greater the degree of control by marketers (and other extra-personal factors) over consumer contingencies, the more predictable consumer behaviour will be (Foxall 1997b, 2005). Thus, purchase and consumption behaviour follows a more stable, more regular, and **routinized pattern**. From a marketing perspective, this stability reduces environmental uncertainty (Vella and Foxall 2013) and enhances predictability for better planning and more stable revenue and profit streams. Conversely, the more open the behaviour setting, the greater the ambiguity and difficulty in relating behaviour to its situational determinants (Foxall 1992b, 1993c). This implies greater variability and fluctuation in consumer behaviour patterns and related revenue/profit streams as environmental uncertainty increases.

The scope runs along a continuum from relatively closed to relatively open settings.

C. Self-Instruction and Rule Governed Behaviour

The BPM considers a third departure from behaviourist orthodoxy: the possibility that in certain purchase and consumption situations, consumers may

²⁰¹ Contrast the perspective proposed by the BPM to Skinner's. The author claims "designing a culture is like designing an experiment" (Skinner 1971, p. 150) since "the difference between contrived and natural conditions is **not a serious one**" (Skinner 1971, p. 156, emphasis added). While admittedly Skinner's cultural design analogy has use in conceptualising strategic marketing behaviour in terms of the strategies used by experimental researchers to identify and control consequential and signalling operations, his latter claim is implausible not only because it is unqualified but it trivialises the complexity of real world settings.

privately specify rules (summaries of contingencies) which function as discriminative stimuli and may provide a proximal or immediate explanation of behaviour. Ultimately, however, these verbal stimuli are under external environmental control (Foxall 1990, 1993a, c, 1994): Although consumer behaviour may be characterised as rule-governed (e.g., following the specifications by marketers of the reinforcement patterns contingent upon purchasing a specific brand over others), ultimately such behaviour is shaped by direct exposure to the contingencies (Foxall 1990, 1993a, c, 1997b, 2010b)²⁰².

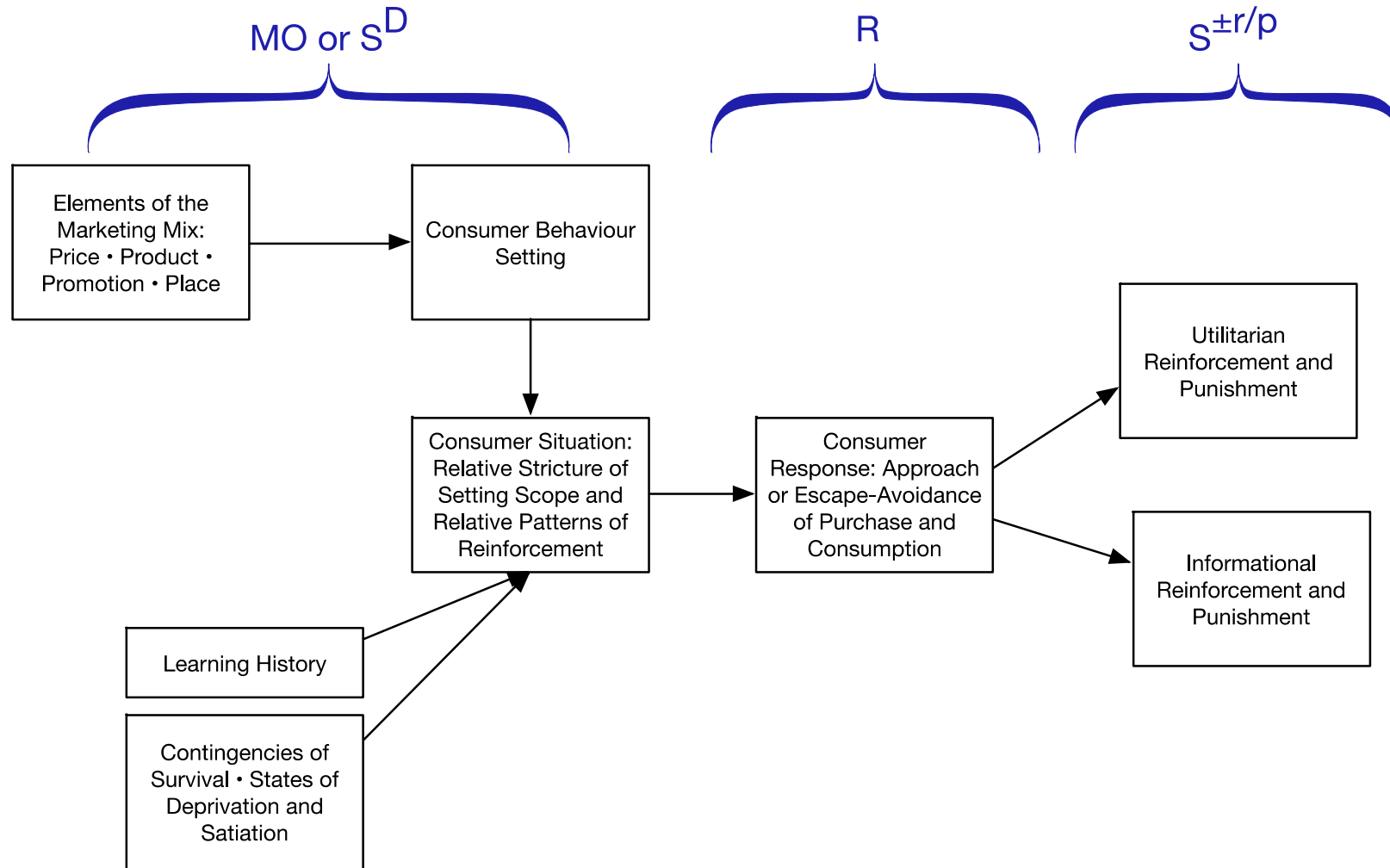
4.2.2 Purchase and Consumption in Terms of the BPM

Having established the three fundamental departures from the conventional Skinnerian approach to behaviour, this section details the variables of the BPM in application to purchase and consumption.

The BPM characterises real world purchase and consumption behaviours to encompass an entire patterned sequence of pre-purchase, purchase, and post-purchase activities (Foxall 1990, 1996b) (Figure 30).

²⁰² The reasons for this are explained in Chapter 3, Section 3.2.7. Ultimately, from a behaviourist perspective, the actual environmental consequences of using a particular brand are invoked in explaining consumer purchase and consumption patterns. A consumer may view several adverts on the benefits of drinking Coca Cola. However, until trial the consumer is said to be under the control of verbal stimuli rather than on the environmental consequences of using and consuming Coca Cola in various circumstances. Such environmental consequences may include the removal or weakening of such adverse stimuli as thirst and heat, and the incidence of positive informational rewards such as praise from peers.

Figure 30 – The BPM explains Pre-Purchase, Purchase, and Post-Purchase Consumer Behaviour in Natural Settings



Source: Adapted from Foxall (1997b, 2010b)

Antecedent spatial or physical (a brand, a planogram, point-of-purchase displays, atmospherics), temporal (opening hours), regulatory (brand information, mandatory insurance for an automobile) and social (a friendly sales person) events comprise the consumer environment, and thus define the *behaviour setting*.

These settings vary in relative scope stricture along a continuum of relatively closed to relatively open (Figure 31). Antecedent scope stimuli reflect the extent to which marketers are able to specify consumer contingencies accurately and unambiguously and, thus, gain a degree of objective control of the possible range of behaviours possible within a particular setting (e.g., Foxall 1990; Foxall 2010b). Relatively closed settings, for example, a retail outlet at a train station that exclusively sells ice cream brands from a given manufacturer, reflect the degree of control marketers have on the ice cream purchase and consumption contingencies of travellers and commuters. Customers wanting an ice cream have little choice – they either purchase the brands on sale or go elsewhere if ice cream is available at other outlets within the station or do without. Consumers may emit alternative escape-avoidance behaviours (e.g., postpone the purchase till later). The range of behaviours available to consumers widens if the same retail outlet stocked rival brands. Buyers are then able to emit a broader range of choice behaviours among available brands. In relatively closed settings consumers are found following the patterns of behaviour prescribed (and proscribed) by marketers: the more closed the behaviour setting, the greater the extent to which an individual will be found following closely the patterns of behaviour prescribed by others (Foxall 1997b; Vella and Foxall 2013).

Figure 31 – The Behaviour Setting Scope



The Range of Behaviours Available to Consumers Broadens as the Extent of Specification and Control By Marketers of the Controlling Contingencies Weakens or Decreases

Source: Adapted from Foxall (1990, 1996b, 1997b, 1999c, 2010b)

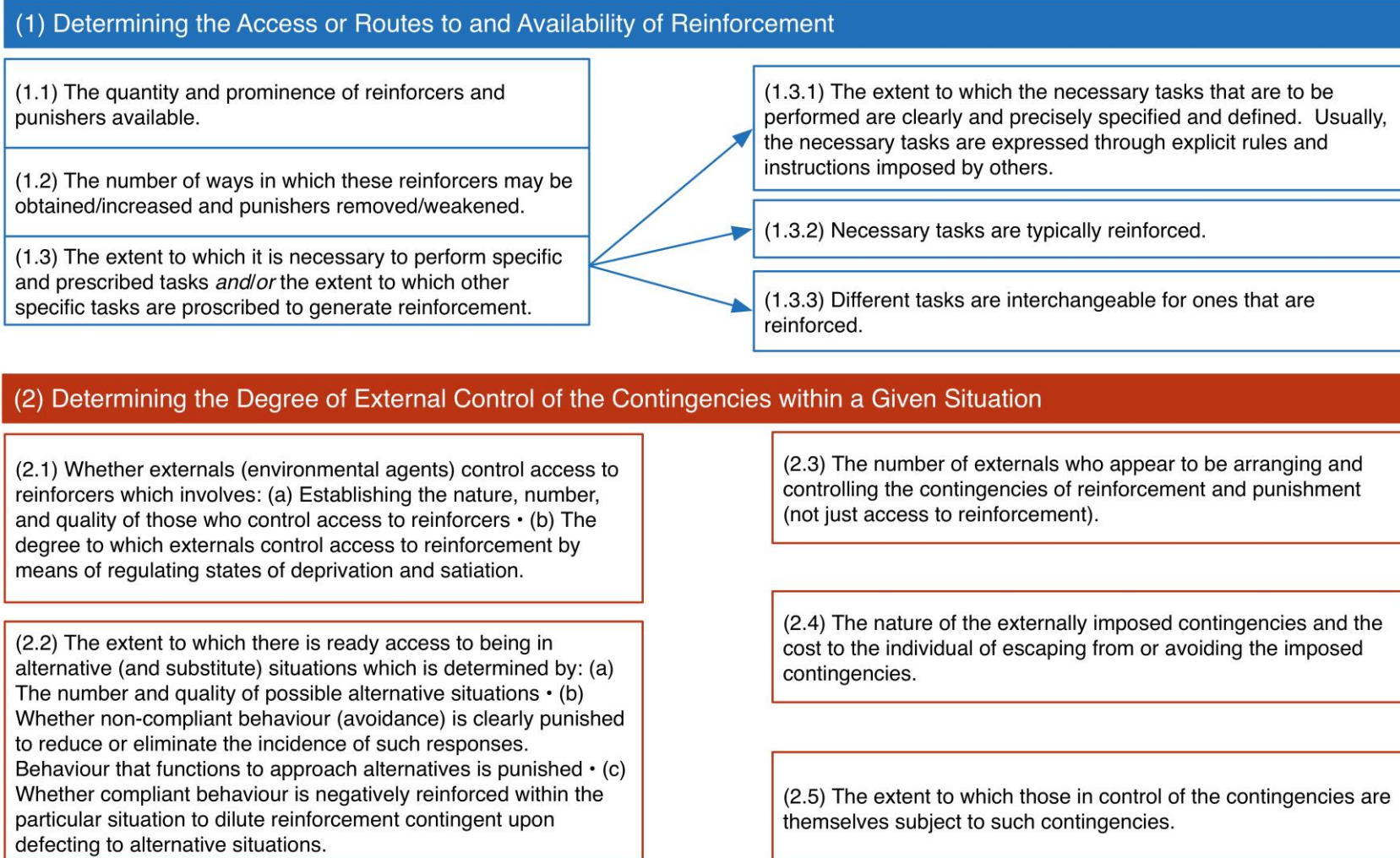
The extent to which behaviour setting scope is relatively open or closed is determined by analysing the environment to establish the parameters defined in (Figure 32)²⁰³.

Any of the various elements of the marketing mix programmed and implemented by marketers may function either as consequential or scope stimuli (Foxall 1990, 1997b, 2010b; Vella and Foxall 2011): Brands within a freezer cabinet set the occasion for utilitarian and informational reinforcement contingent upon purchase and consumption. In parallel, the number of brands and product variety available function as setting scope stimulus events. A cabinet tied exclusively to a particular manufacturer would hold only the brands of that manufacturer thereby constricting the scope of the retail setting.

Stimulus events are presumed neutral and do not acquire the capacity to control behaviour because of their inherent properties. Rather, otherwise neutral stimuli acquire stimulus function in the presence of the *learning history* of the individual (including cultural contingencies), her genetic endowment (i.e., biological contingencies or contingencies of survival), and, the current state of deprivation and satiation (Foxall 1990, 1992b, 1997b, 2001, 2010b).

²⁰³ The figure is based on Foxall (1990, 1992a, 1997b, 2010b) and Vella and Foxall (2011). See also Appendix A4.2.1.

Figure 32 – Determining the Degree of Stricture of the Behaviour Setting Scope



Source: Foxall (1990, 1992a, 1997b, 2010b) and Vella and Foxall (2011)

Besides genetic endowment and states of deprivation, learning history accounts for the single most important representation of the individual in the BPM (Foxall 1994, 2010b)²⁰⁴. The construct refers to the “sum total of ... emitted behaviours and their consequences under particular conditions” and “summarises the cumulative contingencies of reinforcement and punishment under which the individual ... has previously behaved” (Foxall 1997b, p. 58). An individual’s learning history is activated by and primes the behaviour setting (Foxall 1997b): the arrival of the individual with in a particular setting (the salience, presence and absence of stimulation) activates his history. In turn, learning history determines which stimuli achieve discriminative function (which elements are reinforcers and punishers) and which stimuli achieve motivational function (i.e., the salience and effectiveness of the stimuli or the degree to which a consequence is reinforcing or punishing within the particular situation) (Foxall 1992b, 1996b, 1997b; Fagerstrøm *et al.* 2010; Foxall 2010b).

Learning history represents ‘habit’ or the potential for the continuity of behaviour within sufficiently similar behaviour settings (Foxall 1993b, 1997b, 2010b). Repeated interaction with the environment modifies the learning history of the individual altering the probability of similar emissions being repeated in future (e.g., Foxall 1992a, 2010b).

Learning history, on the one hand (as the central personal variable), and the behaviour setting, on the other (as an environmental or extra personal variable), are the essential components in constructing behaviourist explanations (Foxall 1995c, a, 1997b, 1998a, b, 1999c, 2005, 2010b). The former denotes the temporal dimension whereas the latter variable marks a spatial dimension (Foxall 1990, 1997b). Learning history provides the basis for understanding the subjective meaning of a consumer’s response within a particular context of behaviour. What determines this meaning (the reason why

²⁰⁴ Contrasting the various expositions on the BPM that have been proposed over the years, three personal variables are used to characterise consumers, namely, states of deprivation and satiation, learning history, and genetic endowment (Foxall 1992b, 1994). Of these learning history is the single most important and explicit personal variable that impinges directly on consumer behaviour (Foxall 1994). On the other hand, for example, Foxall (1993b), Foxall (1992a), Foxall (1993c), and Foxall (2007a) omits either genetic inheritance or state variables or both. The omission may reflect an implicit assumption of these variables. Alternatively and in the light of Foxall’s emphasis on interpretations (see especially, Foxall 1994, 1995c, 1998b, 1999c, 2001, 2010b), the omission might reflect Foxall’s caution over speculating à la Skinner on the possible genetic factors that influence economic choice behaviour.

an individual acts the way she does within a given context) is the unique interaction of the individual's history of learning (plus her genetic endowment and state of deprivation and satiation) and the current behaviour setting – this defines the *consumer situation* (Foxall 1992b, 1995c, a, 1997b, 1998b, a, 1999c, 2005, 2010b)²⁰⁵.

The *consumer situation* component of the BPM summarises the unique interaction of a particular individual with an otherwise neutral environment – it is the context within which the consumer with his genetic endowment (susceptibility to both utilitarian and informational reinforcement (Foxall 2010a, pp. 327-329)), his lifetime of reinforcement and punishment (that includes a cultural repertoire) in sufficiently similar contexts, and state of deprivation and satiation emits some behaviour (e.g., Foxall 1992b, 2010b). Learning history is activated by and primes the behaviour setting to form the consumer situation (Foxall 1997b): this is a specific empirical event (Jo at Tesco's) that is directly observable and, therefore, constitutes the deepest level of analysis and is the critical explanatory core of the BPM (Foxall 1996b, 1997b, 1998b, 2005, 2010b).

The consumer situation comprises: (a) the unique learning history of the individual, (b) the extent of setting scope stricture, and, (c) the nature, effectiveness, and relative importance or salience of the utilitarian and informational consequences as stimulus events setting the occasion for pre-purchase, purchase and/or consumption emissions (Foxall 1992a, 1993a, c, 1996b, 2010b).

The individual interprets the setting through learning history and predicts: (a) the extent of the setting scope, i.e., the range of behaviours available and the extent to which she is to be found following the patterns of behaviour prescribed and proscribed by others; (b) the most likely immediate consequences contingent upon behavioural pre-purchase and purchase emissions within the setting; and, (c) the most likely subsequent consequences

²⁰⁵ Foxall seems to be challenging the Skinnerian account: whereas Foxall talks of meaning of a response lying in the intersection of past contingencies that have transformed the behaviour of the individual *and* the current stimulus conditions, Skinner (e.g., 1969; 1974) appears to emphasise only the past neglecting the nature and complexity of current stimuli on behaviour. (See also Chapter 2, Section 2.2 footnote 64 page 54.)

contingent upon consumption and other post-purchase behaviour. Thus, the consumer situation regulates the rate of purchase and consumption behaviour (e.g., Foxall 1996b; 1997b, 2005, 2010b).

In the absence of learning history (e.g., a new product on the market), the BPM considers consumers as engaging in deliberative or private or public verbal behaviour. Foxall (1997b, 1998a, 1999c, 2005, 2007a) characterises such behaviour as being primarily rule-following behaviour contingent upon a history of following rules *and* following the instructions provided by *marketers* and by others²⁰⁶. In addition, consumers construct their own rules from their own history of purchase and consumption in related and unrelated settings and/or from observations of the choices (and consequences) made by shoppers already present in the specific setting. These behaviours gradually help construct learning history in relation to the new product in question and may also function as heuristics in future similar or unrelated settings (Foxall 2007a).

Consumer behaviour is simultaneously reinforced and punished by its utilitarian and informational consequences: the acquisition of reinforcers (a particular brand of product, praise on purchasing an item of prestige) entails relinquishing money (the surrender of reinforcers, therefore, a punishing act) *and* these rewards and costs are likely to increase/decrease the probability of future purchase and consumption behaviours (e.g., Alhadeff 1982; Foxall 1990, 1992a, 1996b, 1997b, 1999b, 2010b; Vella and Foxall 2011).

Patterns of consumer behaviour may be conveniently conceptualised in terms of *strengths* (i.e., magnitude and frequency on a given occasion) in the rate of *approach* and *escape-avoidance* (Alhadeff 1982; Foxall 1990, 1997b, 2010b). Given the respective learning history of individual consumers, patterns of consumer behaviour function to either *approach* the net positively reinforcing

²⁰⁶ For example, before trying out a new brand for the first time, consumers would heed adverts, search for information on the Internet, and talk to peers or opinion leaders.

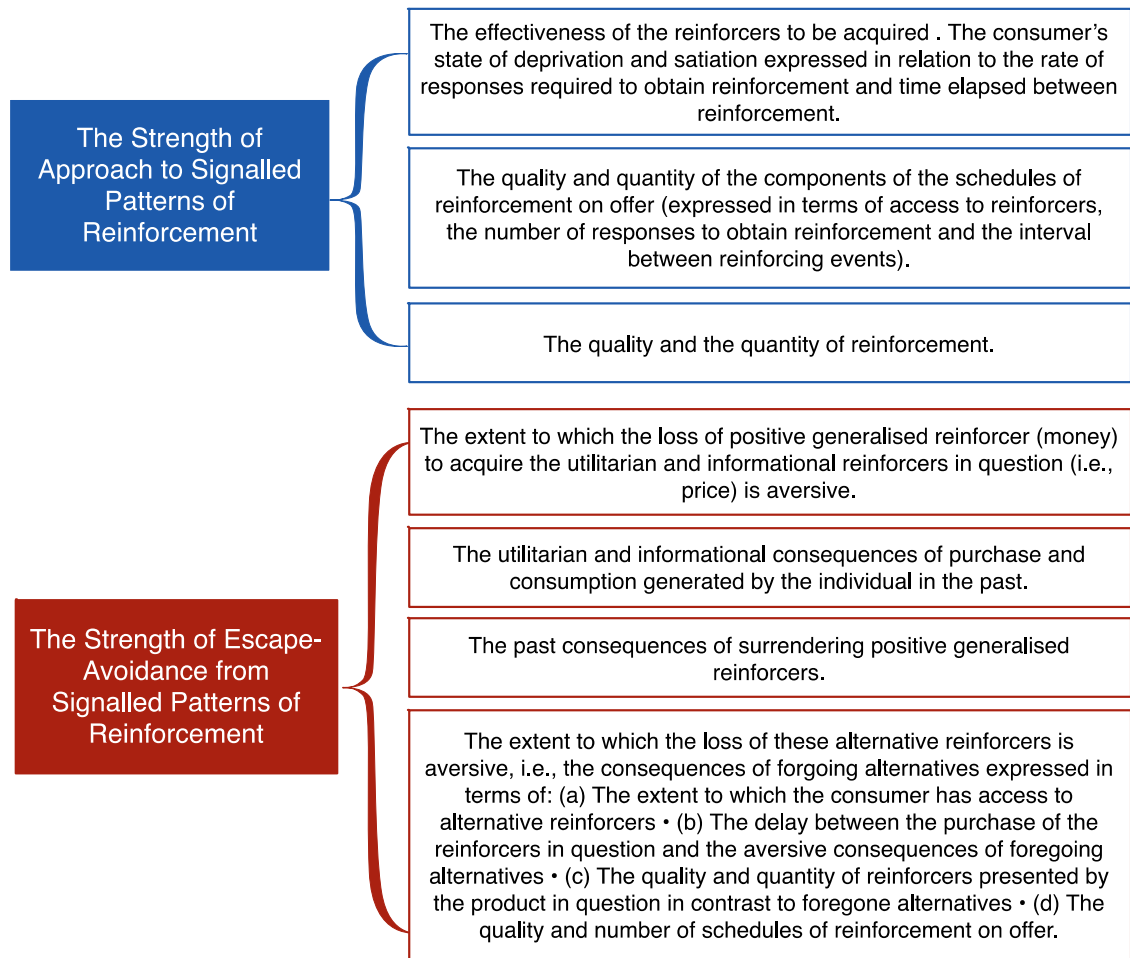
patterns represented by a particular brand on sale or to *escape-avoid* its punishing consequences²⁰⁷.

Figure 33 presents the determinants of the strength of the rates of approach and escape-avoidance as described in Alhadeff (1982), Foxall (1990, 1992a, 1996b, 1997b, 2010b) and Vella and Foxall (2011)²⁰⁸.

²⁰⁷ Window-shopping, browsing brands on a supermarket shelf, product trials, purchasing a particular brand are all examples of approach. Shopping elsewhere, requiring non-stocked brands, and exiting a store are examples of escape-avoidance (Vella and Foxall 2011). The terms approach and escape-avoidance have been defined in Chapter 3, Section 3.2.6C. Within this research, the terms retain the same definitions used in the EAB (cf., Vella and Foxall 2011, 2013).

²⁰⁸ Figure 33 notes additional distinctions in the properties of consequential stimuli. In the EAB, two types of stimulus changes function as reinforcers and punishers. "A stimulus change that can increase the future frequency of behaviour without prior pairing with any other form of reinforcement is called an **unconditioned** [or primary or unlearned] **reinforcer**" (Cooper *et al.* 2007, pp. 38, emphasis in original). The susceptibility of behaviour to be reinforced by primary reinforcers is an integral part of an individual's inherited biological endowment because such reinforcers as food, water, and sex either are directly involved in maintaining the individual's life or have evolutionary survival value (Alhadeff 1982; Cooper *et al.* 2007). "Stimulus events or conditions that are present or that occur just before or simultaneous with the occurrence of other reinforcers (or punishers) may acquire the ability to reinforce (or punish) when they later occur on their own as consequences. Called **conditioned** [or secondary or learned] **reinforcers** and **conditioned punishers**, these stimulus changes function as reinforcers and punishers only because of their prior pairing with other reinforcers or punishers" (Cooper *et al.* 2007, pp. 40, emphasis in original). As such, secondary reinforcers have no inherent capacity to reinforce behaviour but acquire such a capacity through being associated with other reinforcers (Alhadeff 1982; Cooper *et al.* 2007). Generalised reinforcers "are secondary reinforcers that have been conditioned by association with more than one primary reinforcer" (Alhadeff 1982, p. 17). Money is a positive generalized reinforcer because individuals may acquire different primary and secondary reinforcers through its surrender. See also Appendix 4.2.2.

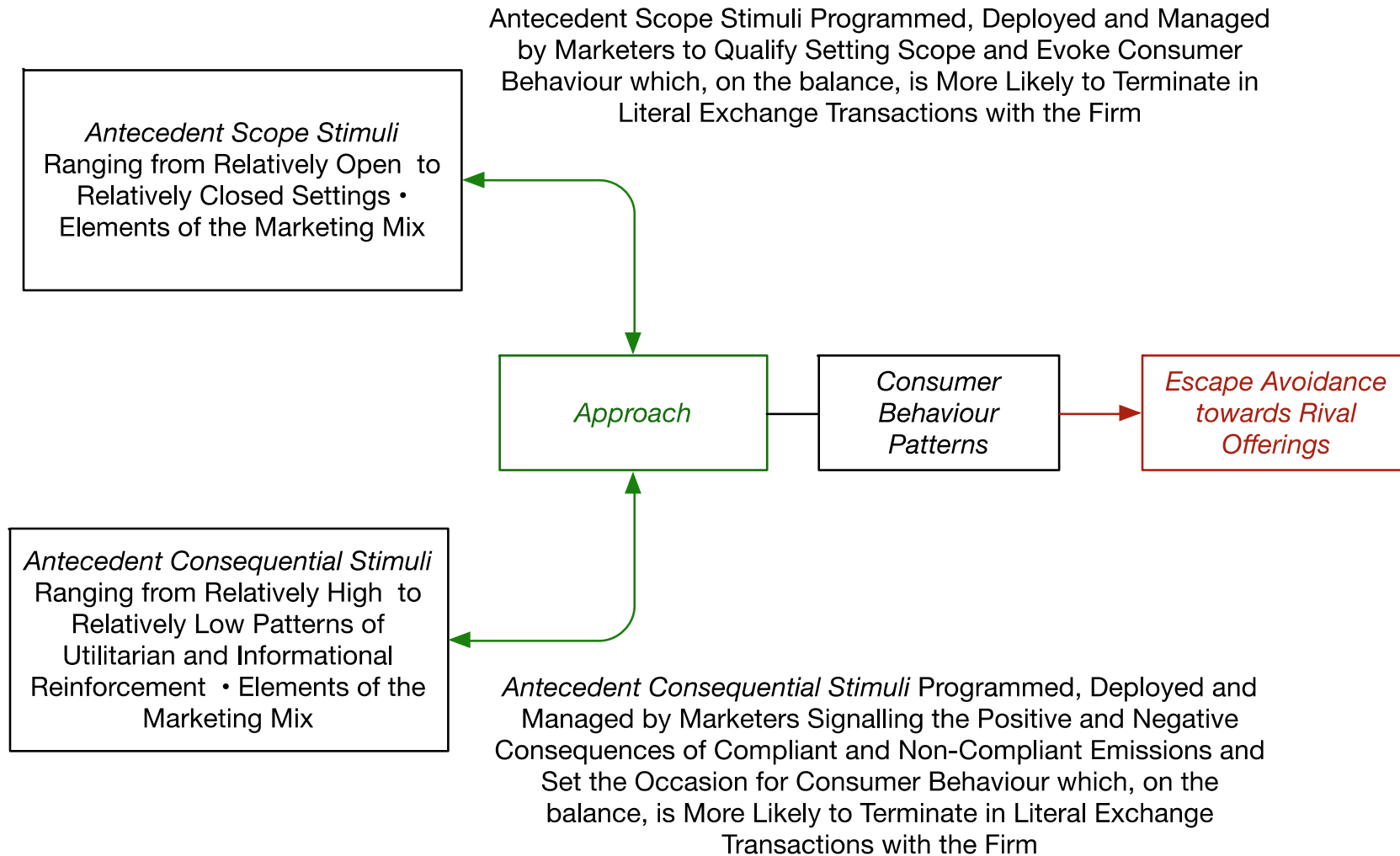
Figure 33 – Determinants of the Strength of Approach and Escape-Avoidance



Source: Alhadeff (1982), Foxall (1990, 1992a, 1996b, 1997b, 2010b), and Vella and Foxall (2011)

The likelihood that a particular brand will be purchased may be represented as the intersection of the two opposing approach and escape tendencies or functions (Alhadeff 1982; Foxall 1990, 1992a, 1996b, 1997b, 2010b; Vella and Foxall 2011)(Figure 34).

Figure 34 – Approach and Escape Avoidance of Marketer Programmed Stimuli



Source: Adapted from Vella and Foxall (2011)

Conceptualising utilitarian and informational consequences according to the extent to which reinforcers and punishers (from relatively low levels to relatively high levels) regulate and modify consumer behaviour, allows the identification of four operant classes of consumer behaviour (Figure 35). These operant classes categorise pre-purchase, purchase, and post-purchase behaviour according to the function such behaviour performs, i.e., according to the environmental consequences generated (e.g., Foxall 1990, 2010b). The terms always imply relative rather than absolute levels of reinforcement (e.g., Foxall 2010b).

Figure 35 – Major Equifinal Operant Classes Associated with Purchase and Consumption

		Patterns of Utilitarian Reinforcement	
		Relatively High	Relatively Low
Patterns of Informational Reinforcement	Relatively High	<i>Accomplishment</i> (appears to be maintained on a Variable Ratio Schedule). Usually associated with Extended Problem Solving.	<i>Accumulation</i> (appears to be maintained on a Fixed Ratio Schedule).
	Relatively Low	<i>Hedonism</i> (appears to be maintained on a Variable Interval Schedule).	<i>Maintenance</i> (appears to be maintained on a Fixed Interval Schedule). Usually associated with Routine Response Behaviour.

Source: (Foxall 1990; 2010b, p. 11)

These operant classes of behaviour are juxtaposed onto the extent to which behaviour settings are relatively open/closed to form what is known as the BPM Contingency Matrix (Figure 36)²⁰⁹.

²⁰⁹ For a detailed discussion of the contingency categories applied to consumer behaviour see Foxall (2005, pp. 100-104; 2010b, pp. 113-147).

Figure 36 – The BPM Contingency Matrix

Patterns of Reinforcement	Behaviour Setting Scope Stricture	
	Relatively Open ↔ Closed	
<i>Accomplishment:</i> Relatively High Utilitarian and High Informational Reinforcement Patterns	Contingency Category 2	Contingency Category 1
<i>Hedonism:</i> Relatively High Utilitarian and Low Informational Reinforcement Patterns	Contingency Category 4	Contingency Category 3
<i>Accumulation:</i> Relatively Low Utilitarian and High Informational Reinforcement Patterns	Contingency Category 6	Contingency Category 5
<i>Maintenance:</i> Relatively Low Utilitarian and Low Informational Reinforcement Patterns	Contingency Category 8	Contingency Category 7

Source: (Foxall 2010b, p. 10)

Within the BPM the allocation of consumer purchase and consumption behaviours to one brand over other brands is a function of the net relative strength of patterns of utilitarian and informational reinforcers of buying and using the one brand vis-à-vis the relative patterns offered by the functional substitutes in a brand repertoire (Foxall *et al.* 2007). The *net relative strength of patterns of utilitarian and informational reinforcement* refers to the positive utilitarian and informational consequences net of negative outcomes generated on buying and consuming a particular brand.

Utilitarian reinforcement and punishment, informational reinforcement and punishment, and antecedent setting scope stimuli are considered as orthogonal extra-personal variables acting independently and in combination within a particular situation to generate purchase and consumption behaviour (Foxall 1990, 1998b, 2010b; Vella and Foxall 2011; Yani-De-Soriano *et al.* 2013).

4.3 Selection by Marketing Consequences

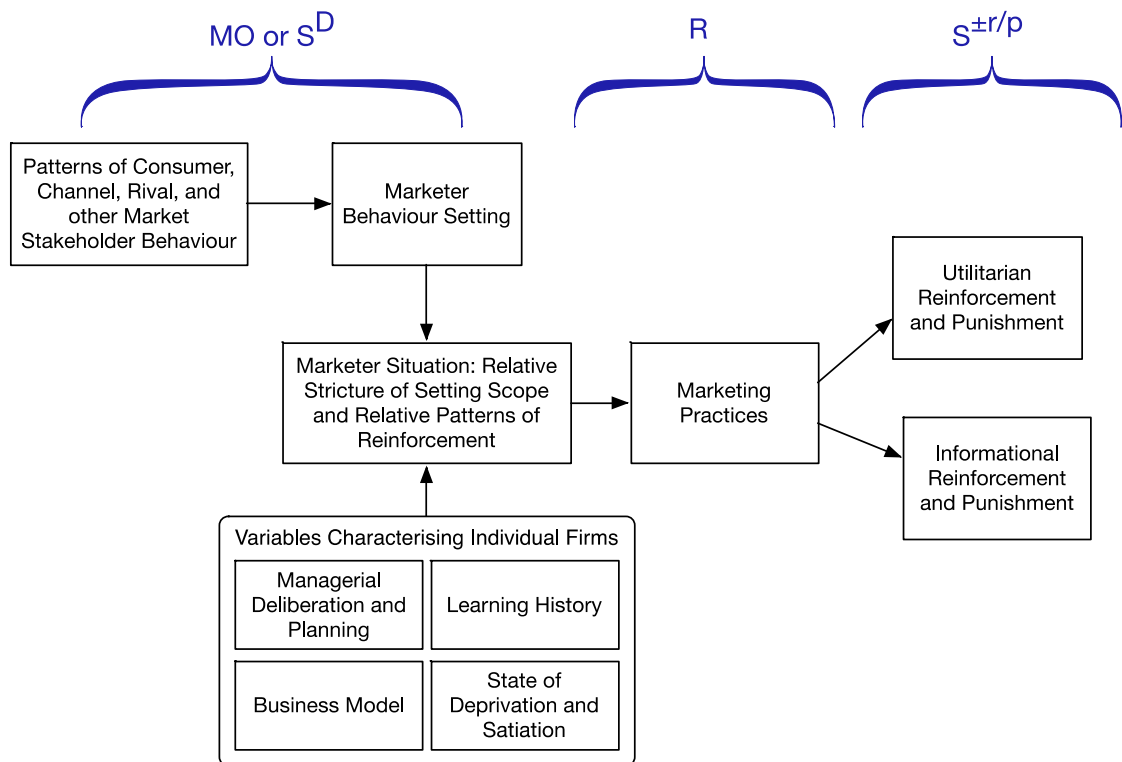
Having established the elements of the BPM as these relate to purchase and consumption, the discussion turns to discussing the components of the SMC framework. Section 4.3.1 clarifies and exemplifies the elements of the

BPM as these relate, in analogy, to the firm²¹⁰. Section 4.3.2 characterises environmental interaction through a second interpretive device, the notion of bilateral contingencies suggesting how the selective environment (i.e., the various stakeholders comprising the market) operates on the marketing practices of firms. The section concludes by elaborating on a definition of the market and the problems it poses which the firm needs to resolve to survive and reproduce. The market problem is the basis for identifying selective criteria.

4.3.1 The BPM for Marketing Practices

Following the characterisation of the BPM for purchase and consumption, the model in application to marketing practices is represented in Figure 37.

Figure 37 – The Behavioural Perspective Model for Marketing Practices



²¹⁰ In their research, Vella and Foxall (2011) do not provide an empirically based description of the variables of BPM as these relate to marketing practices. As a result, their definitions remain as tentative and broad characterisations and, sometimes, even ambiguous. This neglect impairs a structured, focused, and consistent application of the BPM in research related to the firm. Given the research objectives, Section 4.3.1 addresses the need for greater precision in specifying the components of the BPM in relation to marketing practices.

A: The Individual Firm: The Operation of the Internal Environment on Behaviour

In terms of the personal variables representing the individual within the BPM, any given firm may be conceptualised in terms of the contingencies specified by its learning history and by its business model, the state of deprivation and satiation in relation to the business model, and, managerial deliberation and planning.

Learning History

Any individual firm is unique by virtue of its *learning history*. Recalling earlier discussions, the following properties are inferred with respect to the learning history of the firm: First, the construct encapsulates the entire marketing repertoire learnt over generations, i.e., the practices that have been selectively acquired, retained (inherited) and eliminated in the course of repeated environmental interactions and cycles of variation, selective retention-elimination, and replication. Learning history represents 'habit' or the potential for the continuity of behaviour within sufficiently similar behaviour settings (Foxall 1993b, 1997b, 2010b). Drawing the analogy from consumer behaviour, it is the learning history that links the elements in the patterns of behaviour from one situation to the next (Foxall 1993c). Thus, learning history captures *quasi-stable properties* since it describes the durable cumulative changes brought about in the practices of the individual firm through a lifetime of interaction with its environment.

Second, learning history may be conveniently characterised as an aggregate set of contingencies of reinforcement summarising the signalling and consequential operations that reliably and consistently predict the behaviour of an individual in sufficiently similar contexts (Foxall 1997b). This signifies that learning history holds **regulatory dimension** reflecting the potential for the continuity of behaviour within sufficiently similar behaviour settings (Foxall 1993b, 1997b, 2010b). These contingencies have been established empirically and are predictive only in this sense and given sufficiency of similarity of present conditions with the past. The dimension appears similar to what Hodgson (2003), Hodgson and Knudsen (2010), Hodgson (2008), Hodgson and

Knudsen (2008), and Hodgson (2009b) call a “generative” relationship between what is stable, regular, and predictive about behaviour and what is actually observed as a result from the interaction with the environment. Therefore, learning history also implies behaviours that are **heritable** across different contexts of behaviour over time. Thus, the construct may be considered as being analogous to the **replicating genotype** (Foxall 1993b, 1997b; 2010b, cf. Baum 2000). Learning history is causally involved in replication because it ensures behavioural continuity given sufficiently similar environmental conditions.

Third, learning history is activated by and primes the behaviour setting: the arrival of the firm in a particular setting activates its history (the salience, presence, and absence of stimulation). In turn, learning history determines which stimuli achieve discriminative function (which elements are reinforcers and punishers) and which stimuli achieve motivational function (i.e., the salience and effectiveness of the stimuli or the degree to which a consequence is reinforcing or punishing within the particular situation) (Foxall 1992b, 1996b, 1997b; Fagerstrøm *et al.* 2010; Foxall 2010b).

Business Model

Profit-making organisations have *business models* that describe the particular design or structure for creating and delivering value to customers and how to generate revenue and make profit (Teece 2012). Business models represent the “business logic required to earn a profit” defining “the way the enterprise ‘goes to market’” (Teece 2012, p. 174). Whether implicit or explicit, “a business model articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value. In short, it’s about the benefit the enterprise will deliver to customers, how it will organize to do so, and how it will capture a portion of the value that it delivers.” (Teece 2012, p. 179). Business models are not static but may be changed (Teece 2012)²¹¹.

²¹¹ Within the case study, manufacturers, retailers, and distributors are assumed to have different models while the business models of each category of members at each tier in the ice cream supply chain are assumed to share common traits.

The business model construct is being suggested to apply Skinner's (1981) idea of "contingencies of survival" to firm practices and capture how the *basic conditions for biological survival and reproduction* govern firm practices-environment interactions. Thus, for example, a manufacturer seeking national coverage is more sensitive to the issues surrounding the mass production and marketing of ice cream than a small family-run retail outlet that only serves its own home-made ice cream to its local clientele.

Deprivation and Satiation

Within the BPM, state variables are not properly defined. The more recurring description, however, emphasises the consumer levels of deprivation, the ability of the consumer to pay given budgetary constraints, and the availability of credit (Foxall 1996b, 2010b).

Vella and Foxall (2011) focus only on deprivation and define the term referring to "a state of not having access to some level of utilitarian and/or informational benefits and access to these benefits (especially utilitarian) is important" (p. 61). For example, if revenues, profits, access to working and investment capital, and capacity utilisation are at levels lower than planned, the firm is said to be in a state of deprivation. Deprivation is also empirically demonstrated when organisations are barred from accessing certain prominent reinforcers such as brands that have a high commercial value or a particularly well-connected distribution channel (Vella and Foxall 2011). Their evidence suggests additional factors contributing to deprivation including (a) constraints imposed and opportunities afforded by path dependence, (b) the availability and access to working capital, cash flows, and profits for reinvestment in technology, production, and marketing, and, (c) productive and marketing capacity utilisation (Vella and Foxall 2011). This characterisation, however, raises questions of whether such an interpretation is simply one dimension of learning history.

Given the relation of deprivation and satiation to MOs²¹², state variables are retained and operationally defined in a manner that captures the meaning of the terms as utilised in the EAB (cf., Vella and Foxall 2011).

Deprivation is an operation where the environmental arrangement functions to withhold access to the utilitarian and informational reinforcers that satisfy the contingencies expressed in the business model either by reducing availability or by increasing the reinforcement interval. The reinforcers involved are working and investment capital, cash flow, profits, and production/marketing capacity. Given motivating operations, deprivation may have a value altering effect in establishing operations.

Satiation is an operation where the environmental arrangement functions to present the utilitarian and informational reinforcers that satisfy the contingencies expressed in the business model either by increasing availability or by reducing the reinforcement interval until emissions that originally produced such environmental consequences weaken and eventually stop. Given motivating operations, satiation may have a value altering effect in abolishing operations.

Managerial Deliberation and Planning

Vella and Foxall (2011) also draw the analogy between the deliberative behaviour of consumers and that of managers suggesting that environmental stimuli acquire meaning in the presence of deliberating behaviours. This notion is roughly analogous to the managerial dimension including decision-making.

Managerial deliberation and planning (rule construction and precurent behaviour²¹³) may be thus characterised as observable in explicit self-rules

²¹² Within the BPM, deprivation and satiation are tied to the *effectiveness* of reinforcers and punishers (e.g., Foxall 1990, 1997b, 2010b; Vella and Foxall 2011) an idea captured by MOs. Refer to Chapter 3, Section 3.2.5.

²¹³ Precurrent behaviour was defined in Chapter 3 (Section 3.2.7) as behaviour that functions as a discriminative stimulus for subsequent action: for example, preparing an annual marketing plan. Writing the plan is precurent behaviour while the plan itself is a discriminative stimulus. Other examples of precurent behaviour include analysing and studying the environment through private (thinking) and public verbal calculations, devising and running experimental models that mimic the physical world, statements of purpose (setting goals), forecasting and so on (Skinner 1966b, 1969, 1984d, h). Marketing plans, objectives, and forecasts, therefore, are taken as examples of the setting of self-rules (Vella and Foxall 2011) and constructing discriminative stimuli.

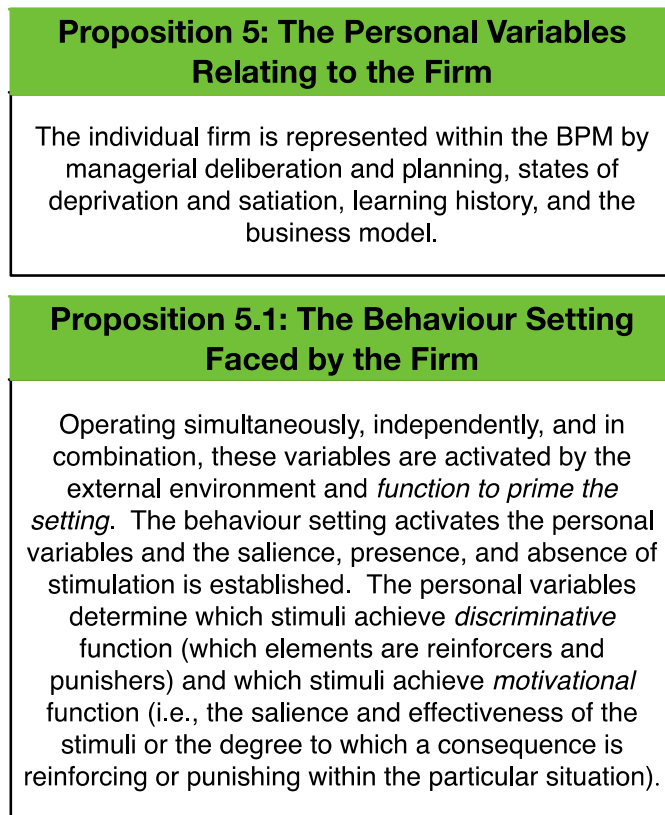
such as production and marketing objectives and plans and in the rules imposed by others such as the profit, market share, and related goals imposed by a mother company (Vella and Foxall 2011). Given the operant understanding of rules and problem solving, managerial deliberation also functions to extract rules with respect to prevailing (e.g., observations on the behaviour of rivals and the consequences of such behaviour) and past contingencies. Such behaviour also involves extracting rules from managerial experience and corporate history. Within this research, deliberation is also understood to encapsulate explicit (e.g., coded within business intelligence databases) or tacit, formal or informal firm specific instruction sets for retaining and replicating those dimensions of the marketing mixes that were functionally effective in generating acceptable levels of profitable exchange (and, therefore, survival value). Managerial deliberation is also related to rule-following behaviour contingent upon a history of success and failure in following rules set by others (Foxall 1999c; Vella and Foxall 2011).

In their interpretation Vella and Foxall (2011) appeal to basic economic and marketing principles on how firms are reasonably expected to behaviour, i.e., the “reasonable conduct of business” (p. 64). Within this research such *generic business rules* are understood as guiding management decision and, therefore, are subsumed under the managerial deliberation construct.

These four elements are analogous to the “personal variables” (e.g., Foxall 1996b) characterising consumers and comprise the reinforcement criteria of the firm. The function of these elements is assumed to be identical to the manner in which the variables function in consumer behaviour.

Therefore:

Figure 38 – Research Propositions Capturing the Personal Variables Relating to the Firm and the Nature of the Interaction of these Variables with the Behaviour Setting Faced by the Firm



Recalling Chapter 3, the *genotype* (as applicable to the social domain) is defined as a set of explicit or implicit quasi-stable instructions or rules that function (i.e., are causally involved) to retain and replicate acquired behaviour patterns with a degree of fecundity (a relatively high volume of copies), longevity (persistence), and fidelity (an accurate reproduction of copies) (Hull 1980; Becker 2001; Hodgson and Knudsen 2010). In combination, personal variables (and especially learning history) may be considered as analogous to the genotype when these hold regulatory dimension, i.e., when these function to retain and replicate behaviour given sufficient similarity of behaviour setting. The *phenotype* is the result of an interaction of the rules with the prevailing environment, i.e., behaviour resulting from a direct exposure to the contingencies.

Therefore:

Figure 39 – Research Proposition Capturing the Regulatory Dimension of the Personal Variables Relating to the Firm – Continuity, Heritability, and Replication

Proposition 5.2: The Regulatory Dimension – Continuity, Heritability, and Replication

The personal variables hold *regulatory dimension* since these signify the potential for the continuity of already acquired behaviour within sufficiently similar behaviour settings. Thus, if practices continue these personal variables signify *replication and heritability* of the rules summarising the contingencies expressed by the variables. (Given the personal variables summarising the individual firm sufficiently similar settings occasion behavioural continuity.)

B: The Dependent Variable: Marketing Practices

Within the Marketing Firm, marketing is understood from the perspective of the *marketing concept*. “a philosophy that holds that achieving organisational goals depends on knowing the needs and wants of target markets and delivering the desired satisfactions better than competitors do” (Kotler *et al.* 2013, p. 10). This customer-centric rather than production-focused philosophy is assumed to pervade the entire organisation rather than being limited to the marketing department (Drucker 2007; Kotler *et al.* 2013)²¹⁴.

Following Vella and Foxall (2011), the marketing mix is used within the SMC as a proxy measure for marketing behaviour and is summarised by the 4 P’s (price, product, promotion, and place) which are categories of the different elements of a firm’s marketing programme aimed at and designed for delivering value to target business and consumer markets (Kotler *et al.* 2013) (Figure 40). Value is interpreted in terms of relative patterns of utilitarian and informational reinforcement and punishment (e.g., Foxall 1993c, 1996b; Foxall 1997b, 1999c, 2010b; Vella and Foxall 2011). It is important to distinguish between the actual

²¹⁴ This seems to be what Foxall (1999b) means by the term “marketing-orientated management” (e.g., p.230).

effects of the marketing mix and the programmed effects for which mixes are designed (Foxall 2010b; Vella and Foxall 2011)²¹⁵.

Figure 40 – Non-exhaustive List of Elements in the Marketing Mix

Product

- All variables related to delivering physical or service offerings that satisfy functional and symbolic customer needs • Considerations of packaging, branding, product features, warranties, labelling, product development and so on.

Price

- Elements related to how much a firm will charge for its product offering and includes aspects as distribution and retail discounts, credit terms, rebates, and so on.

Promotion

- Personal selling, advertising, sales promotions (special incentive schemes, additional discounts and bonus payments, prizes), and public relations efforts.

Place

- Atmospherics, distribution, and retail strategies, merchandising (space allocation, point-of-sale materials, special displays, freezer cabinets), retail outlet type, locational convenience, cold chain delivery, channel coverage, warehousing and so on.

Source: Vella and Foxall (2011) and Kotler *et. al* (2013)

Two types of marketing mixes are to be identified: one geared for consumer markets and another geared for channel segments. Both forms of mixes are assumed to work in tandem. The elements of the mix within a given setting function as possible physical, temporal, social, and regulatory utilitarian and informational reinforcers and punishers contingent upon consumers and channel members emitting certain behaviours²¹⁶.

The elements of the marketing mix are among the signal environmental influences within real world behaviour settings that determine channel and consumer behaviour (e.g., Kotler *et al.* 2013).

²¹⁵ So, although the launch of a new product may be supported by a marketing campaign programmed to generate sales, the launch and campaign may have unintended negative consequences. In 1985, Coca-Cola introduced a change in the formula of its popular soft drink in a bid to revitalise the brand in the USA. Instead, the company faced heavy consumer protests that ended only when the firm returned to the original formula (Coca-Cola 2014).

²¹⁶ For a particularly complete interpretation of the elements of the marketing mix in terms of the three-term contingency refer to Foxall (1997a).

The Strategic Options Open to the Firm

Understanding the purpose and function of the firm from an operant perspective requires a focus on what its behaviour accomplishes in the environment (Foxall 1997b, 1999b; Vella and Foxall 2011). The main consequences lie in the relative strengths of rates of consumer approach and escape-avoidance that the marketing mixes respectively engender and deter and the likelihood that such responses classes terminate in profitable literal exchange (Foxall 1999b; Vella and Foxall 2011, 2013)²¹⁷. Therefore, according to the Marketing Firm, firms emerge and exist to market while economising on the costs of conducting market transactions (Foxall 1999b; Vella and Foxall 2011, 2013). The assumption is retained within this research.

The Marketing Firm does not predict the topography of the mixes that firms deploy. Instead it focuses on hypothesising how price, products, brands, promotion, and logistical variables operate on the customer and rival settings: (a) to shape and maintain customer and consumer approach behaviour and increase the probability that such behaviour terminates in literal exchange in relation to rivals, and (b) to weaken and terminate escape-avoidance and reduce the likelihood that such behaviour terminates in literal exchange with rivals (Foxall 1990, 1997b, 1999b; Vella and Foxall 2011, 2013). According to Foxall (1990, 1997b, 1999b) the market behaviour of the firm functions to gain control of customer (and rival) contingencies of utilitarian and informational reinforcement to generate profitable literal exchange in either or in both of the following ways: First, by regulating and modifying the various elements of the marketing mix to manage the stricture of the scope of the behaviour setting thereby controlling the range of behavioural alternatives available to customers and consumers and compelling them to act in favourable ways. Secondly, by regulating and modifying the various elements of the marketing mix to manage the customer and consumer patterns of utilitarian and informational

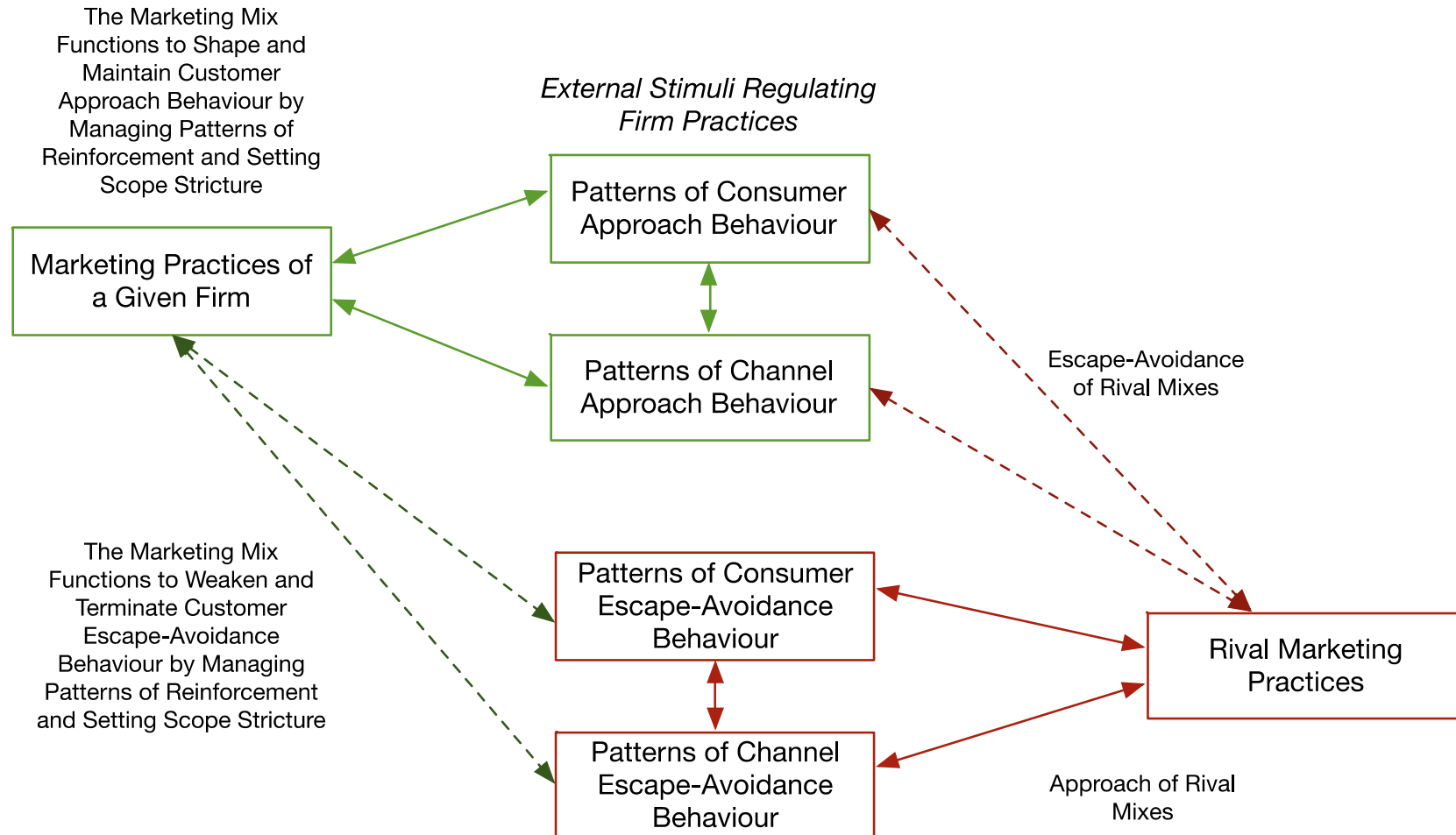
²¹⁷ Refer to Chapter 3, Section 3.2.4A on the interpretation of literal exchange. See also Section 4.3.2 on bilateral contingencies of reinforcement as the device used to analyse and interpret mutually reinforcing social interactions.

reinforcement to compel customers and consumers to act in particular ways (Foxall 1990, 1992a, 1997b, 1999b; Vella and Foxall 2011, 2013)²¹⁸.

Through their case study on Wall's Vella and Foxall (2011) establish comprehensive and extensive non-generalizable evidence supporting this claim. The working hypothesis is therefore retained as follows: marketing practices shape, strengthen, maintain channel and customer approach behaviour, and weaken escape-avoidance to increase the likelihood of profitable literal exchange through qualifying the setting scope and/or regulating consumer and channel patterns of reinforcement. In so doing marketing behaviour also thwarts competitive encroachment (Foxall 1990, 1999b; Vella and Foxall 2011, 2013) (Figure 41).

²¹⁸ It would seem that in his characterisation of how marketing management operates on the environment, Foxall (1999b) draws an analogy between how management designs and arranges consequential and antecedent scope stimuli in consumer behaviour settings to how experimental scientists engineer environmental conditions within a laboratory to identify the external factors that may come to control (and modify) the behaviour of research subjects.

Figure 41 – Managing Patterns of Reinforcement and Setting Scope Stricture: Effects on Approach and Escape-Avoidance

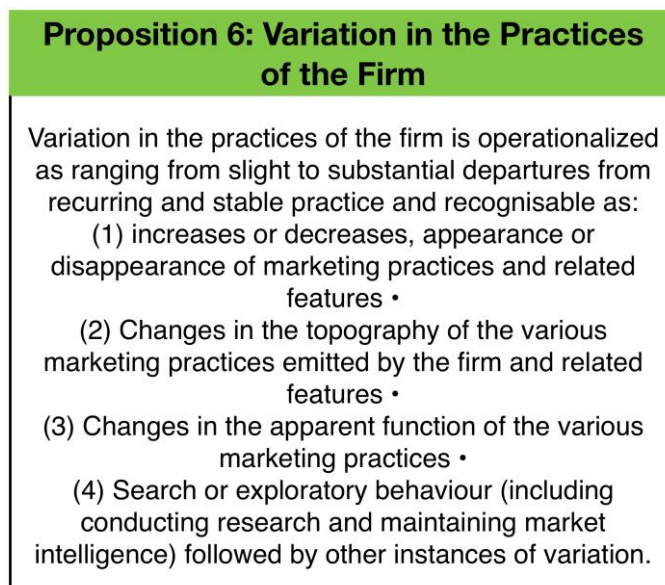


Importantly, marketing practices facilitate the interaction between the firm and its market environment and, ultimately, serve to generate profitable literal exchange given prevailing environmental conditions.

Marketing practices hold characteristic properties (e.g., the exclusivity feature of channel contracts) that vary on the capacity of such properties in generating patterns of channel customer and consumer approach (or escape-avoidance) and in associated likelihoods of such behaviour terminating in profitable literal exchange of the brands of the firm (or of those of rivals). Such capacities confer advantage or disadvantage within a specific environment to those who possess the practices and their characteristic properties. Actual marketing mixes (their components and properties) are interpreted as the phenotype. By way of analogy, the rules that summarise learning history of reinforcement and punishment contingent upon emitting these practices comprise (in part) the genotype that has contributed to the retention and replication of these mixes.

Within the research, variation is characterised as changes in marketing practices and related dimensions (Figure 42).

Figure 42 – Research Proposition Aimed at Capturing and Characterising Instances of Variation in the Practices of Firms



Heterogeneity in the Mix and the Instructional Dimension

Evolutionary models correctly presume persistent heterogeneity among competing firms as a reflection of variety, diversity, and differentiation and as driver of differential growth among firms (Nelson and Winter 1982; Metcalfe 1998, 2005; Bottazzi *et al.* 2010). Within this research, heterogeneity is characterised in terms of different marketing mix configurations emitted at each level of the supply chain.

Within any single generation, the marketing mix may be characterised as a set of differentiated instructions, descriptions of the contingencies, and injunctions designed and implemented by marketers. Mixes serve, primarily, as attempts to regulate and modify the behaviour of channel customers and consumers by capturing and controlling consumer (Foxall 1990, 1997b, 1999b, 2010b) and channel contingencies of reinforcement and punishment (Vella and Foxall 2011).

Mixes are assumed differentiated at source to be distinguishable from substitutes and complements within existing firm repertoires and from rivals. Most importantly, capturing the essence of consumer and channel contingencies involves the non-trivial problem of offering products and supporting marketing mixes that match or satisfy consumer and channel reinforcement criteria as accurately as possible. The environment within which firms operate is characterised by risk, uncertainty, and complexity that includes a relatively large number of affluent consumers, a range of differentiated offerings, relatively unpredictable physical environments, and, an evolving regulatory landscape. The behaviour of the firm is indeed non-prescient and lacking complete and accurate knowledge of the social and physical contingencies that could come to regulate and modify the behaviour of the various stakeholders. The positive consequences of marketing mixes are never guaranteed or known in advance. Thus, marketing may be characterised as problem-solving behaviours that evolve as resolutions to the problem posed by dynamic market environments characterised by a relatively large number of affluent consumers and a range of differentiated offerings. Firms emit competing and slightly or significantly differentiated mixes in an attempt to

match the prevailing environmental criteria. Attempts are hindered to result in an imperfect match to environmental conditions²¹⁹.

As informational signals, marketing mixes specify (descriptions or injunctions) customer contingencies: (a) environmental events that set the occasion for emission; (b) the behaviour to be emitted; and, (c) benefits and costs contingent upon emitting compliant and/or non-compliant behaviours. Some dimensions of the marketing mix, for example, a formal legally binding five-year outlet exclusivity contract function to specify antecedent setting scope stimuli (Foxall 1997b; Vella and Foxall 2011). The programmed effects of these mixes are not necessarily the same as the actual effects. It is only in interaction (i.e. direct exposure to the contingencies) with channel and consumer “personal” variables and other prevailing contingencies (e.g., rival mixes that function as encroachment) that the mixes achieve discriminative or motivational function (or remain neutral) among customers (Foxall 2010b; Vella and Foxall 2011). Direct exposure to the contingencies gives rise to actual and empirical strengths of consumer and channel approach and escape-avoidance, competitor encroachment, and profitable exchange transactions²²⁰.

Marketing mixes achieve regulatory dimension when the contingencies specified therein reflect empirical behavioural regularities. In other words, they become “customary” (Hodgson 2006). Upon trial and use, the patterns of net positive utilitarian and informational reinforcers represented by a particular mix alter consumers’ learning history (retention). When brands and supporting marketing mixes regularise aspects of consumer purchase (literal exchange) and consumption behaviour, it may be said that the mix replicates certain patterns of consumer learning history²²¹. The process results in differential fitness of various marketing mixes and reflects the extent of “loyalty” towards a particular repertoire of brands (Figure 43)²²².

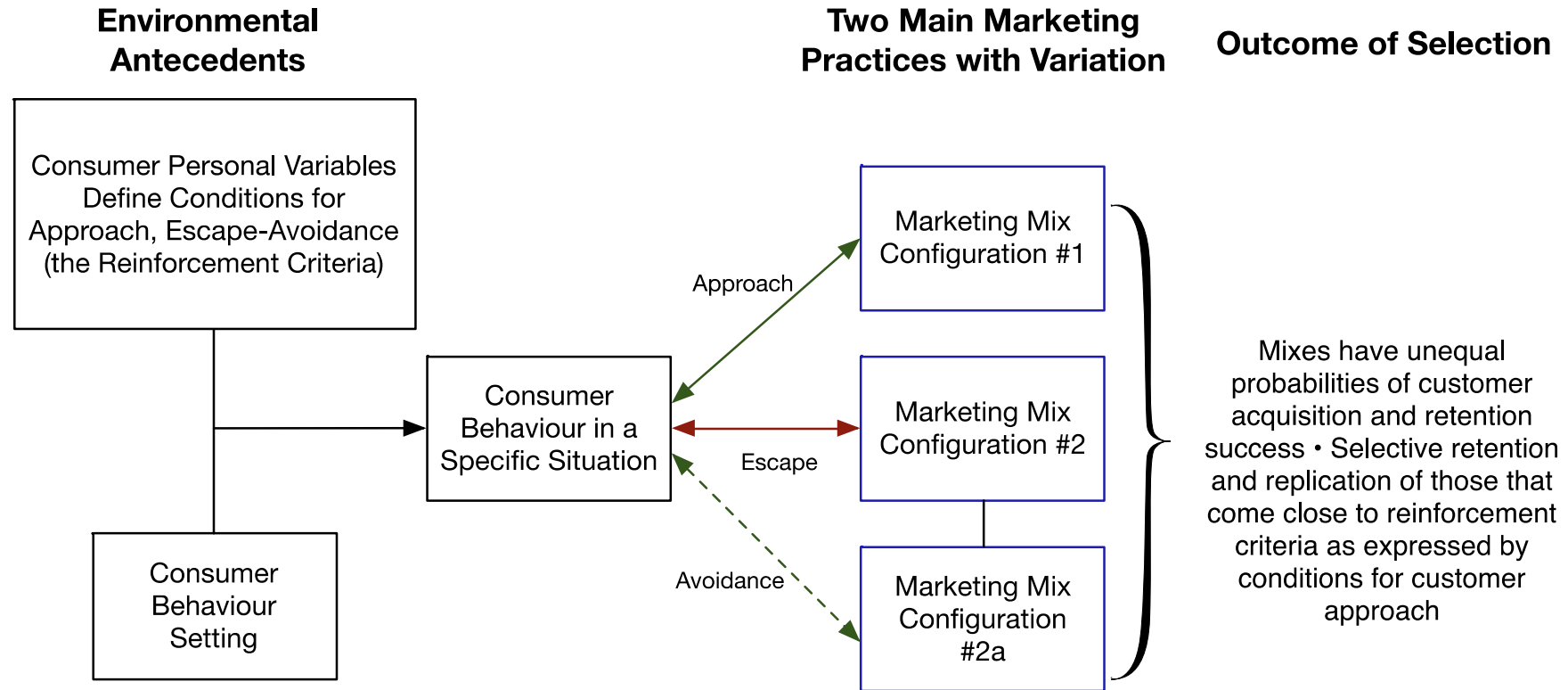
²¹⁹ These latter points are further explained in Section 4.3.2.

²²⁰ This last point is further amplified in Section 4.3.1D.

²²¹ As Alchian (1950) argues, “among all competitors, those whose particular conditions happen to be the most appropriate of those offered to the economic system for testing and adoption will be “selected” as survivors” (pp. 213-214). The argument implies a selective criterion.

²²² BPM research (see, for example, Foxall *et al.* (2007)) shows that buyers of certain fast moving consumer goods (FMCG) generally affect their purchases from among members of a small repertoire of tried-and-tested brand sets rather than to exclusively stick to any single brand.

Figure 43 – Marketing Mixes and Retention and Replication of Patterns of Consumer Behaviour



Benefits and Informational Feedback Arising From the Intersection of Literal Exchange Terminal Behaviours Reinforce (selectively retain) and Punish (selectively eliminate) Marketing Practices • The Rate of Approach in contrast to Rates of Escape-Avoidance Favours Marketing Mix Configuration #1

C: Reinforcement (Independent Variable: Consequential Stimuli)

The *Marketing Firm* also assumes that the marketing practices of the firm are reinforced and punished by two orthogonal consequential variables (Foxall 1999b; Vella and Foxall 2011, 2013). Therefore:

Figure 44 – Research Proposition Capturing the Assumed Bifurcation of Reinforcement

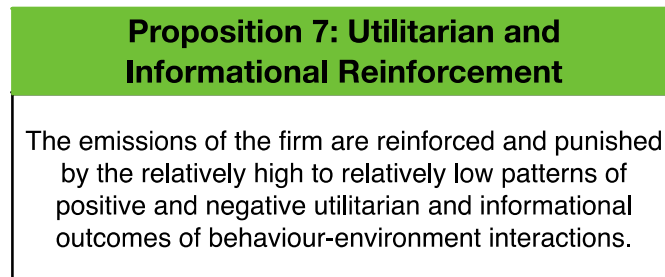
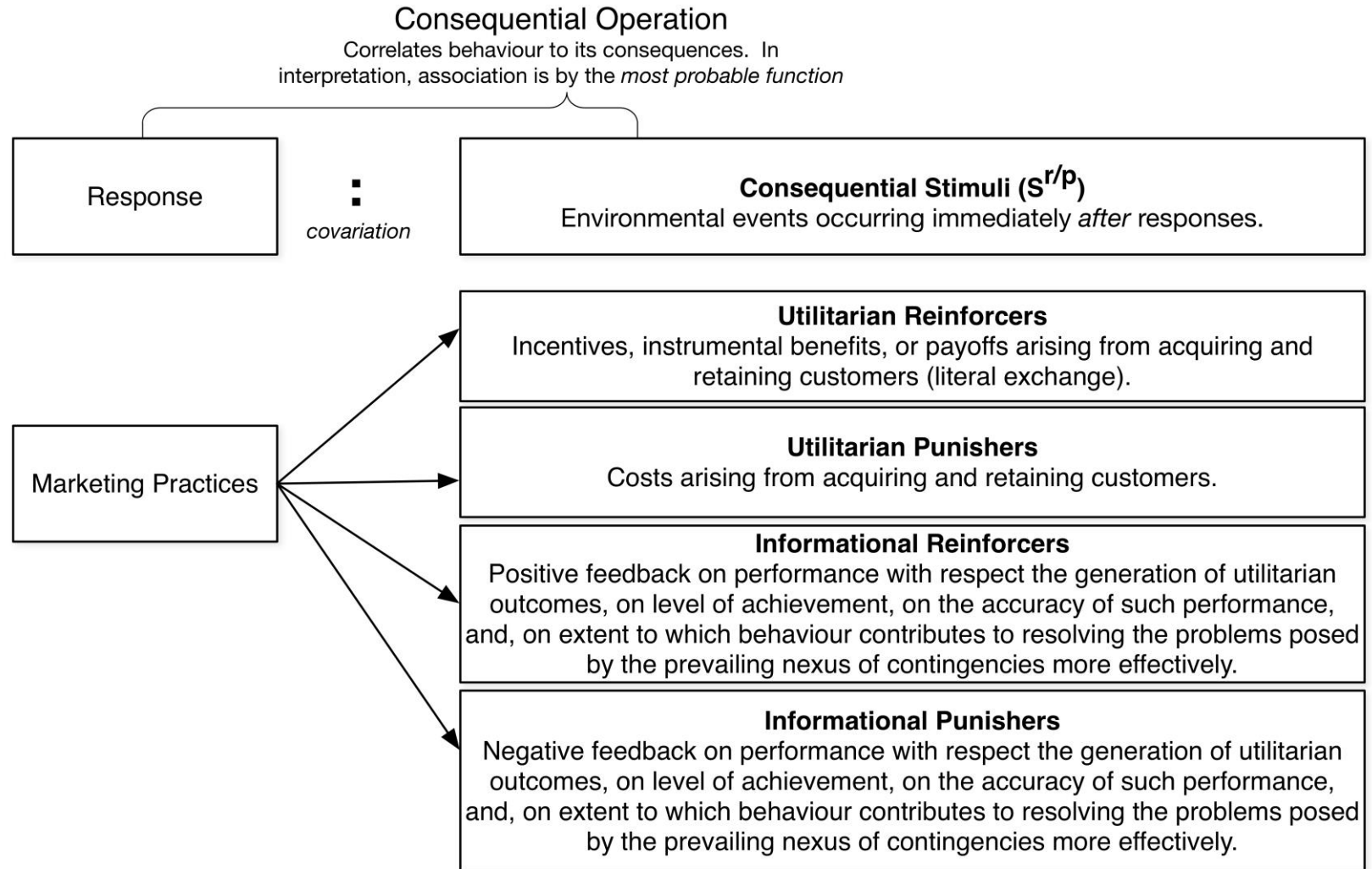


Figure 45 presents operational definitions of the consequences that reinforce and punish marketing practices.

Conceivably, the only source of *net* utilitarian reinforcement consistently occasioning the behaviour of the firm is literal exchange (utilitarian reinforcer) less the costs of transacting (utilitarian punisher) within the market²²³. From the point of view of the firm, consumer and channel approach and escape-avoidance behaviours function as informational reinforcers and punishers because these behaviours signal feedback with respect to how effective marketing practices are in generating approach and deterring escape-avoidance and associated likelihoods of such response classes terminating in profitable literal exchange.

²²³ Within the Marketing Firm (Foxall 1999b; Vella and Foxall 2011), these costs are those which Coase originally called “marketing costs” (Coase 1937, p. 392) or the “cost of market transactions” (Coase 1960, p. 15). These *market transaction costs* involve the expenditure incurred and investments made in searching for customers, gathering information about them, communicating and negotiating with customers, administering and monitoring contracts and so on (Coase 1960, 1988a; Foxall 1999b; Vella and Foxall 2011).

Figure 45 – Utilitarian and Informational Consequences of Marketing Practices



Source: Based on evidence from Vella and Foxall (2011)

Given the bifurcation of reinforcement, the operant conditioning processes by which physical and social environmental contingencies select cultural practices are now characterised by positive and negative *utilitarian* and *informational* reinforcement and punishment (Figure 46 and Figure 47)²²⁴. Thus, shaping, maintenance, and weakening processes require taking into account these two orthogonal sources of reinforcement (see Proposition 1, Figure 22²²⁵).

²²⁴ Both figures are based on: (a) definitions of reinforcement and punishment (Moore 2008, p. 117; Pierce and Cheney 2008, pp. 68-69; Johnston and Pennypacker 2009, pp. 73-7); (b) distinction between utilitarian and informational reinforcement and punishment (Foxall 1990, 1997b, 2010b); and, (c) empirical generalisations generated from Vella and Foxall (2011). To clarify, Moore (2008), Pierce and Cheney (2008), and Johnston and Pennypacker (2009) do not consider the bifurcation of reinforcement. The emphasis is added to highlight Foxall's contribution on the matter.

²²⁵ See Chapter 3, Section 3.3.1.

Figure 46 – Definition of Positive and Negative Utilitarian Reinforcement and Punishment Procedures

Modifier	Effect on Behaviour in the Class of Procedures termed as <i>Reinforcement</i>	Effect on Behaviour in the Class of Procedures termed as <i>Punishment</i>
<p>Positive <i>(Presentation, Occurrence, or Increase in Some Stimulus Event)</i></p>	<p>A class of procedures involving the occurrence of an utilitarian stimulus immediately following responding that results in an increase in some aspect of the response class over baseline levels.</p>	<p>A class of procedures involving the occurrence of an utilitarian stimulus immediately following responding that results in decrease in some aspect of the response class over baseline levels.</p>
<p>Example</p>	<p>Such consequential stimuli include the presence or increase or strengthening of sales revenues and volumes, positive cash flow and profits • The future rate of emission of behaviour that functions to present or increase such consequences increases.</p>	<p>Such stimuli include the presence or increase or strengthening in the costs involved in the acquisition and retention of consumers and customers • The future rate of emission of behaviour that functions to produce or increase such consequences decreases.</p>
<p>Negative <i>(Removal, Termination, or Decrease in Some Stimulus Event)</i></p>	<p>A class of procedures involving the termination of an utilitarian stimulus immediately following responding that results in an increase in some aspect of the response class over baseline levels.</p>	<p>A class of procedures involving the termination of an utilitarian stimulus immediately following responding that results in decrease in some aspect of the response class over baseline levels.</p>
<p>Example</p>	<p>Such stimuli include the absence, decreases or weakening of the costs involved in the acquisition and retention of consumers and customers • The future rate of emission of behaviour that functions to reduce or remove such consequences increases.</p>	<p>Such stimuli include the absence, removal, decreases, or weakening of sales revenues and volumes, positive cash flow and profits • The future rate of emission of behaviour that functions to remove or decrease such consequences decreases.</p>

Source: Definitions adapted from (Foxall 1990, 1997b; Moore 2008, p. 117; Pierce and Cheney 2008, pp. 68-69; Johnston and Pennypacker 2009, pp. 73-74, emphasis added; Foxall 2010b) • Empirical generalisations generated from Vella and Foxall (2011)

Figure 47 – Definition of Positive and Negative Informational Reinforcement and Punishment Procedures

Modifier	Effect on Behaviour in the Class of Procedures termed as <i>Reinforcement</i>	Effect on Behaviour in the Class of Procedures termed as <i>Punishment</i>
<p>Positive (Presentation, Occurrence, or Increase in Some Stimulus Event)</p>	<p>A class of procedures involving the occurrence of an informational stimulus immediately following responding that results in an increase in some aspect of the response class over baseline levels.</p>	<p>A class of procedures involving the occurrence of an informational stimulus immediately following responding that results in decrease in some aspect of the response class over baseline levels.</p>
<p>Detail</p>	<p>Such consequential stimuli include the presence or increase or strengthening of utilitarian reinforcers, consumer and customer approach, market share, rival escape-avoidance, profitability, working and investment capital, positive alignment of performance with respect to the achievement of organisational plans, goals (including problem resolution), and targets, and positive capacity utilisation • The future rate of emission of behaviour that functions to present or increase such consequences increases.</p>	<p>Such stimuli include the presence or increase or strengthening in utilitarian punishers, consumer and customer escape-avoidance, rival approach, losses, working and investment capital, negative (mis)alignment of performance with respect to the achievement of organisational plans, goals (including problem resolution), and targets, and negative capacity utilisation • The future rate of emission of behaviour that functions to produce or increase such consequences decreases.</p>
<p>Negative (Removal, Termination, or Decrease in Some Stimulus Event)</p>	<p>A class of procedures involving the termination of an informational stimulus immediately following responding that results in an increase in some aspect of the response class over baseline levels.</p>	<p>A class of procedures involving the termination of an informational stimulus immediately following responding that results in decrease in some aspect of the response class over baseline levels.</p>
<p>Detail</p>	<p>Such consequential stimuli include the absence, decreases or weakening of utilitarian punishers, consumer and customer escape-avoidance, rival approach, losses, working and investment capital, negative (mis)alignment of performance with respect to the achievement of organisational plans, goals (including problem resolution), and targets, and negative capacity utilisation • The future rate of emission of behaviour that functions to reduce or remove such consequences increases.</p>	<p>Such stimuli include the absence, removal, decreases, or weakening of utilitarian reinforcers, consumer and customer approach, market share, rival escape-avoidance, profitability, working and investment capital, positive alignment of performance with respect to the achievement of organisational plans, goals (including problem resolution), and targets, and positive capacity utilisation • The future rate of emission of behaviour that functions to remove or decrease such consequences decreases.</p>

Source: Definitions adapted from (Foxall 1990, 1997b; Moore 2008, p. 117; Pierce and Cheney 2008, pp. 68-69; Johnston and Pennypacker 2009, pp. 73-74, emphasis added; Foxall 2010b) • Empirical generalisations generated from Vella and Foxall (2011)

D: The Environment (Independent Variable: The Marketer Behaviour Setting and Scope)

Vella and Foxall (2011) treat any feature of the antecedent environment as a possible stimulus event, which varies on quality, quantity, and effectiveness: The presence or absence of a retail trade, the number of retailers, the structure of the retail trade, the geographical location of a given retailer, the issue of whether a retail business has one location or several, and the actual and potential volume of business that a retailer generates due to its location and due to its target consumer segment (Vella and Foxall 2011). These and other elements are interpreted as possible physical, temporal, social, and regulatory utilitarian and informational reinforcers and punishers.

Given learning history, these events may be categorised in either of two stimulus classes: (a) as scope qualification events they may operate to compel particular behaviours depending upon the degree of setting scope stricture, and/or, (b) as consequential events they function to signal the availability of reinforcement within the current setting (as S^D) or the degree to which a consequence is reinforcing or punishing within a particular situation (as MOs).

Stimulus events may be either internal or external to the firm: the *managerial behaviour setting* characterises the physical, social, temporal, and regulatory events that define the context for managerial deliberation, and, thus, in conjunction with learning history and the business model, mediates the interpretation of the marketer behaviour setting to determine (a) the extent of the setting scope stricture and whether events acquire discriminative or motivating function, and, (b) the appropriate emissions (cf. Vella and Foxall 2013). The managerial behaviour setting is analogous to the internal selective system²²⁶.

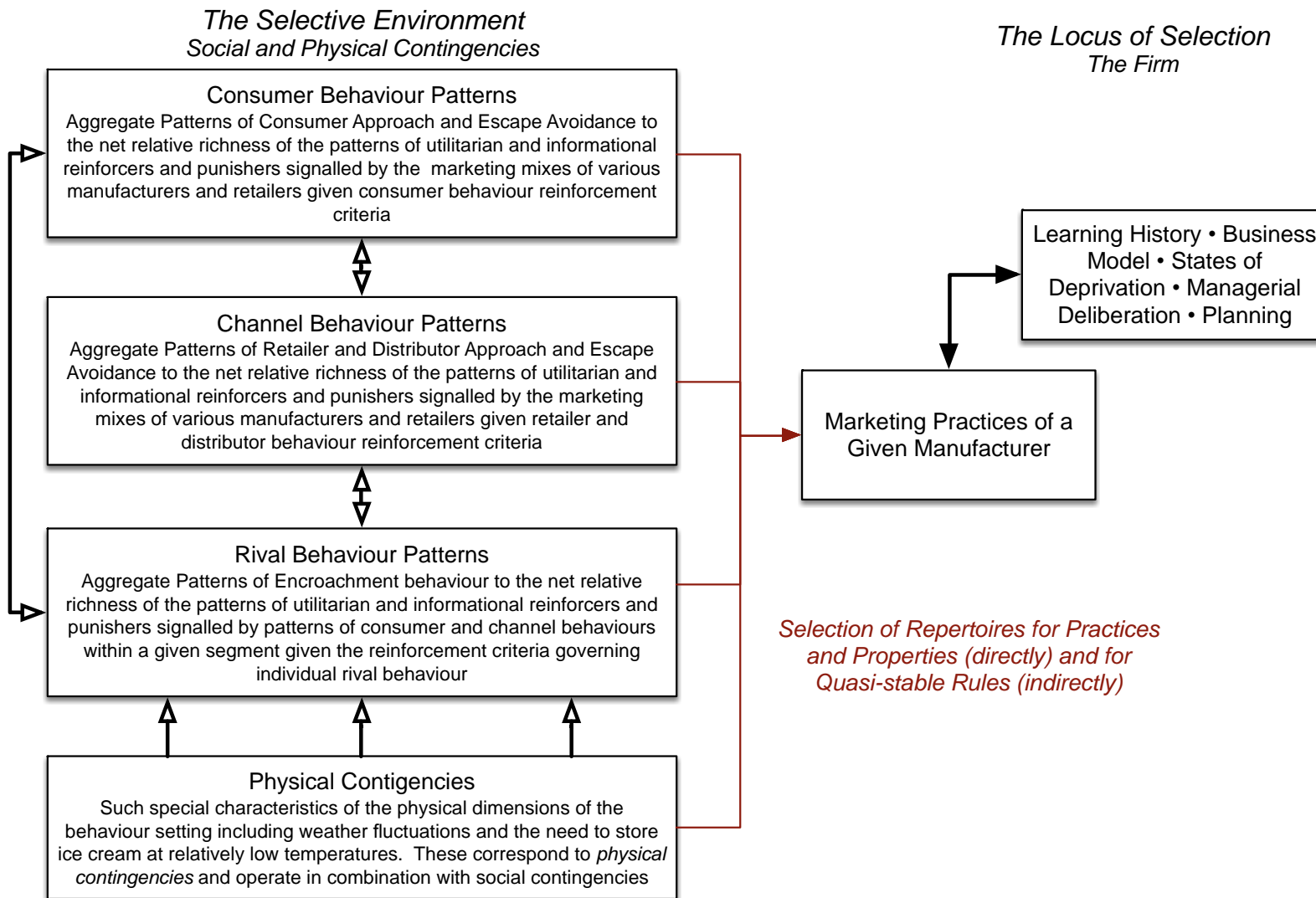
The *marketer behaviour setting* characterises the context of behaviour and the situational influences on firm behaviour external to the firm. These

²²⁶ Neo-Darwinian perspectives of organisational evolution contemplate two inter-related selection dynamics: one occurring within the firm and another within competitive markets (Knudsen 2002). The research considers only selection dynamics external to the firm and within product markets.

influences are delineated by the aggregate regulatory, social, temporal, and physical dimensions of the behaviour of all other individual stakeholders as stimulus events external to the firm (Foxall 1999b; Vella and Foxall 2011).

The marketer behaviour setting or market is analogous to the *external selective system* (Figure 48). The sole focus of this research is on these external contextual influences. Each of these elements exercises a degree of control on the behaviour of the firm. On the average, stakeholders to a given market do not have sufficient power on their own to effect any appreciable changes (Foxall 1999b) even though the degree of dominance of a given firm might suggest otherwise (Vella and Foxall 2011). Thus, variations emitted by the firm are only loosely coupled with the selective environment and the selective criteria.

Figure 48 – The Main Elements of the Marketer Behaviour Setting as the Selective Environment



The marketer behaviour setting also varies in relative scope stricture along a continuum from relatively closed to relatively open settings. The *marketer behaviour setting scope* reflects the extent to which the current behaviour setting compels a particular pattern of marketing practices and indicates how far physical characteristics, consumers, channel customers, rivals, and other stakeholders (e.g., banks, investors, shareholders) other than the firm control the settings in which marketing occurs.

From an evolutionary perspective, the stricture of the setting scope is positively related to the range of behavioural repertoires and variations thereof that may be emitted and, hence, to the quantity of evolutionary paths or trajectories along which marketing practices may evolve. Successive generations of relatively more open settings are those from which the aversive control of the environment is largely absent and occasions wider variation in the practices of the single firm and several trajectories. Conversely, successive generations of relatively more closed settings reduce the opportunities for variation in the practices of the single firm and therefore reduce the number of evolutionary paths along which practices evolve. The relationship between successive generations of setting scope stricture and the quality of each of these paths is unknown²²⁷.

A given marketing mix configuration generates some strength of approach and escape-avoidance among channel members and customers. Customer and channel approach is characterised as holding a relatively high probability of terminating in literal exchange, whereas escape-avoidance is characterised as having a relatively low probability of terminating in literal exchange with the given firm. Rival behaviour functions to either increase or decrease the probability of consumer and channel behaviour in terminating in literal exchange with any single firm. Rival offerings that offer richer patterns of reinforcement appear/are assumed to increase the rate of escape-avoidance as more channel customers and consumers defect to rival brands. Conversely, poorer patterns of reinforcement reduce defection rates. Rivals gaining control

²²⁷ However, if Foxall (1993c, 2013) is correct in saying that relatively open settings are those wherein behaviour is “overwhelmingly” regulated by positive reinforcement, then successive generations of more open settings should result in qualitatively richer patterns of reinforcement on offer than in relatively closed settings. Future research ought to examine this hypothesis.

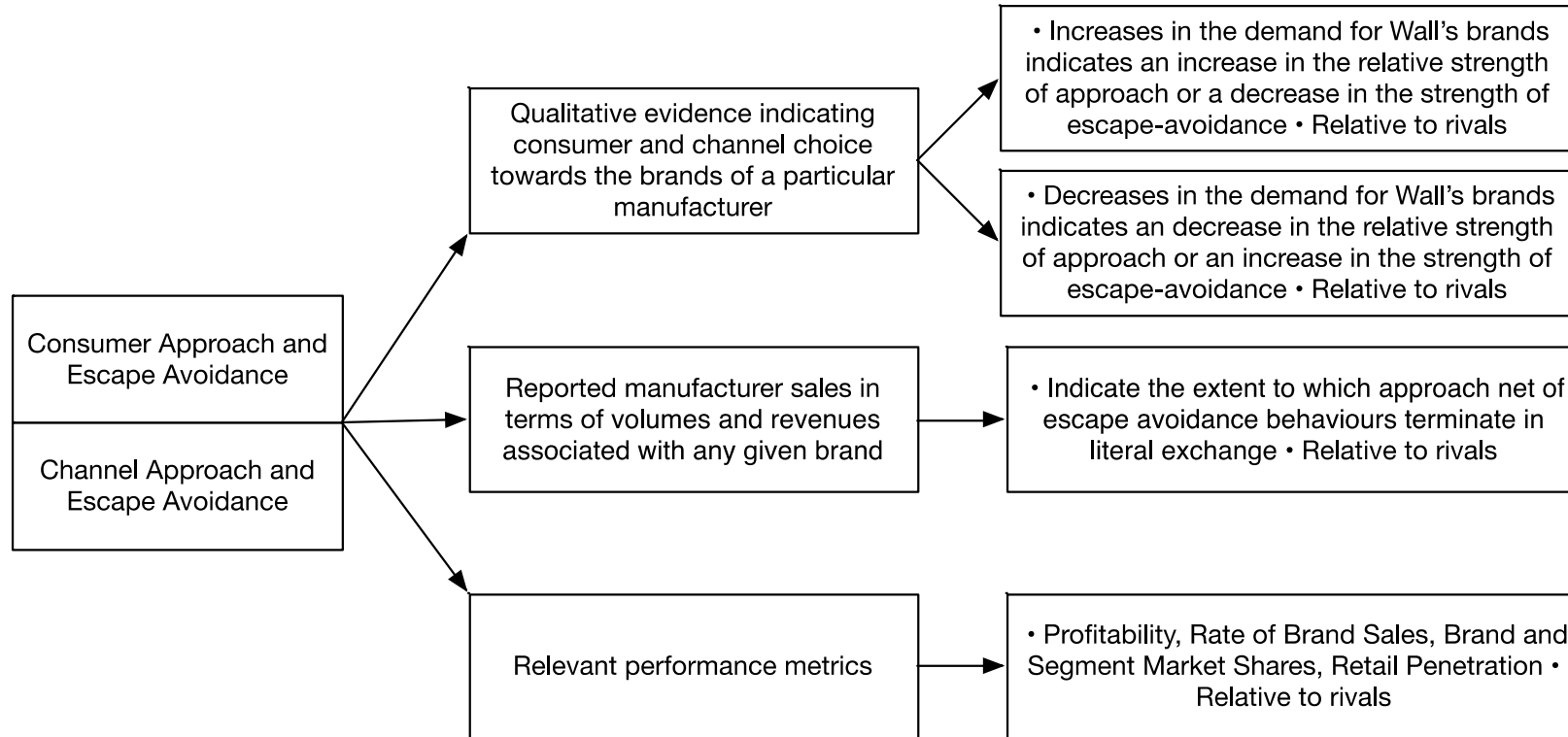
of contingencies through setting scope stricture produce similar effects on consumer and channel approach and escape avoidance (Vella and Foxall 2011; Vella 2012; Vella and Foxall 2013) (Figure 49).

Each of these stakeholder behaviours also reflects different contingencies of reinforcement and punishment that regulate and modify behaviour. For example, consumer behaviour may be reinforced by locational convenience, retail opening hours, brand variety, and so on. The BPM for purchase and consumption aids in defining and identifying the evidence that counts as the contingencies regulating consumer choice behaviour. Retailer and distributor behaviour may be reinforced by the demand for the potential sales volumes and profits associated with a set of manufacturer ice cream brands, the pricing, volume discounts, the financial incentives and perks on offer by manufacturers, speed at which the manufacturers sell at retail, and so on. Manufacturer behaviour is constrained by capacity utilisation, cash flow etc. (Vella and Foxall 2011). Channel and rival manufacturer behaviour is also a function of respective business models and the BPM aids in the definition and identification of relevant evidence.

Together these conditions represent a variety of selective criteria that need to be empirically derived. These criteria are conceived as rules in the marketer behaviour setting summarizing the consumer, channel, rival, and regulatory contingencies of reinforcement and punishment.

The factors that represent the operation of the selective mechanism may be described in terms of the intersection and mutually reinforcing interactions of the marketing practices of firms and customer and channel approach, and rival encroachment. The actual operation of the selective mechanism is measured in terms of recorded sales revenues and volumes, profits, individual or overall brand penetration at retail and at distribution, and relative market and brand shares at each channel tier.

Figure 49 – Qualitative Measures for Assessing Consumer and Channel Strength of Approach and Escape-Avoidance



Source: Derived from Vella and Foxall (2011)

E: The Marketer Situation

A construct analogous to the consumer situation, the *marketer situation*, is proposed as an empirically available summary of the interaction of the firm (i.e., its unique learning history including business model, state of deprivation and satiation, managerial deliberation dimension) and elements within the marketer behaviour setting. As in the case of the consumer situation, it is the deepest level of analysis of market selection dynamics, and, for the purposes of the research, the marketer situation stands as the unit of analysis in the case study²²⁸.

4.3.2 Environmental Interaction

The preceding section provided operational definitions of the various elements of the BPM as applied to marketing practices and hypothesised the functional relations among these variables. The following describes a second device, *bilateral contingencies of reinforcement*, which together with the BPM is a means to analyse and interpret behaviour-environment relations involving the firm and its various stakeholders.

A. Bilateral Contingencies of Reinforcement

The Marketing Firm places central emphasis on firm-customer interactions and, consequently, on literal exchange: “a functional analysis of the firm must begin with the behaviour of its key stakeholder, that which calls it into existence and rationalises its use of resources; that is, with consumer behaviour” (Foxall 1999b, p. 211)²²⁹.

The importance of environmental interaction including the reciprocal/interlocking nature of social behaviour has already been noted in Chapter 3. The main protagonists of environmental interactions within this

²²⁸ See Chapter 3, Section 2.3.4.

²²⁹ Contrast the view with that expressed by Winter (1988), for example. According to Winter (1988) the manner in which the firm behaves vis-à-vis to customers and all its stakeholders is subsumed under the notion of organizational routines. These are, therefore, “aspects of the productive performance as a whole, and what matters is whether the performance as a whole is profitable ... thus ... exchange is not a focal concern of evolutionary economics” (p. 173).

research are rival marketers and their existing and prospective channel customers and consumers situated within a broader physical and social context. The Marketing Firm introduces the concept of the bilateral contingency of reinforcement or punishment to analyse mutually contingent patterns of interaction between the firm and any or all of its stakeholders. The analysis emphasises the reciprocal nature of this relationship *and* makes the distinction between reinforcement and punishment arising from social exchange and from literal exchange.

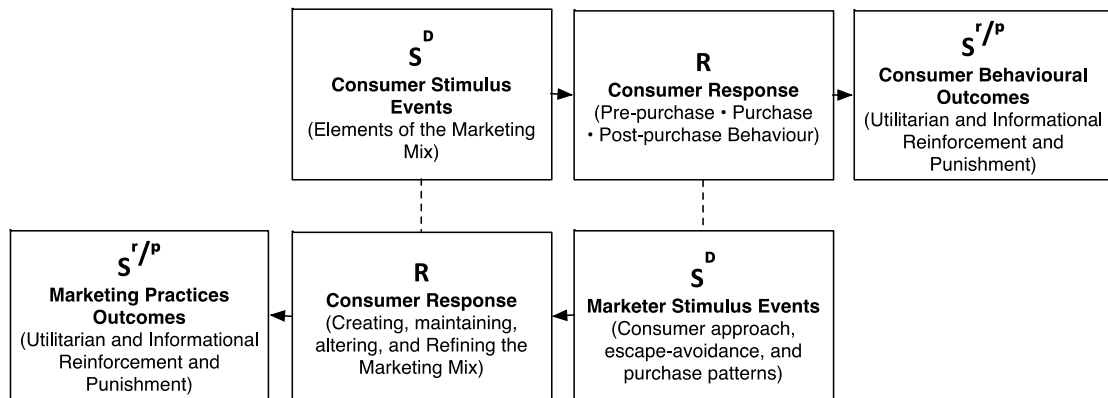
Foxall (1990, 1999b) draws from social exchange theory to emphasise social exchange, and, to cast marketer and consumer behavioural interactions as reciprocal, mutually reinforcing, and mutually contingent. These social exchange interactions may be understood in terms of “a complex lattice arrangement of interrelated $S^D:R \rightarrow S^{r/p}$ ” (Kunkel 1977, p. 452; Foxall 1990) or patterns of mutually-contingent interactions (Foxall 1990) or *bilateral contingencies of reinforcement* (Foxall 1999b) where the behaviour of one agent may set the occasion for the behaviour of another²³⁰. Any change in the antecedent and/or consequential variables within these relationships may alter the likelihood of behaviour being *repeated* across similar situations (Kunkel 1977, p. 446)²³¹. Repetitions over space and time constitute a lineage of these interlocked contingencies (Glenn and Malott 2004).

Figure 50 utilises the three-term contingency to illustrate the mutually contingent and interlocking social interactions among marketers and consumers. Drawn from Foxall (1999b), the figure represents the lattice arrangement of three-term contingencies by Kunkel (1977).

²³⁰ In parallel but independently, Glenn (1988), a behaviourist, terms these patterns of interaction as “interlocking contingencies” or “interlocking behavioural contingencies” (Glenn and Malott 2004, p. 91). It should be noted that the notion of bilateral contingencies is drawn from social exchange theory with particular reference to George Homans (see Foxall 1990, pp. 76-82; 1999b). (In personal communication, Foxall also attributes the development to the idea of bilateral monopolies found in economics, a market structure characterised by a single seller and a single buyer.) In parallel but unrelated vein, Hodgson (1988; 2001a, p. 202) draws similar comments upon the necessity to clarify the broad definition of exchange ideated within sociological “exchange theory” (and also refers to Homans) and distinguish literal from social exchange. Hodgson’s basis for distinguishing between the two types of exchange arises from institutionalist considerations rather than from an economic psychology perspective (as is the case with Foxall): “exchange in a market economy involves the contractual exchange of property rights within a legal system of private property relations” (Hodgson 2001a, p. 202).

²³¹ It is these variations that change the likelihood that behaviour will be replicated (see Section 4.3.5).

Figure 50 – Bilateral Contingency of Reinforcement or Patterns of Mutually Contingent Interactions



Source: Foxall (1999b, pp. 221-222)

Bilateral contingencies are, therefore, useful in analysing and interpreting the various relationships held by the firm (Vella and Foxall 2011, 2013) and express an economic understanding of relationships, i.e., bilateral contingencies focus attention on “associated bilateral expectations and behaviour between parties” (Hart 1989; Brousseau 2008; Vella and Foxall 2011, p. 33).

When reinterpreting relationships in operant terms Foxall (1999b) argues the necessity to distinguish between social exchange and literal exchange. This gives rise to different forms of relations: *Mutuality (non-exchange) Relationships*: mutually contingent interactions associated with social exchange and where reciprocal reinforcement does not arise from the mutual surrender of property rights in literal exchange. *Marketing (Exchange) Relationships*: mutually contingent interactions associated with literal exchange and where reciprocal reinforcement arises from the mutual surrender of property rights in literal exchange (Foxall 1999b; Vella and Foxall 2011)²³². Vella and Foxall (2011) extend this dimension by arguing that some behaviours within marketing exchange relationships may be simultaneously reinforced by non-exchange related outcomes. These are *mutuality-plus-exchange relationships* and

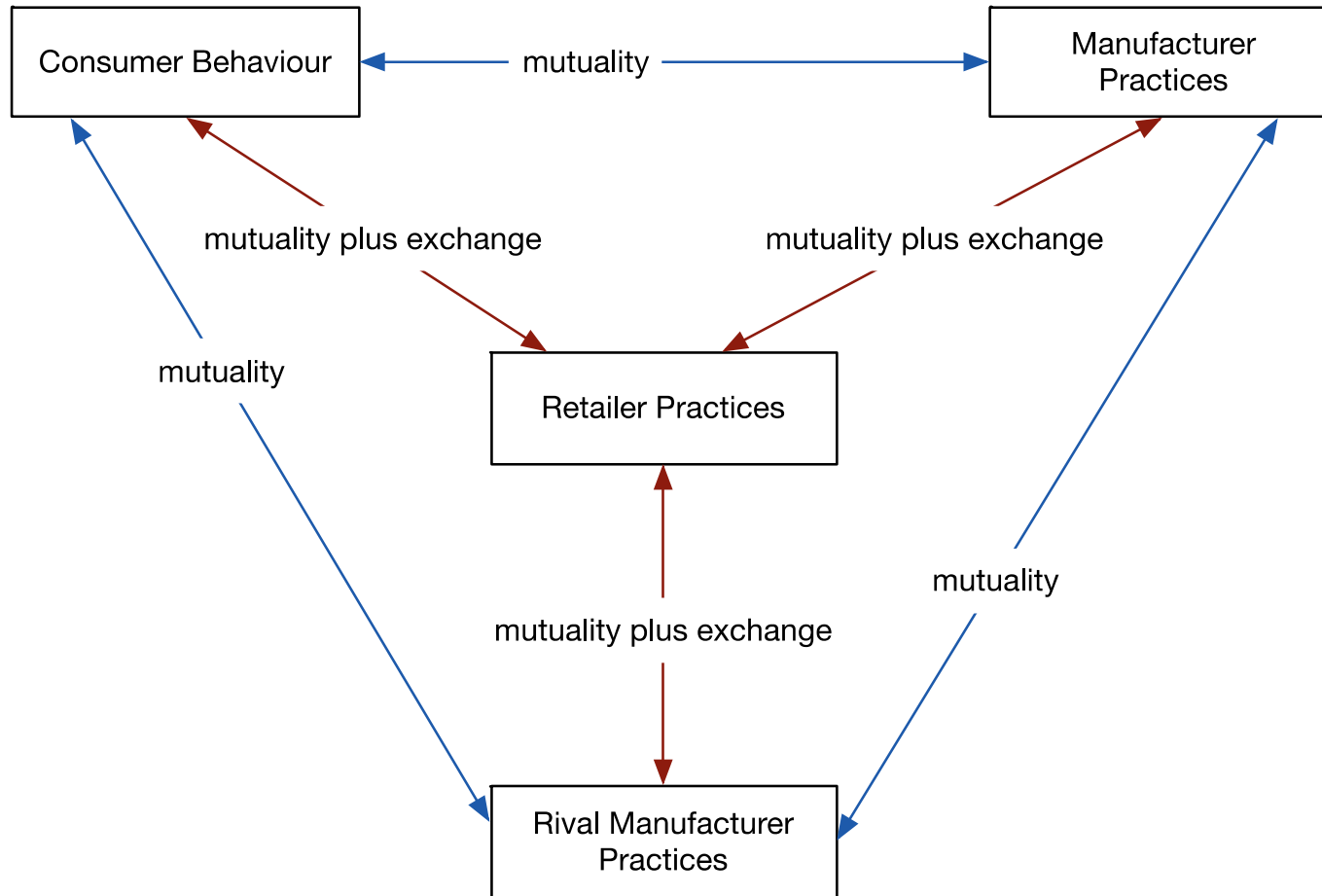
²³² The bilateral contingency analysing relations between manufacturers and ultimate consumers where an intermediary is present does not generally involve direct literal exchange relations between consumers and manufacturers since consumers purchase their ice creams from intermediaries. Thus, consumers are said to hold a mutuality-only relationship with manufacturers and an exchange relationship with retailers. The relationship between the regulator and rivals is also one where behaviour is not reinforced through literal exchange.

characterise business-to-business relationships useful in studying markets that involve intermediaries (Vella and Foxall 2011).

The point here is not simply characterising social interactions; rather, it recognises social *learning* (Foxall 1990, 1999b) where learning is reciprocal and understood in terms of the acquisition, maintenance, extinction, and modification of behaviour within the mutually contingent behavioural interactions among agents (Kunkel 1977; Foxall 1990).

In addition, since the explanation of behaviour within operant psychology is constructed exclusively through reference to environmental events, the characterisation is useful in analysing how the environment operates as the selective agent. Within a social environment, environmental selection turns focus on the behaviour within and across these bilateral contingencies and how the behaviour of one party of the bilateral contingency *selects* for and *against* the behaviour of the other over space and time (Figure 51).

Figure 51 – The Selective Market Environment Expressed in terms of Bilateral Contingencies of Reinforcement



B: The Operation of the Environment within Bilateral Contingencies

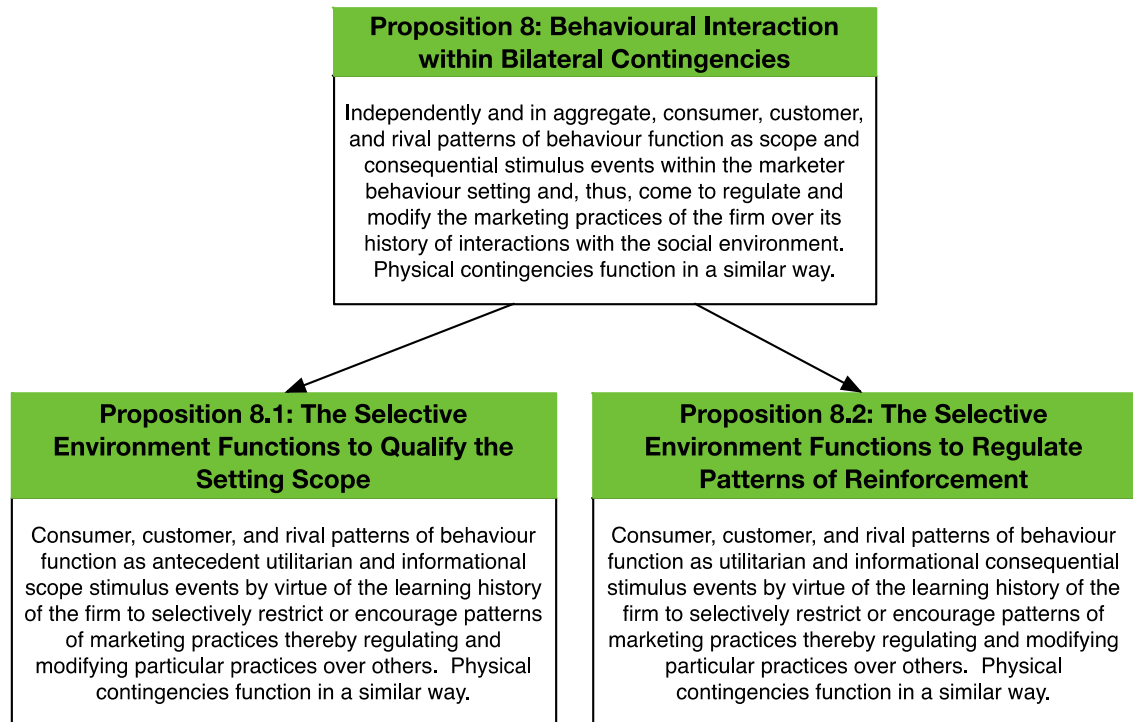
The research of Vella and Foxall (2011) aimed at showing how the marketing behaviour of a manufacturer, as a significant extra-personal situational variable in real world markets, operated to shape, maintain, weaken, and discontinue the various approach and escape-avoidance patterns of intermediaries and consumers (The study also showed similar attempts by marketers with respect to rival *encroachment*²³³). As stated earlier, the strategic options open to the firm are described in functional terms as the qualification of setting scope and the management of reinforcers.

As stated, the research proposes that the aggregate behaviours of the individuals composing the stakeholder environment of the firm *function* as the *selective agent* (Figure 48). As a direct corollary of the hypothesised function of the strategic options open to the firm described in Foxall (1999b) and studied by Vella and Foxall (2011), the research also proposes that: The selective agent operates on the marketing practices of the firm, as the locus of selection, by qualifying the scope of the setting in which marketing practices are emitted and/or by posing arrangements of patterns of reinforcement. Therefore, a second set of central research propositions are suggested (Figure 52). These propositions account for the real world differences between experimental spaces and the market as a behavioural environment and, therefore, need to be invoked to qualitatively demonstrate operant conditioning. Thus, in conjunction with Proposition 1 (Figure 22²³⁴) the propositions are central to demonstrating the applicability of Skinner's evolutionary analogy.

²³³ Vella and Foxall (2013) categorise all rival behaviour as a response class termed *encroachment*. In any given marketer situation, encroachment functions to "initiate or precipitate customer escape-avoidance or deter approach" (Vella and Foxall 2013, p. 388) with varying degrees of success.

²³⁴ See Chapter 3, Section 3.3.1.

Figure 52 – Second Set of Research Propositions Capturing how Reinforcement Learning Operates in Real World Settings



Since Vella and Foxall (2011) relied on qualitative evidence to render their interpretation, they constructed two measures to show the mode in which reinforcement and punishment processes characterised the behaviour of Wall’s and other market participants within respective bilateral contingencies. These measures were also used because an operant interpretation of real world events cannot achieve the form of precision of the EAB²³⁵.

This research faces an identical problem and, thus, the measures proposed by Vella and Foxall (2011) are modified to (a) measure how selective environmental factors function to qualify behaviour setting scope and pose arrangements of patterns of reinforcement vis-à-vis the firm, and, (b) to qualitatively demonstrate the processes of reinforcement and punishment. Together with evidence on shaping, maintenance, and discontinuity of behaviour, the measures would qualitatively demonstrate operant conditioning thereby lending support to Skinner’s central claim as outlined in Proposition 1.

²³⁵ The proposed measures are based on Figure 32 (page 168) and Figure 33 (page 173). See also Appendix A4.2.1.

Qualification of the Scope of the Behaviour Setting

The measure to interpret the evidence to determine setting scope stricture is derived from Foxall (1990, 1992a, 1997b, 2010b) and Vella and Foxall (2011). Environmental conditions, independently and in combination, operate on the marketer behaviour setting to qualify setting scope and compel certain marketing practices over others (Figure 53)²³⁶.

Regulation of the Patterns of Reinforcement

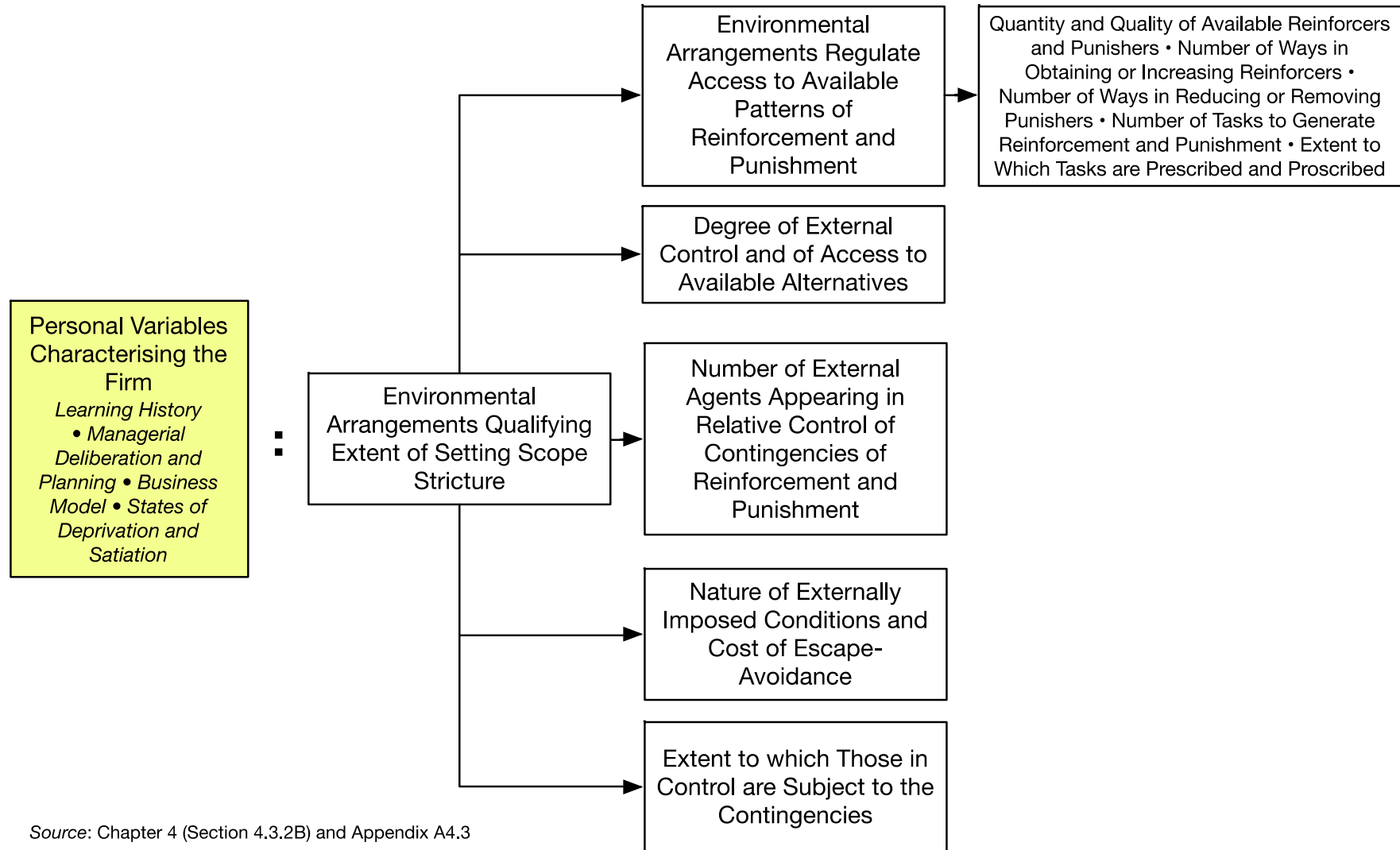
The measure to interpret the evidence to determine the regulation of patterns of reinforcement by environmental contingencies is derived from Alhadeff (1982), Foxall (1990, 1992a, 1992b, 1997b), and Vella and Foxall (2011). Environmental conditions, independently and in combination, operate on the marketer behaviour setting to regulate patterns of reinforcement and punishment (Figure 54)²³⁷.

The two measures provide the means to analyse and interpret the qualitative evidence in the Ice Cream Report.

²³⁶ Appendix A4.3 presents the entire measure in detail.

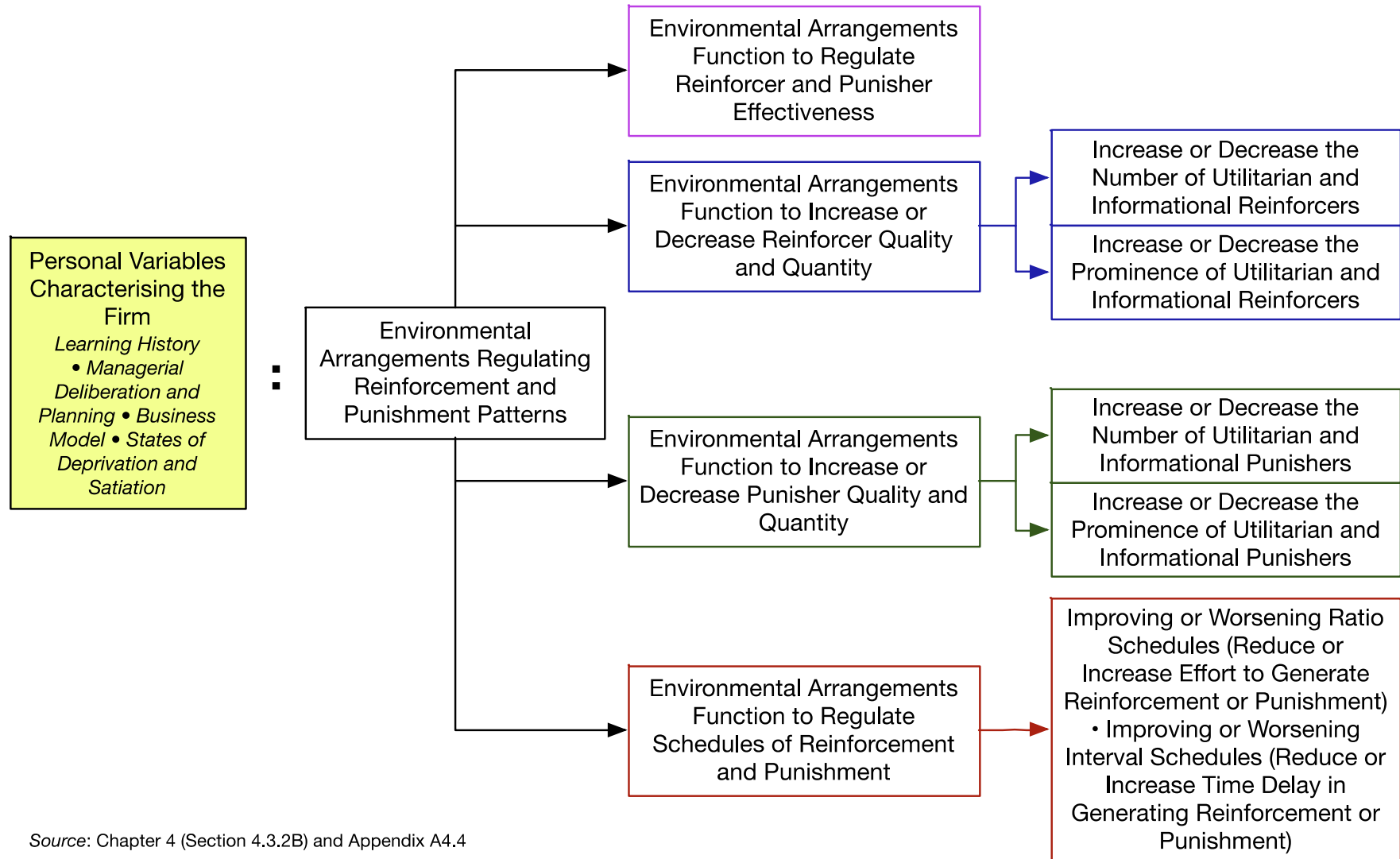
²³⁷ Appendix A4.4 presents the entire measure in detail.

Figure 53 – The Qualification of Setting Scope Stricture by Prevailing Environmental Arrangements



Source: Chapter 4 (Section 4.3.2B) and Appendix A4.3

Figure 54 – The Regulation of Patterns of Reinforcement by Prevailing Environmental Arrangements



Source: Chapter 4 (Section 4.3.2B) and Appendix A4.4

C. The Problem Posed by the Market

From an operant perspective, a market is defined as “a set of contingent relationships among discriminative [or motivational] stimuli (e.g., contracts of employment), responses (e.g., working practices) and reinforcing/punishing consequences (e.g., wages, being fired)” (Foxall 1999b, p. 219). According to the Marketing Firm, firms emerge to satisfy these contingencies through their various mixes, which engender and deter relative strengths in rates of consumer approach and escape-avoidance respectively to result in some measure of *profitable* literal exchange (Foxall 1999b; Vella and Foxall 2011, 2013)²³⁸.

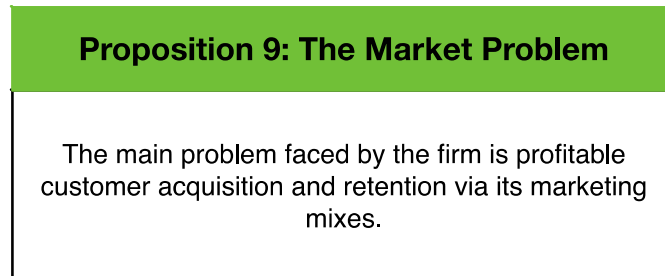
With respect to the issue of profitable literal exchange, the costs faced by the firm are *market transaction costs* involving the expenditure incurred and investments made in searching for customers, gathering information about them, communicating and negotiating with customers, administering and monitoring contracts and so on (Coase 1960, 1988a; Foxall 1999b; Vella and Foxall 2011). The most significant of these costs arise from the problem faced by the firm when using the market – those pertaining to “discovering the rules under which it is operating” (Foxall 1999b, p. 228). In behavioural terms, the discovery of such rules entails the non-trivial endeavour of understanding consumer, customer, and rival contingencies of reinforcement, extracting descriptions and injunctions in an attempt to summarise them (i.e., rules), and programming and refining marketing stimuli to present them in the marketplace in a way as to engender continual flows of approach behaviour with increasing likelihoods of consumer purchase behaviour given other prevailing contingencies²³⁹.

²³⁸ Foxall (1999b) notes literal exchange as being a product of one of the institutional rules that characterise markets.

²³⁹ These difficulties are generated as a corollary of Foxall’s generic discussion on the complexity of identifying and interpreting the situational determinants of economic behaviour within affluent markets (see, for example, Foxall 1996b, 2010b).

Therefore, and within the strict confines of the Marketing Firm (Figure 55):

Figure 55 – Research Proposition Capturing a First Approximation to Defining the Evolutionary Problem Faced by the Firm



4.4 Summary and Conclusions

The chapter contributed by elaborating and clarifying the work of Foxall (1999b) and Vella and Foxall (2011) with respect to the application of the BPM to the marketing practices of firms and by integrating the BPM to develop the SMC. Importantly, it delineated a more refined interpretation of personal variables that represent individual firms, which was relatively confusing in the exposition of Vella and Foxall (2011). The discussion proposed five additional working hypotheses to be applied to the Commission’s reports and later discussion. More significantly, two measures for demonstrating operant conditioning through qualitative evidence are proposed relying on earlier work by Foxall (1990, 1996b, 1997b) and Vella and Foxall (2011).

The proposed theory now requires an injection of empirical data to test, refute, elaborate, and refine. The following chapter analyses and interprets the data in the Commission’s report linking the evidence with the theory established in Chapters 3 and 4.

Chapter Five

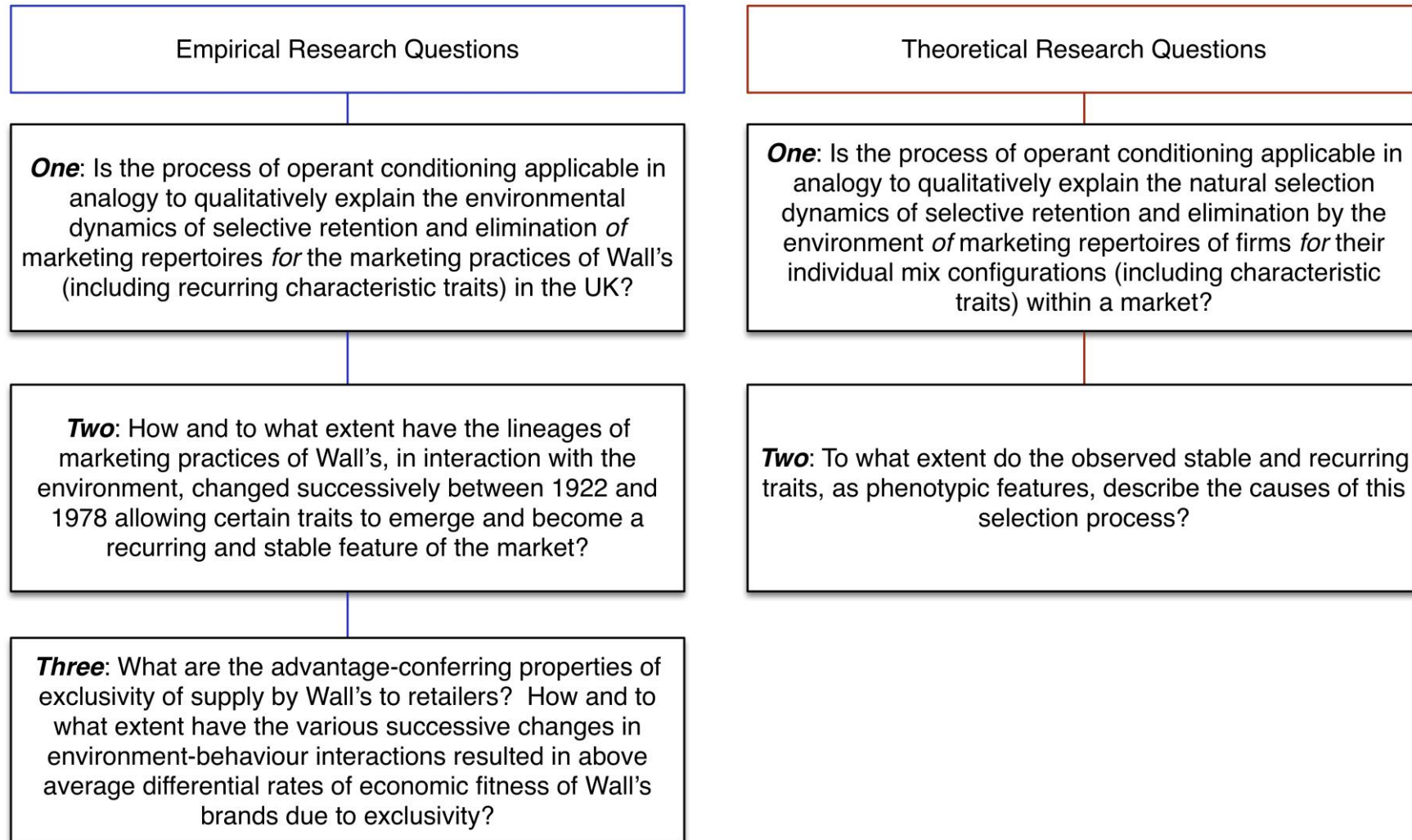
The Evolution of Wall's Marketing Practices: Analysis, Interpretation, and Discussion

5.1 Introduction

The aim of this Chapter is to construct a discussion based on the key findings emerging from the Ice Cream Report in relation to the research propositions, sensitizing framework, and operational definitions established in the preceding chapters. The discussion answers the empirical questions and, thus, provides the basis for addressing the theoretical research questions (Figure 56), conducting the evaluation of the natural selection–operant conditioning analogy, and drawing appropriate conclusions (Figure 57).

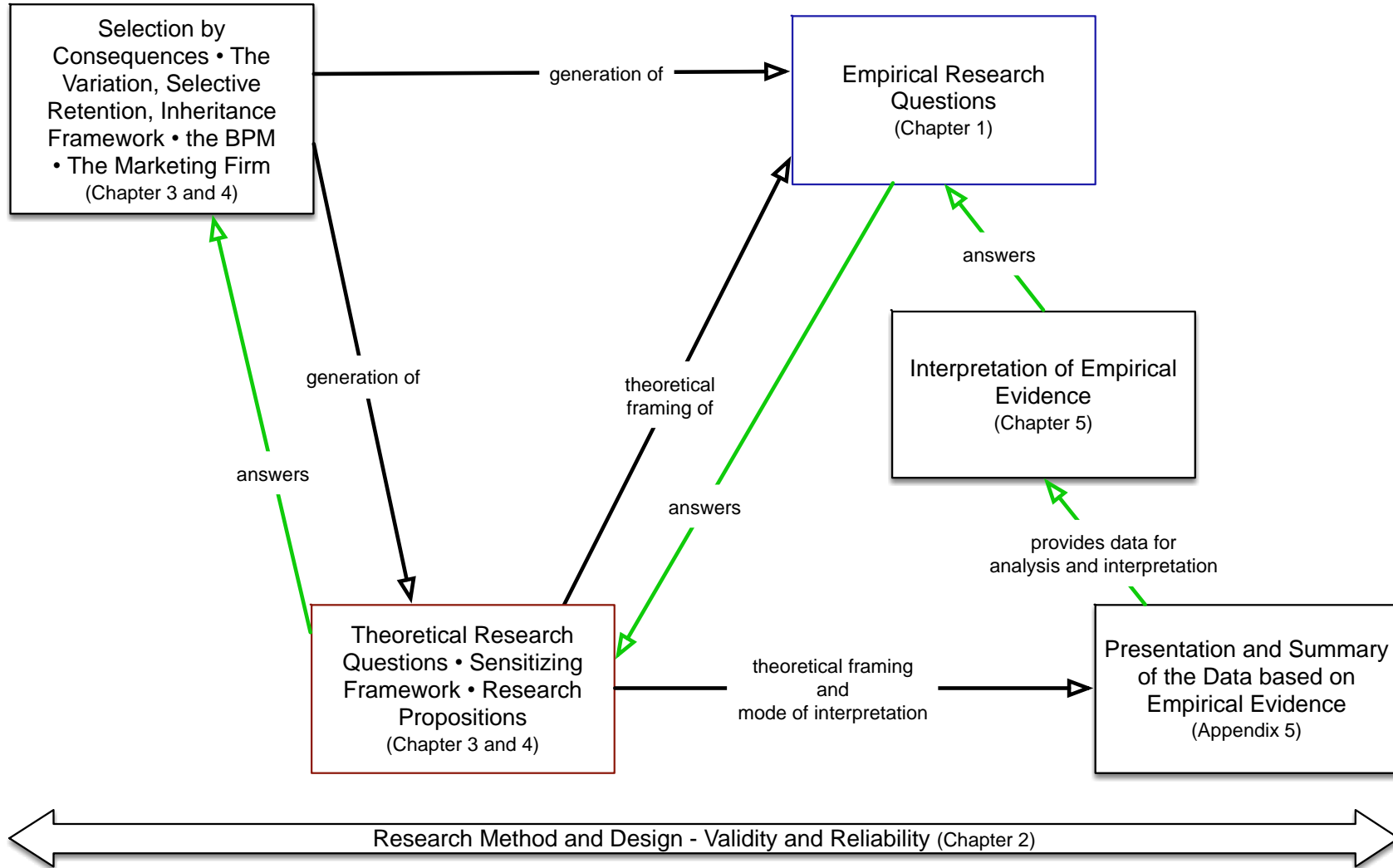
Appendix 5 presents and exhaustively summarises the data as the basis for identifying the key findings. The narrative therein (1) examines the history of the participation of Wall's in the ice cream industry as a manufacturer and marketer of the product for mass consumption between 1922 and ca.1978, and, (2) investigates the nature of the marketing practices of Wall's in relation to the problems posed by prevailing and changing market contingencies. It focuses on describing the main topographical elements found in the Ice Cream Report and on categorising these elements according to the sensitizing concepts and framework identified in Chapters 3 and 4. The appendix establishes an extensive rationale for the categorisation with reference to both the three-term contingency and the BPM. The relationships between the various elements and concepts are identified and explained. In this chapter, the operational definitions and measures proposed and used serve as rules of correspondence between empirical evidence and theoretical constructs.

Figure 56 – Empirical and Theoretical Research Questions



Source: Chapter 1, Section 1.4

Figure 57 – The Relationship between Research Questions and Interpretation of Empirical Evidence



Vella and Foxall's (2011) case study demonstrated the process of data presentation by including it within the main text to partially fulfil the scope of their project – that of establishing and demonstrating a case study and interpretative methodology for behaviourist research. However, their study may be criticised for not having linked to and embedded the findings more deeply in the theory²⁴⁰. Here, the link between observation and theory is critical – the presentation of the narrative is secondary to its interpretation in terms of hypothesised theoretical variables and causal processes. In addition, the data used is in the public domain and readily accessible. Therefore, the data is presented separately within Appendix 5 (Figure 58).

²⁴⁰ For example, as already stated in Chapter 4 (Section 4.3), Vella and Foxall (2011) do not provide an empirically based description of the variables of BPM as these relate to marketing practices. As a result, their definitions remain as tentative and broad characterisations and, sometimes, even ambiguous.

Figure 58 – Summary of the Main Sections of Appendix 5

Section A5.1	<p>Provides Overview of the Case Introducing the Main Participants: Wall's (subsidiary of Unilever) and Glacier (subsidiary of J Lyons & Co) as Large Scale National Manufacturers, and, a Group of 40 Medium Sized Secondary Manufacturers (including Treats, a subsidiary of Unilever) • Outlet and Freezer Exclusivity Contracts and a Number of Other Practices at Retail Identified by the Commission as Restrictive Practices Conducive to Monopoly Situation • Wall's, Glacier, and Some Secondary Manufacturers Engaged in Offering Exclusivity Contracts to Retailers.</p>
Section A5.2	<p>Explains Four Environmental Conditions that Recur Throughout the History Covered in the Report. These Conditions are Presented and Extensively Described in Terms of Contingencies with Regulatory Dimension • Features are (1) Seasonality of the Ice Cream Business, the Unpredictable Nature of British Weather and Associated Within-Season Fluctuations, and the Significant Positive and Negative Effects these Seasonal Unpredictable Elements have on the Business. (2) The Physical Requirement that Ice Cream Requires Storage and Transport at Constant Low Temperatures Coupled with its Relative Low Value and the Implications on Investing and Maintaining an Expensive Cold Value Chain and other Dimensions of the Business. (3) The Availability, Precision and Comprehensiveness of Feedback Available for Extraction as <i>Market Intelligence</i> on the Prevailing Market Contingencies, and, On the Appropriateness and Accuracy of the Strategies Adopted by Rivals and by Wall's Operating Under those Contingencies. (4) Market Structure and the Organisation of Economic Practices within Specialised Firms (Manufacturers, Retailers, Distributors, and so on).</p>
Section A5.3	<p>Characterises the First Generation-Situation 1922 to 1969 • Constructs the Learning History of Wall's with Reference to the Various Elements of the BPM and Bilateral Contingency Relations with Consumers, Retailers, and Glacier as Main Rival During First Generation-Situation • Notes Emergence of Exclusivity and Several Practices Recurring During the Period, namely, Achieving Market Leadership through Competitive Pricing, Efficient Logistical Service to Retailers, Product Development and Innovation, Nationwide Branding of Quality Product, Nationwide Retail Network Expansion, Efficient Large Scale Operations, Rationalisation and Consolidation of All Operations, Technological and Technical Progressiveness • Central Problem Relates to Constructing a Nationwide Retail Network, Developing Consumer Demand, and Expanding Operations.</p>
Section A5.4	<p>Characterises the Second Generation-Situation 1970 to ca.1978 • Constructs the Learning History of Wall's with Reference to the Various Elements of the BPM and Bilateral Contingency Relations with Consumers, Retailers, and Glacier as Main Rival During the Second Generation-Situation • Notes Extensive Continuity and Some Discontinuity of Behaviour as the Central Problem Changes: (a) Changing Structure of Retail Tier with Increased Emphasis on Larger One Stop Shop Grocery Stores and Declining Importance of Small Shops, Stagnating Demand and Increased Competition by Glacier in Traditional Market Segments Jeopardising Main Source of Livelihood; (b) Emerging Grocery Trade Market Segment Yields Opportunities but Intensified Competition from Secondary Manufacturers Threatens Market Leadership.</p>

This chapter focuses on analysing and interpreting the key findings with respect to the broader patterns and the important changes emerging from the data in operant and evolutionary terms and, step-by-step, on conducting a discussion in relation to the theoretical points drawn in earlier chapters²⁴¹. Section 5.1.1 sketches the case background highlighting the growth of Wall's to market leadership and noting the introduction and gradual proliferation of exclusivity contracts among retailers. The remainder of the chapter is an interpretation of selection dynamics based on operant conditioning across four inter-related dimensions.

Section 5.2 analyses the two generation-situations and interprets them in terms of the elements of the BPM to investigate the nature and extent of continuity and change in (1) the personal variables representing Wall's, (2) the contingencies characterising the environment, (3) the sources of reinforcement found strengthening, maintaining, and weakening its practices, and, (4) the typical function of the environmental variables. Causal relations among the variables are identified. The first generation-situation spans the period 1922 to 1969 while the second spans the period between 1970 and ca.1978. The main findings here relate to upholding, rejecting, or refining the use of the BPM in the Marketing Firm.

Section 5.3 further investigates the processes of environmental selection and examines the interaction of the practices of Wall's and the environment given the various personal variable elements. The literature review placed sole emphasis on shaping, maintenance, and the weakening of practices. However, the findings reveal the importance of additional processes (observation and imitation) and of the reciprocal relationship between the firm and its environment.

One of the key findings provides a basis for formulating and interpreting the practices of Wall's in terms of operant problem solving. This is the subject matter of Section 5.4, which investigates the history of the problems posed by the market – originally Wall's faced the significant challenge of initiating and

²⁴¹ It should be noted that the presentation of the data *supplements* rather than *verifies* or *fails to falsify* the one provided in Vella and Foxall (2011) for the reason provided by Stebbins (2001) as explained in Chapter 2, Section 2.3.2.

developing the market for the mass consumption of ice cream given (1) the inexistence of a proper distribution and retail channel with the *required refrigerated storage and transport facilities*, and, (2) an existing and highly fragmented retail trade populated by a very large number of relatively small outlets dispersed unevenly across the nation. It oriented its practices around evoking approach from an existing infrastructure of relatively small stores, namely, confectioners, tobacconists, and newsagents (CTNs) and small grocery stores (SGSs). The reinforcement criteria characterising this Traditional Trade segment were such that the members of the segment typically escape–avoided retailing ice cream because of the net punishing consequences of isolating and dedicating cold storage within the store for the product. The costs were simply too high, the sales revenues too unpredictable, and the unit value too low to justify the expense of purchasing and maintaining a freezer cabinet. Exclusivity emerged to shape and maintain a higher likelihood of approach among these stores by removing or reducing these adverse consequences. Demand blossomed. However, by the mid-1960s and the start of the second generation–situation (the 1970s) the retail landscape started changing and demand for ice cream within the traditional trade stagnated. A new one–stop shopping segment, the Grocery Trade (comprised of larger groceries, supermarkets, and home freezer centres) emerged changing the rules of the game. The rapid growth of the grocery trade was sufficient to alter the prevailing contingencies to the extent that some of those practices of Wall’s that were adapted to the traditional trade (e.g., exclusivity) were not effective in the grocery segment. Through a process analogous to differential reinforcement, Wall’s behaviour started gradually shifting with emphasis placed on new areas of business. The findings thus provide an opportunity to amplify several dimensions of the theory including reinforcement and selection criteria, loose coupling, the function of innovation and problemistic search or, in the case of Wall’s extended problem solving.

Section 5.5 examines the characteristic traits that emerged during the two periods and finds that these recurring traits, in combination, conferred advantage to Wall’s. The characterisation elucidates the issue of the object and the unit of selection and what the meaning of “selecting consequences”.

Sections 5.2 to 5.3 answer the first empirical research question while Sections 5.2, 5.4, and 5.5 answer the second and third question. The relevant research propositions are discussed in each section and are refined/retained as working hypotheses for future research. Overall, the findings emphasise the complex nature of the operation of selection, highlight the importance of reciprocity, and provide support for selective shaping and retention through reinforcement. Evidence for selective elimination through punishment was relatively less detailed and future research is required.

5.1.1 Case Study Background

The main participants of the case are two large-scale manufacturers producing ice cream for mass consumption (Wall's, a subsidiary of Unilever, and Glacier, a subsidiary of JLC) and about 40 other medium-sized secondary manufacturers of relative importance within the market²⁴².

The supply of ice cream is a very long-established business and pre-hardened and individually wrapped factory-made ice cream for national distribution was first mass-produced in the UK during the period between WWI and WWII. In addition, the history of the industry is inexorably tied to the early entrepreneurial drives of Wall's, a subsidiary of Unilever since the early 1920s²⁴³.

First, the mass production of ice cream within the UK was pioneered by Wall's in 1922 via the installation, within its existing Acton facility, of an apposite small manufacturing plant acquired from the US. This marked a "major

²⁴² Treats, a manufacturer owned by one of the subsidiaries of Unilever, may be classed as a member of this second category of manufacturers on the basis of its sales revenue. Sales value by Treats (£4.7m in 1977) stood at about a tenth of either Wall's or Glacier. Only Dairy Tops Group was of comparable size to Treats (sales at over £3m) and the next three manufacturers each had sales value levels at under £2.5m (Appendix 5, Section A5.2.6B). The Ice Cream Report (1979) provides an extensive comparison of the performance on Wall's to that of Glacier as the only remaining national manufacturer and to that of Treats as the largest secondary manufacturer. For example, refer especially to Chapter 6 and Appendices 10 to 20 and 22 of the Report. See also Appendix 5, Section A5.4.2D, Section A5.7.1, and Section A5.7.5 to A5.7.7.

²⁴³ The introduction to Section A5.3 and Section A5.3.1 of Appendix 5 narrate the origins of the firm and its sale to the Lever Brothers (cofounders of Unilever) in 1922. Section A5.4.2B discusses the bilateral contingency relation between Unilever and Wall's as an integral dimension of the managerial behaviour setting (see also Section 5.2 of this chapter). Section A5.13 provides a brief timeline on the development of Unilever between 1920 and 1980.

development in the modern history of the ice cream industry” (Monopolies and Mergers Commission 1979, p. 26). The move into the ice cream market was triggered to counter the cycle of seasonality Wall’s experienced in their original business, the pork trade.

Second, “the business developed on the basis largely of Wall’s *own designed production and distribution equipment*” (Monopolies and Mergers Commission 1979, p. 26). At the time of market entry, the infrastructure necessary to support large-scale production, distribution, and retail of branded ice cream for its mass purchase and consumption did not exist. Before, ice cream manufacturing was conducted by family businesses producing an artisanal item available for purchase and consumption in small retail shops, cafes, restaurants, kiosks, and static or mobile outlets located in close proximity to the place of manufacture²⁴⁴. Vendors served consumers from handcarts or tricycles, a practice that remained until after WWII. The benefits of greater speed, more significant economies of scale, higher transported volumes, and wider geographical reach associated with motorised refrigerated delivery appeared to have been the main environmental events that selectively eliminated Wall’s use of tricycles in favour of vans in the mid-1940s²⁴⁵.

Third, the entry of Wall’s into the trade and the subsequent early developments marked “the first time in Britain that ice cream had been factory-made, pre-hardened, and wrapped for mass distribution, branded and retailed through a network of outlets” (Monopolies and Mergers Commission 1979, p. 26).

Fourth, Wall’s ice cream achieved the status of a national brand very early in the history of the trade following a strategy that emphasised organic growth. By 1939, Wall’s registered a turnover of £1,500,000 in ice cream and already had “a market share and a presence in retail outlets of major proportions” (Monopolies and Mergers Commission 1979, p. 26): the company owned 8,000 tricycles through which it retailed its relatively narrow product

²⁴⁴ See Appendix 5, Sections A5.3.2.

²⁴⁵ See Appendix 5, Sections A5.3.1.

range directly to consumers and to around 15,000 retailers nationwide²⁴⁶. By 1976 Wall's sold a very wide comprehensive range of ice cream through a network of 57,000 retailers – sales stood at £48m (Figure 59)²⁴⁷.

Figure 59 – Comparison of Sales and Market Share by National Manufacturers (1976)

	Net Sales Value (NSV)	Sales Volumes (Litres)	Estimated Market Share (NSV)
Treats	£ 4,488,000	22,272,000	4%
Wall's	£48,100,000	115,900,000	Between 34 and 37%
Glacier	£37,900,000	84,600,000	Between 26 and 28%
Estimated Market Size	Between £127,488,000 and £139,488,000	Between 274,000,000 and 299,000,000	

Source: Appendix 5, Sections A5.1, A5.2.3 and A5.7.1D

Although Glacier also entered the market in the 1920s, it only achieved a brand of national standing comparable to Wall's through the acquisition of two large secondary manufacturers, Eldorado and Nielson, in the early 1960s²⁴⁸. The business model of Glacier was also geared towards deriving benefits from the mass consumption via the large-scale production, distribution, and retailing of ice cream. However, its route to accomplish this model was characterised by a series of mergers and acquisitions between 1947 until circa 1973. The evidence suggests that freezer exclusivity probably originated as a practice by JLC in 1926. This form of exclusivity was the most significant factor facilitating the growth of the ice cream market and the emergence of a nationwide retail network in the period early after WWII. As an innovation, exclusivity contracts may have emerged as a strategy by Glacier in response to the potential threat that Wall's growth represented to its budding wholesale business to retailers²⁴⁹.

²⁴⁶ See Appendix 5, Section 5.3.1.

²⁴⁷ See Appendix 5, Section A5.4.3 and Section A5.4.5.

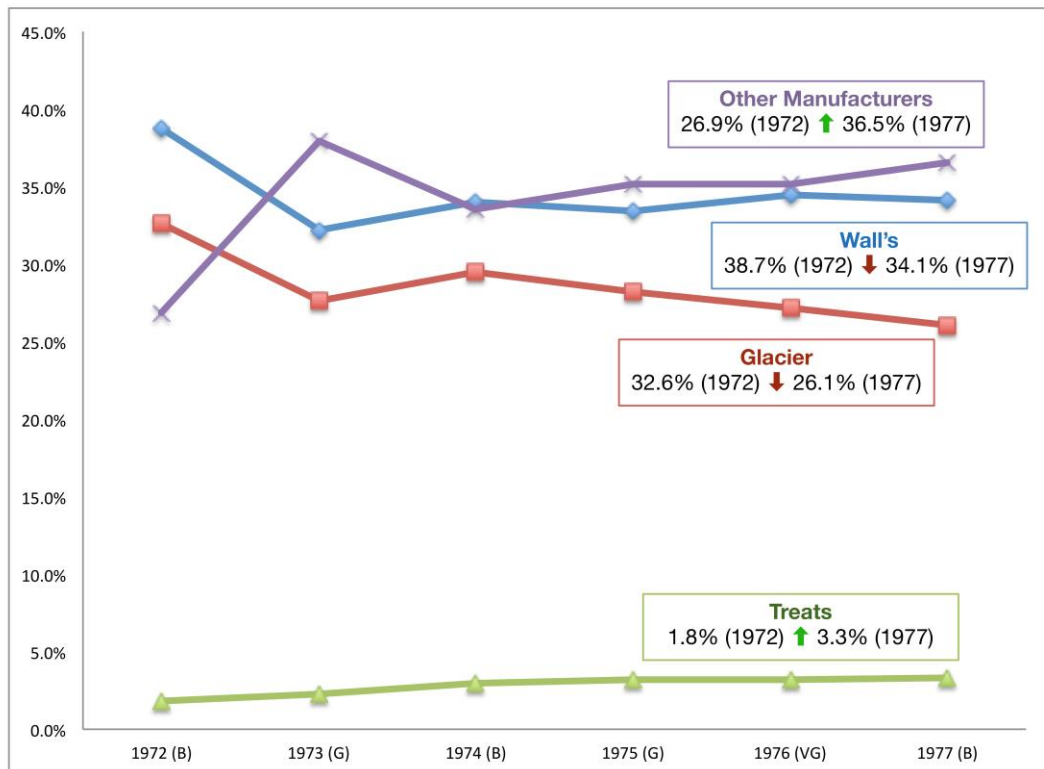
²⁴⁸ As explained in Appendix 5, Section A5.11, it was the J Lyons & Co (JLC) Group that originally operated the ice cream business. However, through a series of acquisitions and mergers, Glacier, a subsidiary of JLC, eventually came to manage the entire ice cream operation (the 1950s). For the sake of avoiding confusion, little distinction will be made between the various firms within the JLC group unless it is absolutely necessary. The analysis follows the Commission in using Glacier as the focal point for the entire ice cream business of JLC. Lyons Maid was the main ice cream brand operated by Glacier.

²⁴⁹ Although there is evidence that Wall's did engage in exclusivity early in the history of the market, there is no evidence that such a strategy was adopted before 1926. The Commission would have surely correctly attributed the emergence of this strategy to Wall's in the same manner it did by attributing the introduction of mass production to the firm. Thus, it is assumed that Wall's responded to JLC's exclusivity strategy in kind even though it is reasonable to expect that the fleet of tricycles probably did not carry rival brands. In addition, there is no indication whether freezer and outlet exclusivity emerged in parallel or in a staggered fashion.

By 1978, Wall's held 47% of the 126,000 exclusive freezers installed at retail whereas Glacier held 45%²⁵⁰.

Figure 60 contrasts the market shares achieved by Wall's and Glacier in relation to the all other manufacturers²⁵¹.

Figure 60 – Estimated Market Shares of National and Secondary Manufacturers (1972 to 1977)



Source: Appendix 5, Section A5.7.1D and A5.7.1E

Four factors are identified as having transformed the ice cream industry during the first generation-situation: (1) the advent and development of mass production techniques; (2) the emergence and expansion of a nationwide network of retailers with adequate refrigeration facilities via the provision of

²⁵⁰ See Appendix 5, Section A5.4.3 and Section A5.4.5.

²⁵¹ No data relating to the years before 1972 was available in the Ice Cream Report. All figures depicting quantitative data will denote whether the season during a particular year was Bad (B), Good (G), or Very Good (VG). This allows framing the particular statistic (e.g., sales) being visualised in relation to the effects of the weather on the variable. Section A5.2.1 and A5.2.4 in Appendix 5 explain the nature of the contingencies describing the positive and negative effects weather and seasonality had on the ice cream manufacturing, distribution, and retailing. Suffice it to say bad weather had adverse effects on production, sales, and profitability whereas good weather had positive effects. It should also be noted that the Commission encountered severe problems in calculating market size and respective market shares of the individual manufacturers (see Appendix 5, Section A5.4.1 and Section A5.6.4). Thus, it estimated a lower and upper range of market sizes (see Figure 59). The analysis and discussion relies on the more conservative of these estimates unless otherwise stated.

freezer cabinets for comprehensive geographical coverage; (3) improvements in consumer affluence; and, (4) the development of refrigeration technology which led to the emergence of nationwide refrigerated value chain (including cold transport and storage) within the frozen food industry and the proliferation of home freezing as an additional environmental agent of change that propelled the industry forward²⁵².

The second generation–situation was characterised by intensified competition and continually changing business conditions. Wall's entered the 1970s facing a substantial market problem of increasing salience and proportion. One of the more fundamental dimensions faced by Walls is best summarised in the Commission's own words: "Wall's explained that its business was built up to serve consumer demand through outlets in the traditional trade (and it still relied heavily on this trade for the distribution of confectionery products) but it had been compelled to develop outlets in the grocery trade over recent years and its experience was that there has been a movement towards greater discounting and from the more profitable 'impulse' to the less profitable 'take-home' sector. The process of change between outlets had continued into 1977" (Monopolies and Mergers Commission 1979, p. 28).

Figure 61 to Figure 64 provide an overview of the market structure and the two main retail market segments in 1976²⁵³.

²⁵² See Appendix 5, Section A5.3.

²⁵³ Appendix 5, Sections A5.2.6 to A5.2.8 describe the structure of the market and associated developments. Appendix 5, Section A5.2.3 provides an overview of the Traditional Trade and the Grocery Trade as the two main segments and the main types of products typically sold within each segment. The sales revenues to the Traditional Trade and of Impulse items were typically greater than those to the Grocery Trade and of Bulk and Dessert Ice Cream.

Figure 61 – Market Structure (1976): Activities and Functions of Participants in the Ice Cream Trade and Routes to Consumer Market

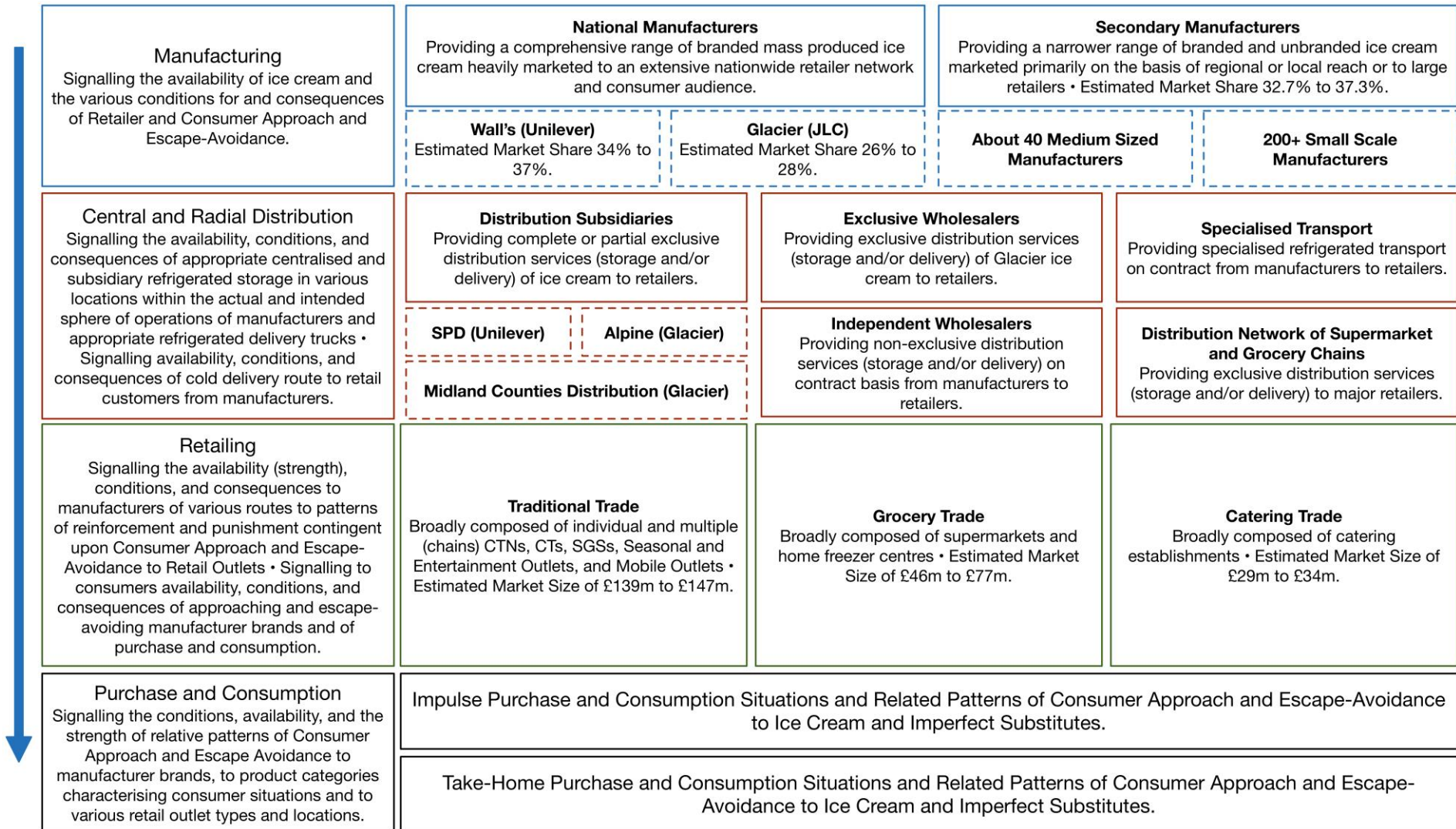


Figure 62 – Analytically Distinct Retail Markets

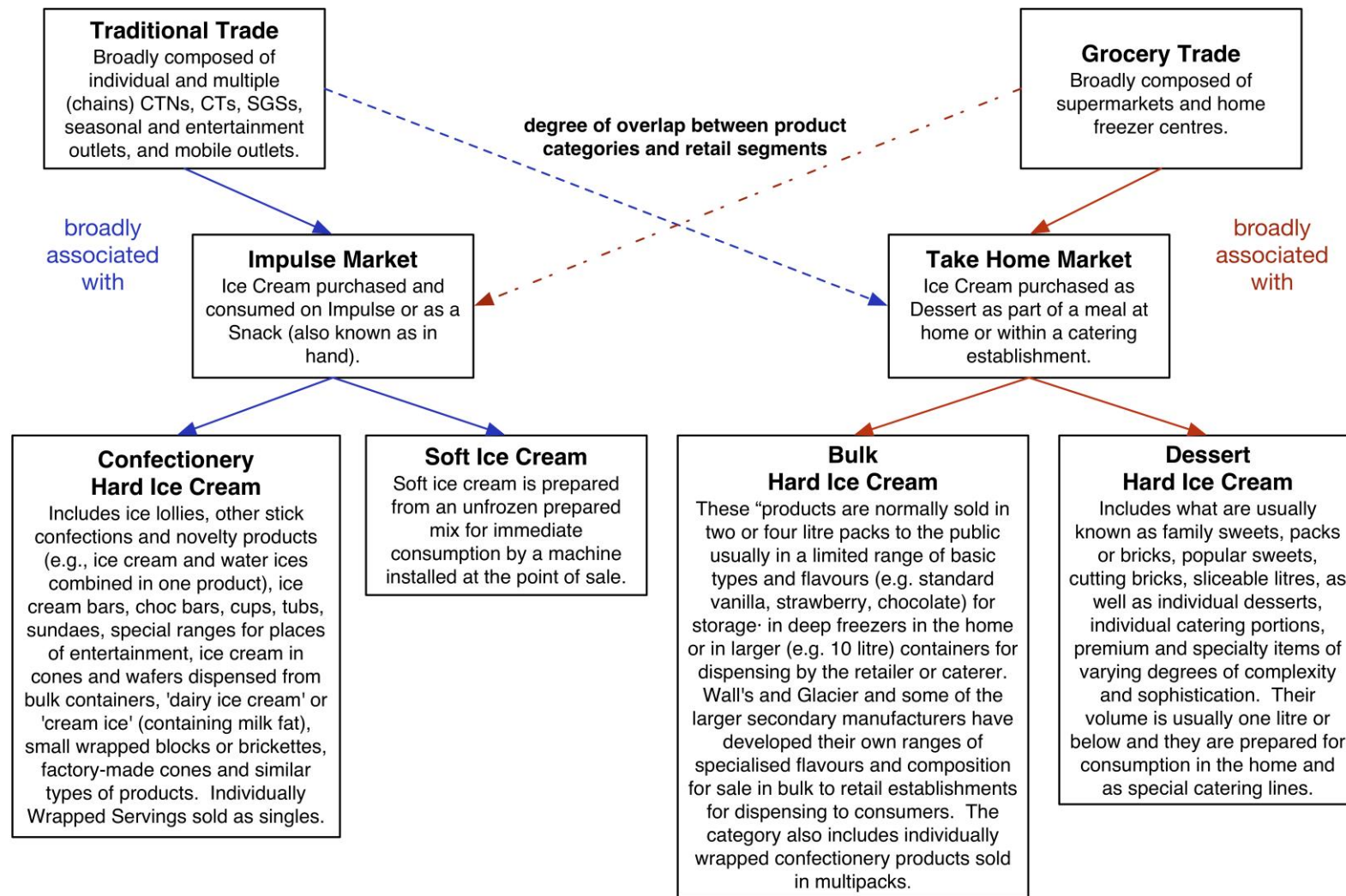
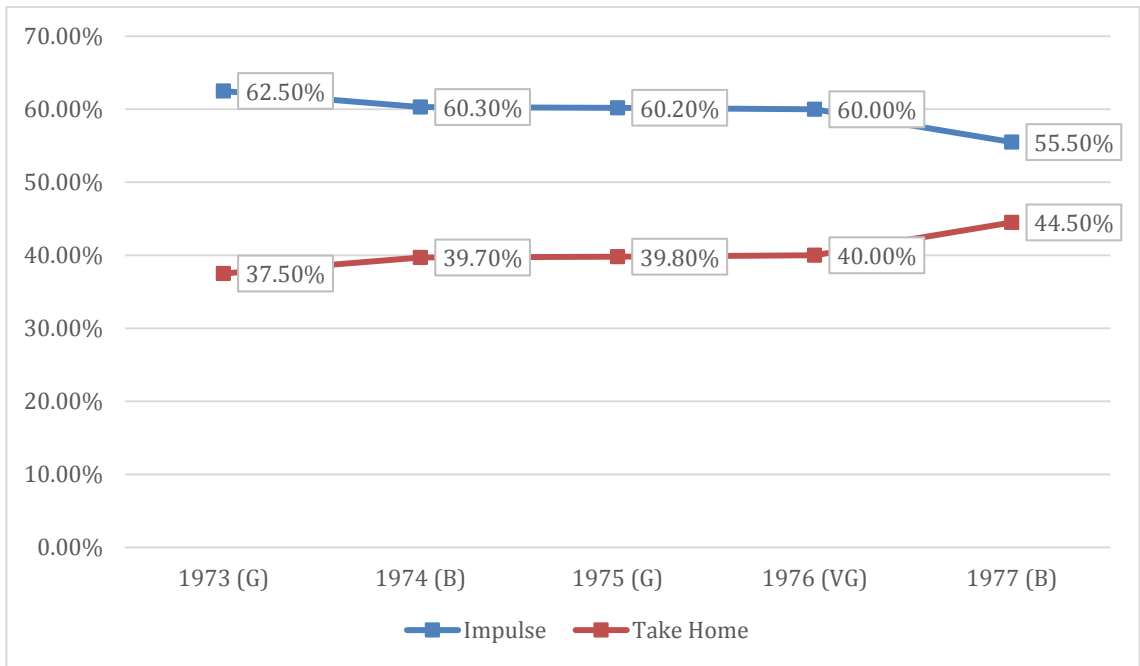
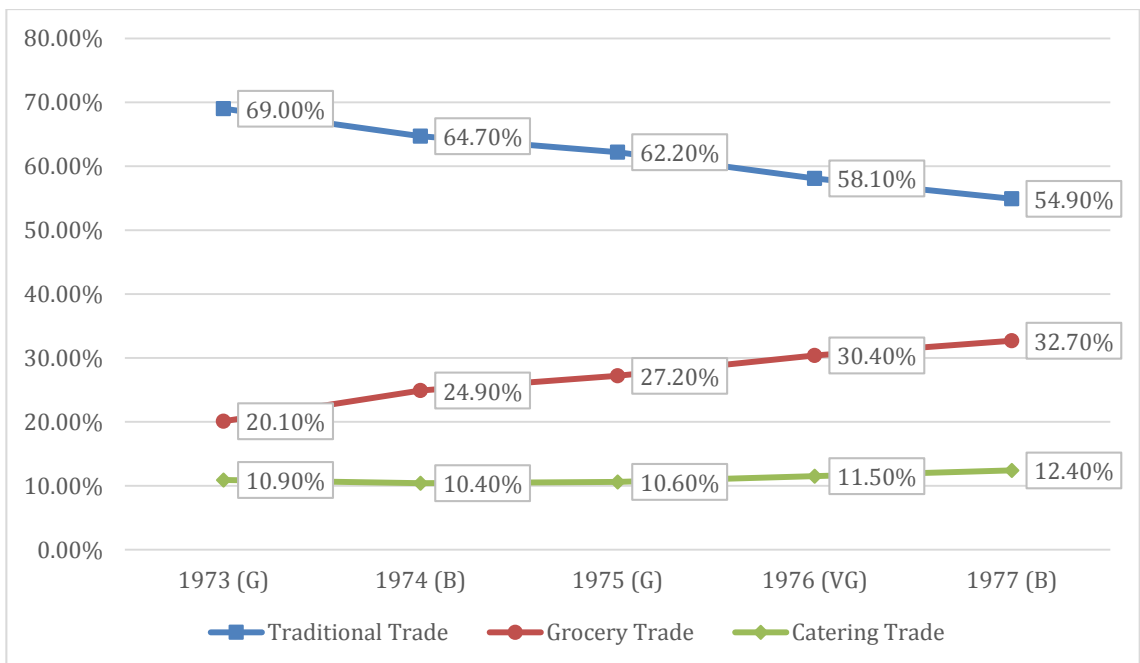


Figure 63 – Distribution of Consumer Expenditure Between Consumer Situations



Source: Appendix 5, Section A5.7.2C

Figure 64 – Distribution of Consumer Expenditure Among Retail Trade Segment

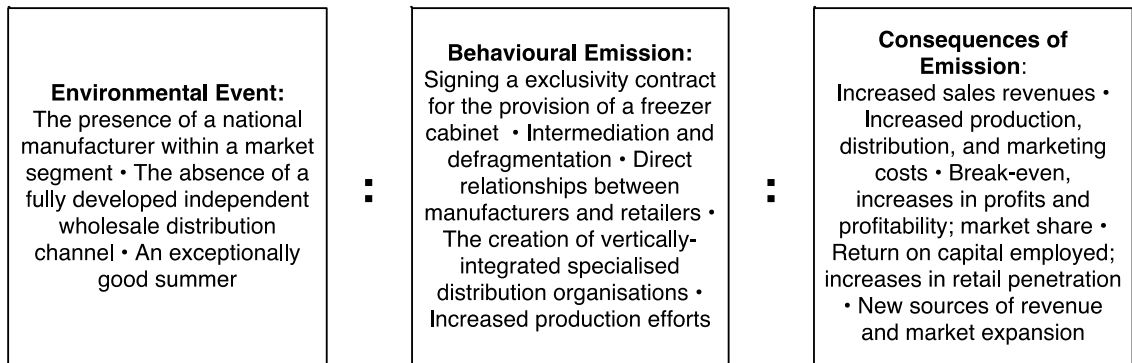


Source: Appendix 5, Section A7.7.3C

5.2 The BPM for Marketing Practices

Cultural settings are conceptualised by Skinner (1971) in terms of social and physical reinforcement contingencies. Presenting and interpreting the data in these terms provided a particularly useful way in distinguishing independent and dependent variables, categorising each according to their function, and identifying causal relations among them (Figure 65).

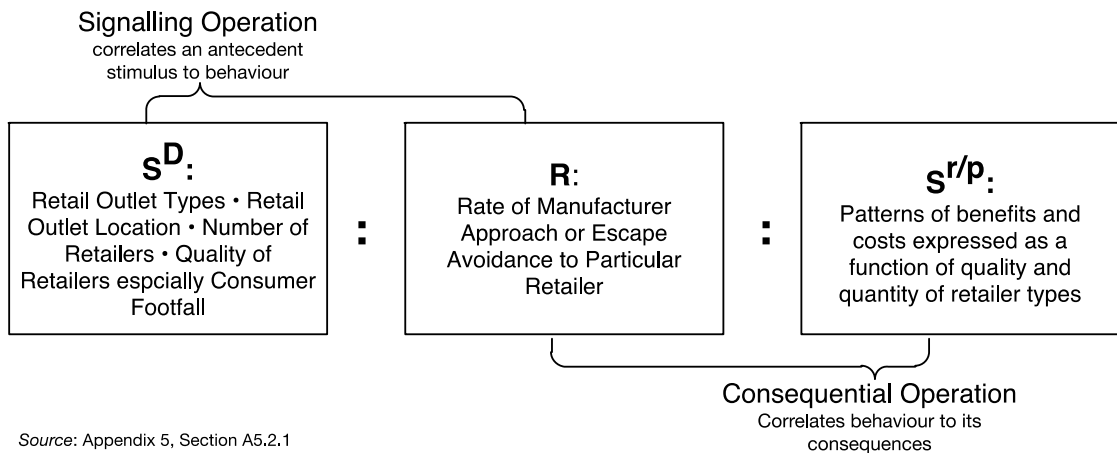
Figure 65 – Presenting Qualitative Evidence in terms of Contingencies



Source: Appendix 5, Section A5.2.1

Figure 66 characterises market structure at retail (a socio-economic contingency) describing the presence of a retailer in the behaviour setting of a manufacturer, denoting the signalling and consequential operation, and identifying a rate of manufacturer approach or escape-avoidance to the stimulus event.

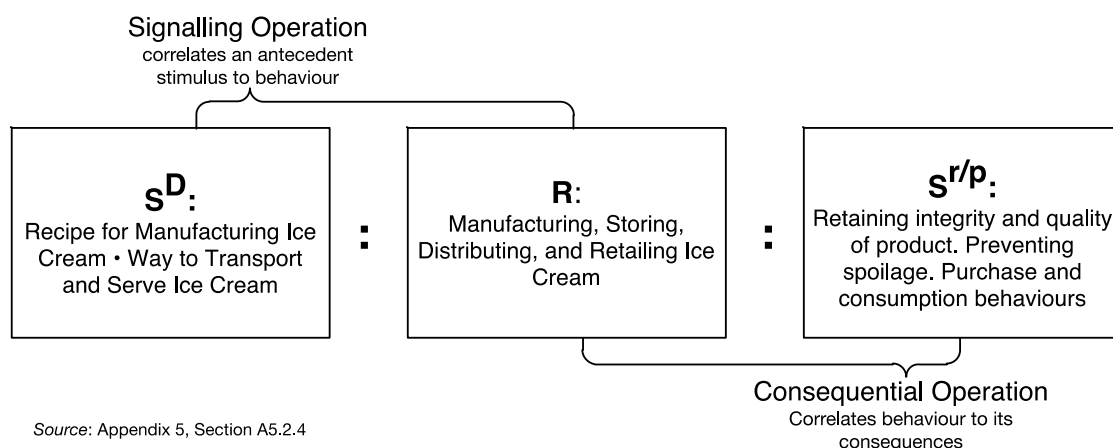
Figure 66 – The Three-Term Contingency Expressing the Presence of Retailers to Manufacturers



Source: Appendix 5, Section A5.2.1

Ice cream needs to be manufactured and served under a relatively constant and low temperature. Otherwise, the product will lose integrity and quality. This obviously implies losses in terms of spoilage and missed opportunities due to an inferior and unmarketable product. Thus the product (physical) contingency may be characterised in Figure 67.

Figure 67 – The Product Contingency describing Ice Cream



Appendix 5 provides an extensive and detailed explanation of the four main environmental conditions recurring throughout the history of the case²⁵⁴. These conditions are presented in terms of contingencies that acquired regulatory function due to their relative stability and the degree of control that these conditions exerted on the behaviour of members of the industry supply chain (Figure 68).

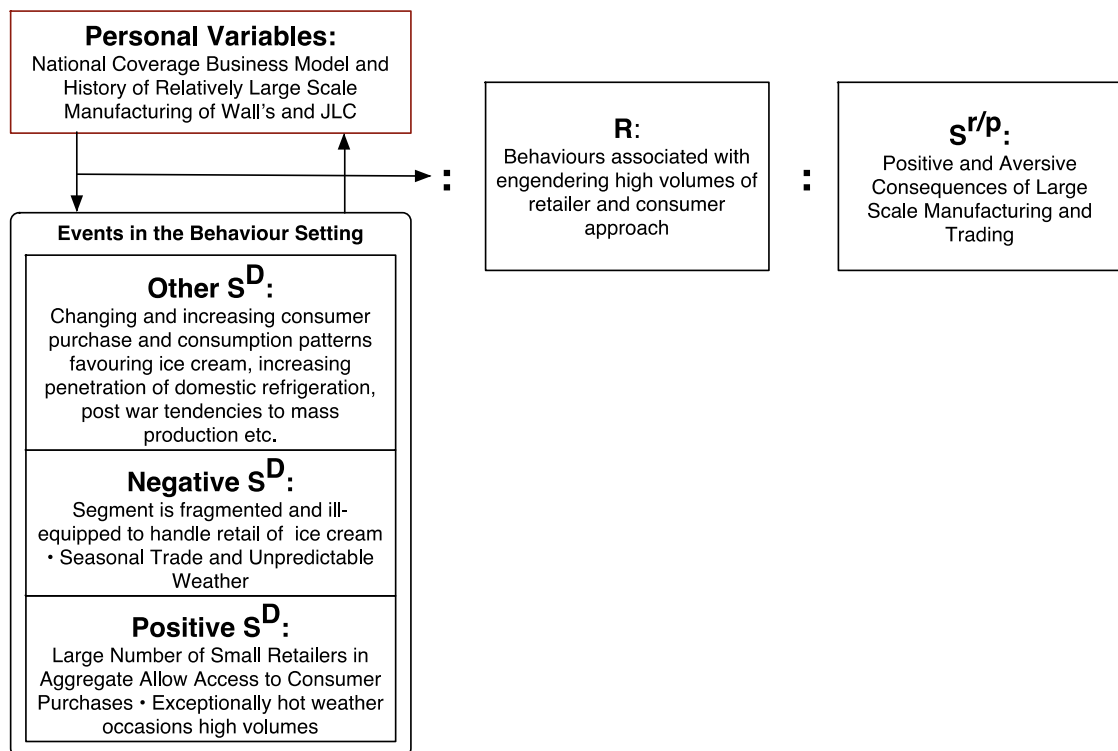
Figure 68 – Presentation of the Evidence in Terms of Contingencies

Section A5.2.1	Overview and Presentation of the Main Stimulus Events within the Behaviour Setting • Identification of Main Environmental Contingencies that Recur Throughout the History of the Ice Cream Industry • Identifies Typical Practices Emitted in the Presence or Absence of Various Stimulus Events • Establishes the Functional Relations.
Section A5.2.2	First Contingency with Regulatory Dimension: The Availability, Precision and Comprehensiveness of Feedback Available for Extraction as Market Intelligence on the Prevailing Market Contingencies, and, On the Appropriateness and Accuracy of the Strategies Adopted by Rivals and by Wall's Operating Under those Contingencies.
Sections A5.2.3, A5.2.6 to A5.2.8	Second Contingency with Regulatory Dimension: Market Structure and the Organisation of Economic Practices within Specialised Firms (Manufacturers, Retailers, Distributors, and so on).
Section A5.2.4	Third Contingency with Regulatory Dimension: Seasonality of the Ice Cream Business, the Unpredictable Nature of British Weather and Associated Within-Season Fluctuations, and the Significant Positive and Negative Effects these Seasonal Unpredictable Elements have on the Business.
Section A5.2.5	Fourth Contingency with Regulatory Dimension: The Physical Requirement that Ice Cream Requires Storage and Transport at Constant Low Temperatures Coupled with its Relative Low Value and the Implications on Investing and Maintaining an Expensive Cold Value Chain and other Dimensions of the Business.

²⁵⁴ See Appendix 5, Section A5.2.

Skinner's (1971) conclusion that there are unimportant differences between contrived experimental spaces and naturally occurring cultural settings is seriously flawed because it understates and oversimplifies the nature of complexity. The empirical evidence presented in Appendix 5 and the ensuing discussion stand testament to a significant degree of complexity that renders the operation of Selection by Consequences difficult to reconstruct. There is a far more quantitatively and qualitatively diverse range of physical, temporal, regulatory, and social stimuli than the significantly more closed settings typical of an experimental laboratory (Foxall 1990, 1996b, 2010b). Seasonality, unpredictability of the weather, the requirements of a business model centred around large scale production, distribution, and marketing, the degree of fragmentation in the traditional trade during the 1920s up to the 1950s, the shifting importance of the traditional trade in relation to the grocery trade between the 1960s and 1970s, and the lack of market information combine to constantly qualify the behaviour setting scope faced by Wall's and to regulate the patterns of reinforcement contingent upon Wall's serving the market²⁵⁵.

Figure 69 – Example of Environmental Complexity: Combination of Various Stimulus Events and Correlated Emissions Found in the Evidence



²⁵⁵ Setting scope qualification and reinforcement pattern regulation is discussed in Section 5.3 of this chapter. The related evidence is presented in Appendix 5, Sections A5.2, A5.3, and A5.4.

The issues encountered when dealing with complex environments relate to the extreme difficulty in identifying and isolating all the elements of the three term contingencies and in establishing unequivocal relations among the elements (Lee 1988; Foxall 2005, 2010b). These are exemplified within the evidence by the problem faced by the Commission and the manufacturers in (1) generating relatively precise and comprehensive data to derive a valid and reliable estimate of the size of the market, (2) determining the appropriateness and accuracy of the strategies adopted by the firms themselves and their rivals, (3) forecasting the effects of the weather on sales and production levels, and, (4) understanding the entire range of prevailing environmental conditions²⁵⁶.

In addition, a key finding suggests that the various environmental events operated *independently, simultaneously, and in combination*. This supports the theoretical claim that in complex environments, multiple events may, independently or jointly, come to control behaviour (Lee 1988; Foxall 1994, 1995c, 2004, 2010b), the findings on the Marketing Firm (Vella and Foxall 2011), and in applied operant research (Foxall 1990, 1994, 1998b; Foxall and Schrezenmaier 2003; Cooper *et al.* 2007; Foxall 2007a, 2010b)²⁵⁷. The emphasis on complex behaviour in contrast to simpler behaviour repertoires in the closed and abstracted confines of laboratory life is a recurring and important theme and is the kind of behaviour that the BPM seeks to address directly.

The purpose of the remainder of this section is to interpret and discuss the evidence in the light of the operational definitions of the variables of the BPM as it applies to marketing practices and of the relevant research propositions. This constitutes the first of the four-part construction of an operant interpretation of selection dynamics in the real world.

Section 5.2.1 contrasts the extent of continuity and change in the environmental conditions faced by Wall's and in its responses across the two generation-situations. Following the various stages of the product life cycle (PLC) (Kotler *et al.* 2013, pp. 287-291), the two generation-situations are subdivided further to improve conceptualisation and to trace the extent of stability

²⁵⁶ Refer to Appendix 5, Section A5.2.2 and Section A5.6.4.

²⁵⁷ See also Section 5.2.1 and Section 5.3.2.

and change (Figure 70). The evidence prompted the sub-division. The first three PLC stages are grouped together within the first generation-situation because the market problems faced by Wall's during these periods are very similar²⁵⁸. The fourth period (1970s) maps onto the mid-maturity stage of the PLC and represents the second generation-situation.

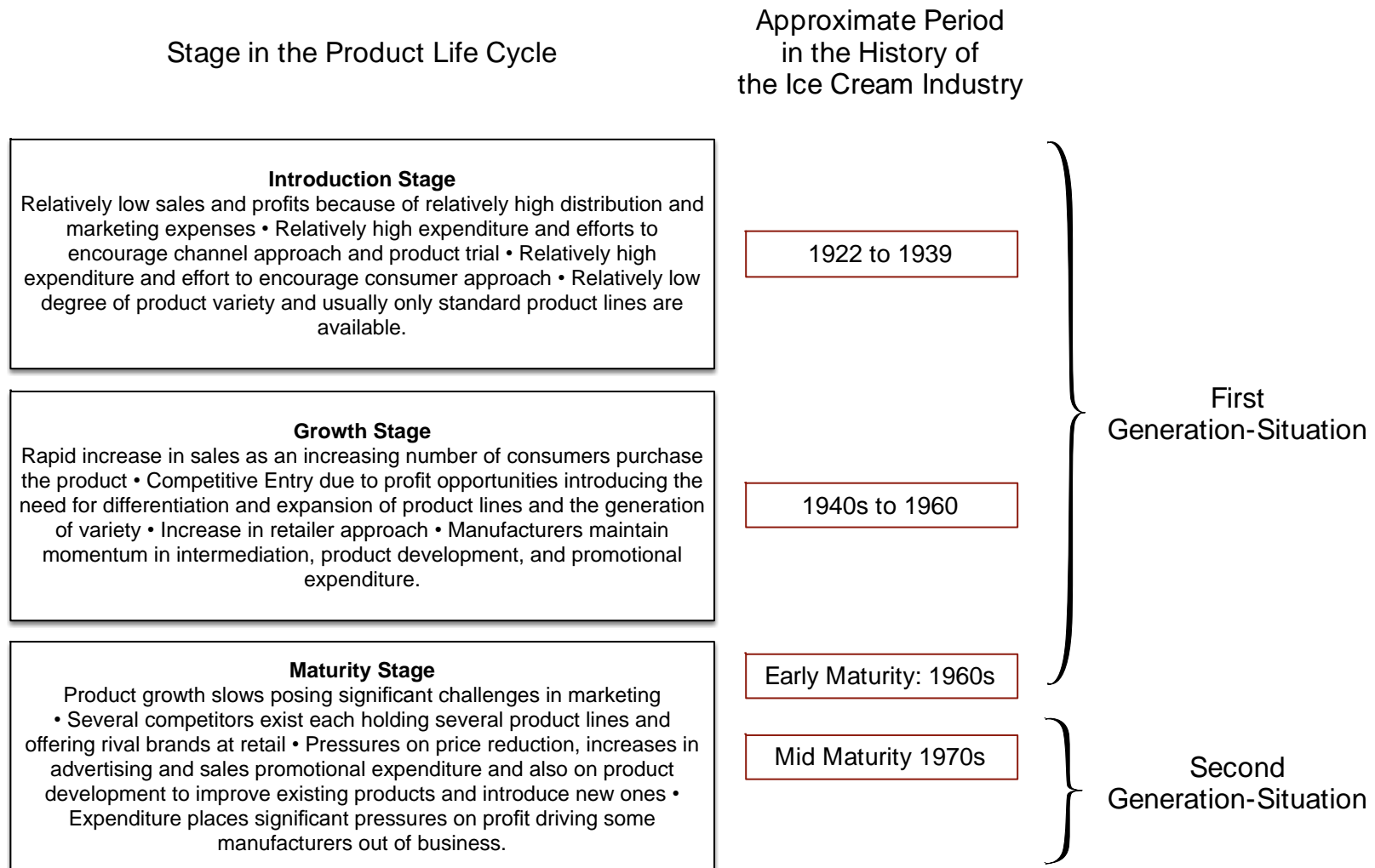
The BPM is used to characterise and interpret the events during each of these four periods by respectively (a) describing the evidence of the personal variables characterising Wall's; (b) identifying the main stimulus events in the behaviour setting faced by Wall's over its history and categorising these events both by their discriminative and motivating function and whether these signal the extent of setting scope stricture or available patterns of reinforcement; and, (c) building a taxonomy of the occasioned repertoires (e.g., intermediation, market research) populated by practices (e.g., direct mutuality plus exchange relations with retailers, weather forecasting) and their characteristic features (e.g., exclusivity, stabilising effects on revenues and costs).

The descriptions demonstrate how antecedent events gained stimulus function via the personal variables of Wall's and associate stimulus events and occasioned behaviour in a clear probabilistic causal relation expressed in qualitative terms²⁵⁹. Section 5.2.2 draws conclusions suggesting refinements to both the variables of the BPM and the derived research propositions.

²⁵⁸ Chapter 6, Section 6.4.1 raises the question whether these different stages should have been established *a priori* as individual generation-situations.

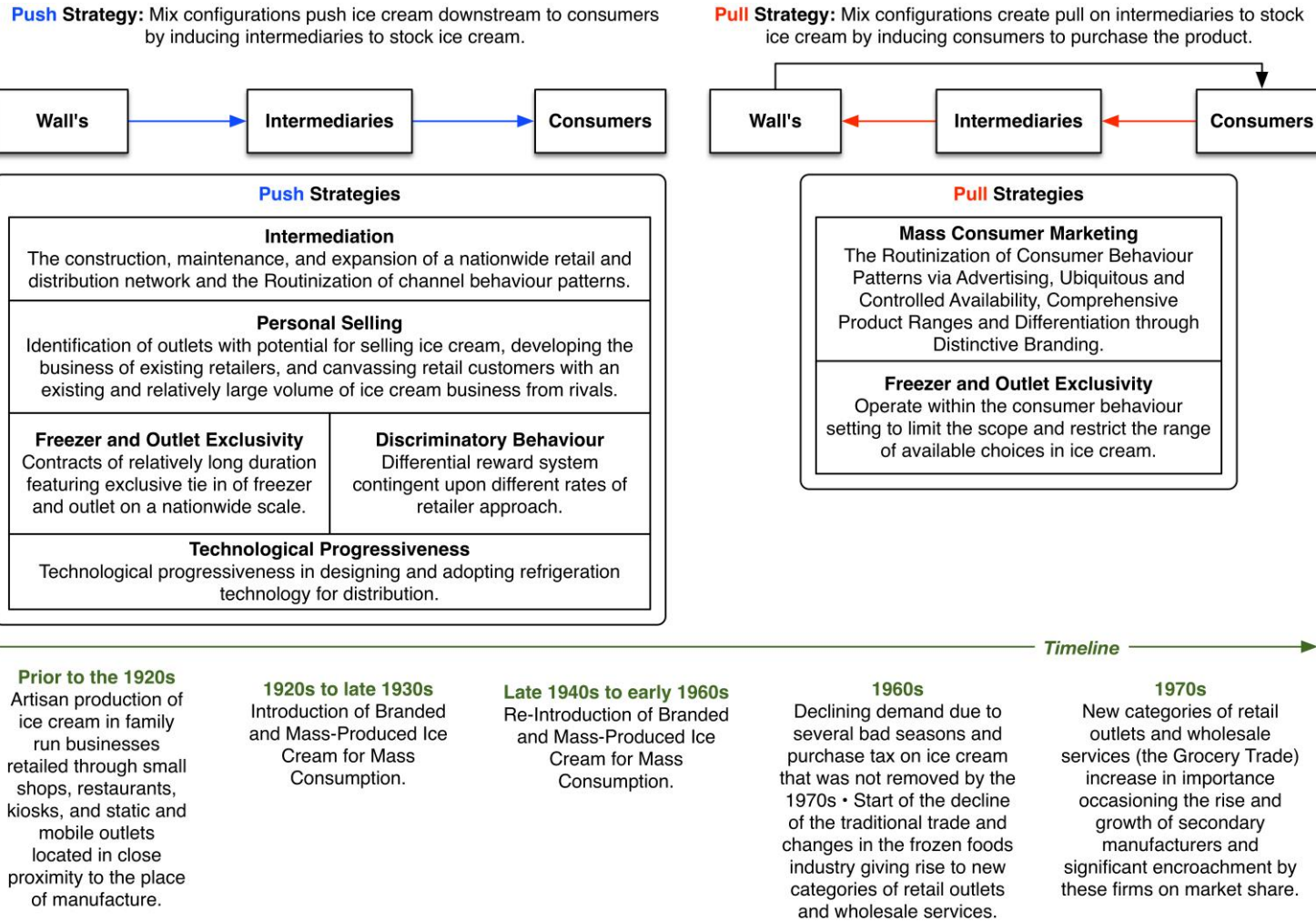
²⁵⁹ This dimension is explored further in Section 5.3 of this Chapter.

Figure 70 – Characteristics of the First Three Stages of the Product Life Cycle



Source: Adapted from Kotler et al (2013)

Figure 71 – Wall’s Practices Reinforced over a Fifty-Year Period Characterised as Push and Pull Strategies



Source: Based on Appendix 5 and Kotler *et al.* (2013, p. 433)

5.2.1 Stability and Change in the Various Elements of the BPM

The marketing strategies of Wall's may be categorised as either (1) *push* strategies whereby marketing mix configurations pushed the product downstream to consumers by inducing a growing and relatively large number of distribution and retail channels to stock the product; and, (2) *pull* strategies where mix configurations were directed at creating pull on retailers by inducing a growing and relatively large number of consumers to purchase the product (Figure 71).

A. The Introductory Stage: 1920 to 1939

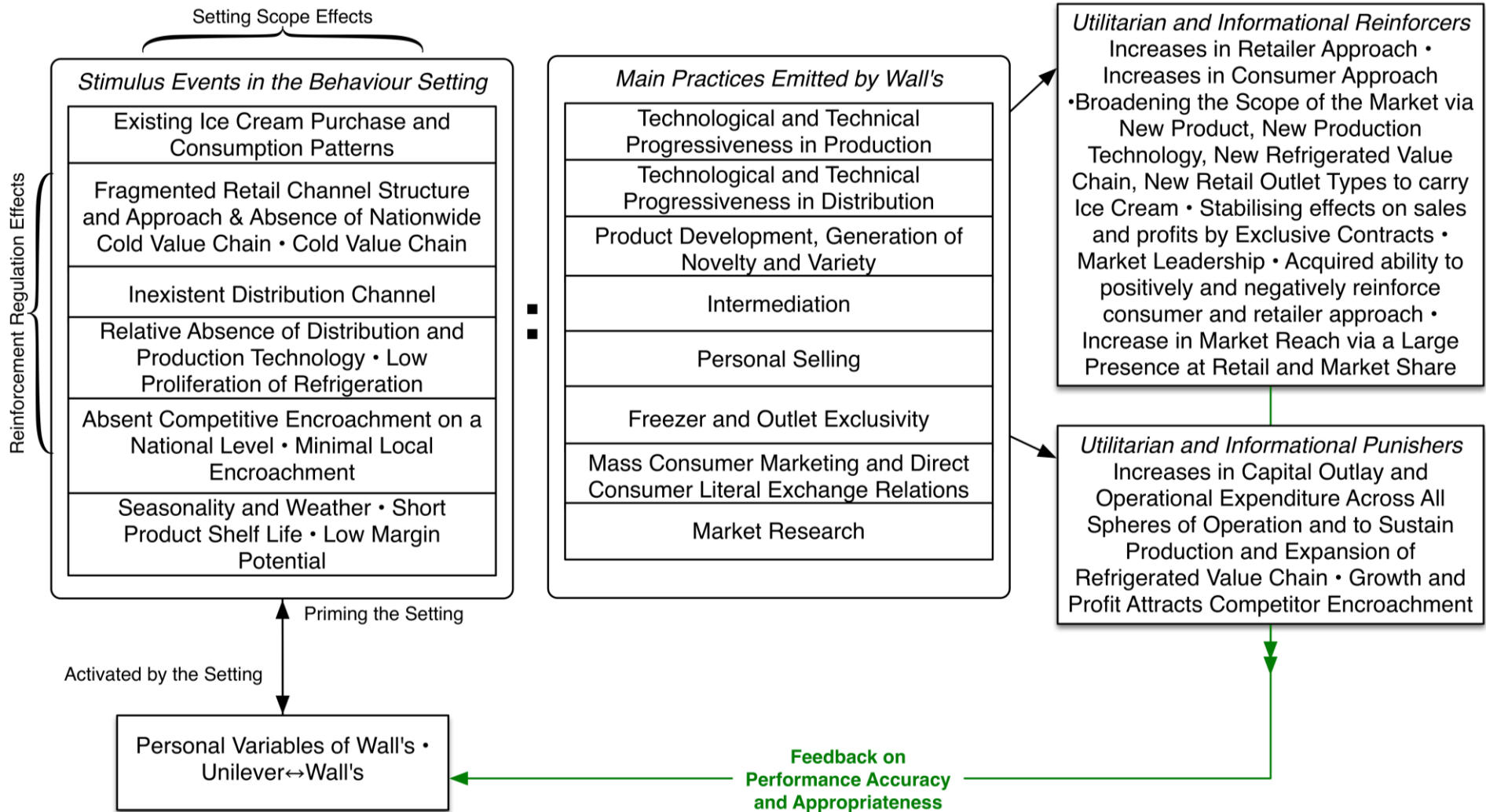
The elements of the BPM for the Introductory Stage are represented in Figure 72.

The evidence narrating the events around the point of market entry by Wall's was categorised according to distinct personal variables that primed and were activated by the prevailing market conditions in 1922: (1) a state of deprivation arising from the seasonal nature of the pork business that withheld sales and profits (reinforcers) during the summer months; (2) an existing learning history within the pork business making the behaviour of the firm susceptible to sales and profits as utilitarian reinforcers, to seasonality, and to demand conditions; (3) a rule inferred from the Unilever↔Wall's bilateral contingency relation indicating an already acquired *sensitivity to* the potential benefits of supplying products for mass consumption²⁶⁰; (4) a set of generic business rules; and, (5) the existing business model²⁶¹ which, at point of market entry, was clearly oriented (albeit on a much smaller scale) towards the manufacturing of a range of branded ice cream products produced on a relatively large scale to be marketed to an extensive nationwide retail network and marketed to a nationwide audience of final consumers for mass purchase and consumption.

²⁶⁰ Refer to Appendix 5, Section A5.3.1.

²⁶¹ See also Appendix 5, Sections A5.1, A5.2.1, A5.2.3, A5.2.5 to A5.2.6, and especially A5.3.1.

Figure 72 – The Elements of the BPM for the Marketing Practices of Wall's (1922 to 1939)



State of Deprivation and Seasonality

Wall's market entry was occasioned as an *escape-avoidance* response to the punishing consequences of manufacturing meat under conditions of seasonality. Summer was characterised by lower meat trading volumes and revenues (reinforcers) and by heavier incidence of fixed costs (punishers) and slower rates of sale (increases in the delay to generate reinforcement, hence, increased state of deprivation). Wall's entered an industry with seasonality running counter to that of the meat business. The operation of an ice cream business functioned to stabilise the otherwise imbalanced accruals of aggregate consumer and retailer demand, sales, profits, and costs experienced in its meat business throughout the year. Given that Wall's had been operating as a limited company in the meat trade since the late 19th century, its behaviour was already sensitive to the manner in which seasonality regulated the flows of the patterns of reinforcement and punishment²⁶². This physical environmental event regulated reinforcement and punishment in a manner analogous to a relatively *fixed interval schedule of reinforcement*²⁶³. In addition to seasonality and during the Introductory Stage, Wall's ice cream marketing practices acquired sensitivity to the manner in which patterns of reinforcement were generated under conditions of the vagaries of British weather. This second physical environmental event regulated reinforcement and punishment in a manner analogous to a relatively *variable interval schedule of reinforcement* because the amount of time that elapsed between one reinforcer (sales and profits) to the next varied according the frequent and unpredictable changes in British weather during any given season²⁶⁴. Thus, Wall's ice cream marketing practices acquired sensitivity to the manner in which seasonality combined with other factors (e.g., the weather) to regulate patterns of reinforcement and

²⁶² See Appendix 5 (Section A5.3.1).

²⁶³ Seasonality is defined as regulating behaviour patterns as if on a fixed interval schedule because reinforcement (sales and profits) is generated according to a relatively fixed time interval – 75% of sales and profits fall during the summer months (April to October) with relative regularity. See also Section 5.2.2B, Section 5.3.2, and 5.3.3 of this Chapter. The evidence for the conclusions on seasonality and the weather is presented in Appendix 5, Section A5.2.4.

²⁶⁴ The weather and climatic conditions in the UK were such that, in combination with the particular nature of ice cream, associated purchase and consumption behaviours varied greatly according to summer temperatures. To the extent that short term variations in the weather during summer led to wide and unpredictable daily and weekly sales: total ice cream revenues in one week could be half or double those of the following week and variations in individual product sales were substantially greater (Appendix 5, Section A5.2.4).

punishment in arrangements analogous to *concurrent schedules of reinforcement*²⁶⁵. Importantly, these effects became enduring rules prevailing throughout the history of the industry.

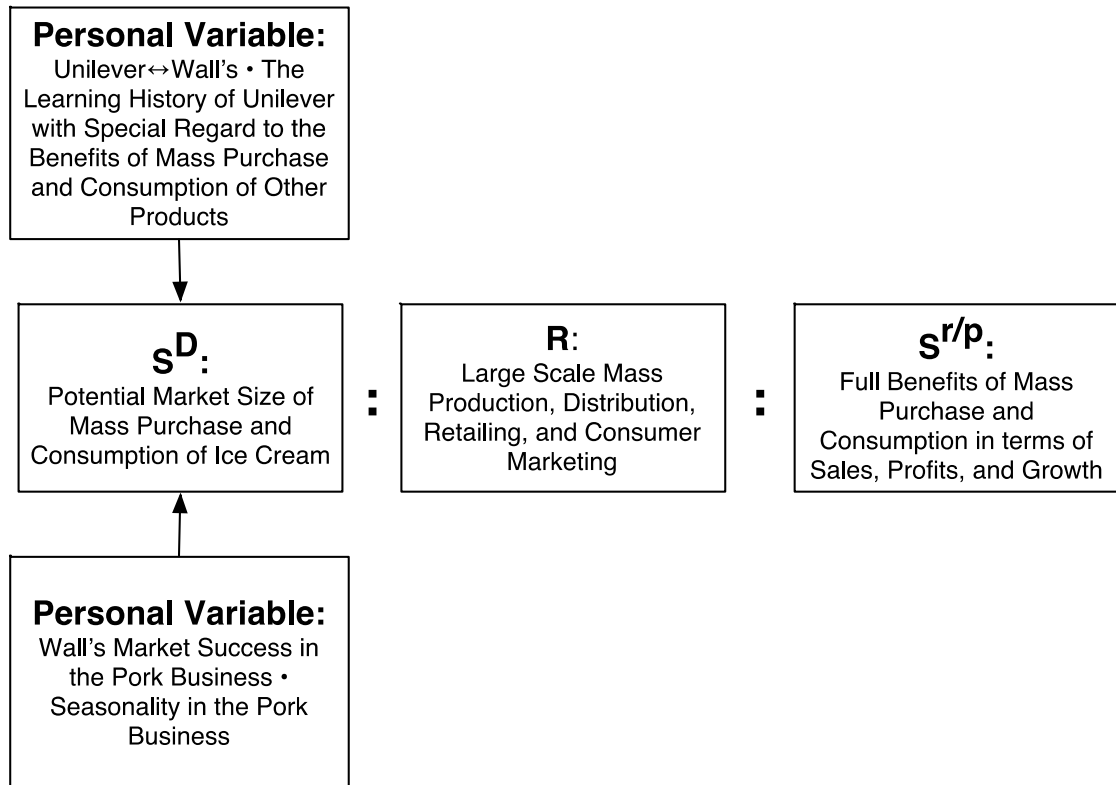
Generic Business Rules

Other rules inferred from the evidence as operating at the point of market entry include: (1) the contingency specifying the requirements for mass consumption (Figure 73). This was most probably derived from the Unilever↔Wall's bilateral contingency relation given the history of Unilever²⁶⁶.

²⁶⁵ A *concurrent schedule of reinforcement* is defined as an arrangement with two or more reinforcement contingencies operating simultaneously and independently for two or more emissions. Such compound schedules may entail the combination of continuous reinforcement and any of the four basic intermittent schedules (Cooper *et al.* 2007, pp. 316-317). Section 5.3.2 provides a detailed discussion of how seasonality and weather operate to regulate patterns of reinforcement contingent upon large-scale manufacturing. The evidence for the conclusions is presented in Appendix 5, Sections A5.2.3, A5.3.1, A5.3.3A, A5.3.3B, A5.4.2B, and A5.2.4D.

²⁶⁶ Appendix 5, Section A5.3.1 examines the history of Wall's and uncovers a possible misprint in the Ice Cream Report. Whereas the evidence records Lever Brothers (cofounders of Unilever) as having acquired Wall's in 1927, the Unilever website identifies 1922 as the date of acquisition. If this were the case, then the time of entry into the ice cream market coincided with the time of acquisition by Unilever. In reading through the timeline of the history of Unilever, the sensitivity to market opportunity, the emission of novelty and variation via new or improved production techniques, new product technologies, and relatively durable and heavily marketed brands to capture and deliver market value, and the drive towards strong expansion to harness mass consumption were characteristic behaviours of this conglomerate (For a timeline on the history of Unilever see Appendix 5, Section A5.13). Overall, the evidence demonstrates that Wall's repeatedly emitted practices sharing similar characteristics to that of its parent over the entire period of its history. (See Appendix 5, Section A5.3.1 and Section A5.4.2B.) It seems likely that at the point of market entry, the learning history of Unilever with respect to the mass production and marketing of products in other markets (namely, the soap and margarine business) primed the behaviour setting at the time to interpret prevailing market conditions in a particular way.

Figure 73 – Generic Business Rule Specifying Conditions for Accruing Benefits of Mass Purchase and Consumption



The full benefits ($S^{r/p}$) contingent upon the mass purchase and consumption of ice cream (S^D) could accrue only through following strategies of large-scale mass production and mass distribution, retailing and consumer marketing (R).

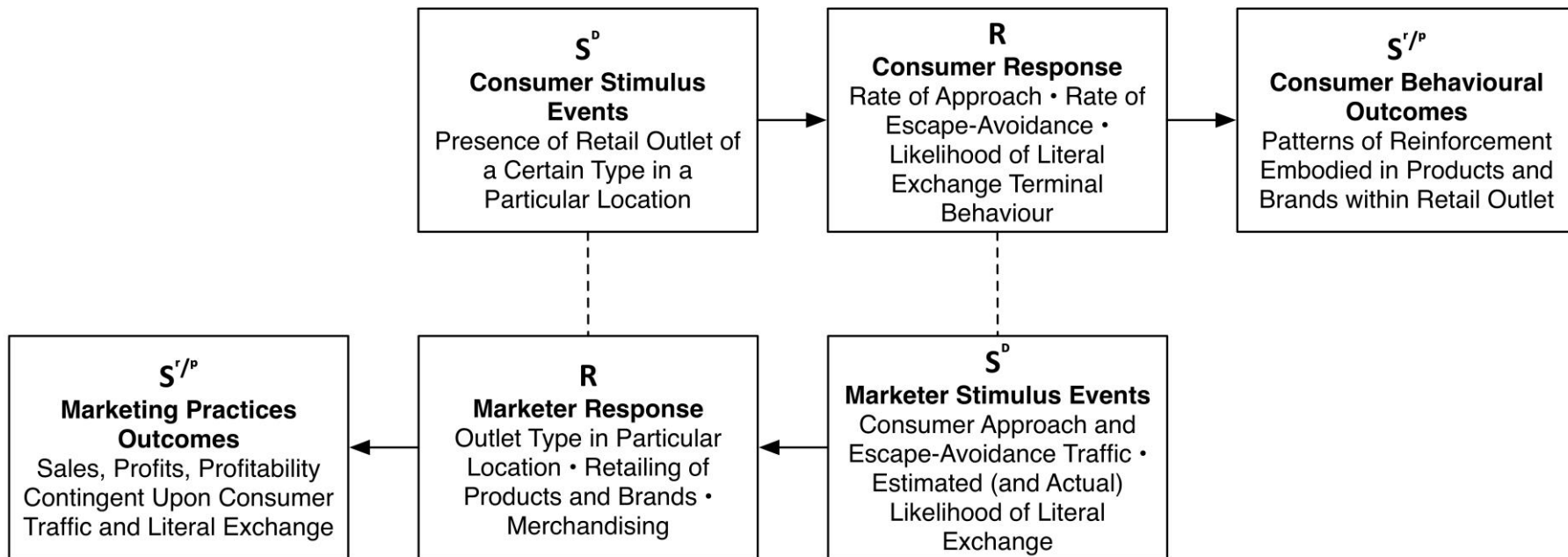
Source: Inferred from Evidence Presented in Appendix 5, A5.3 and A5.13

(2) The contingency specifying the mutually reinforcing relationship between retailers and consumers (the Consumer↔Retailer mutuality-plus-exchange bilateral contingency, Figure 74): Depending upon the retail outlet type and location, a given retailer attracts a certain volume of consumer traffic with some likelihood in terminating in exchange in the product class and in particular brands within a product class. Given the consumer↔retailer mutuality-plus-exchange bilateral contingency, a given retail outlet type is one route to some aggregated volume of consumer purchases of the product class and of the brands within the product class²⁶⁷.

²⁶⁷ This rule may have already been acquired by Wall's in its meat market operation.

Figure 74 – Business Rule Specifying the Generic Mutually Reinforcing Relationship between Consumers and a Particular Retail Outlet

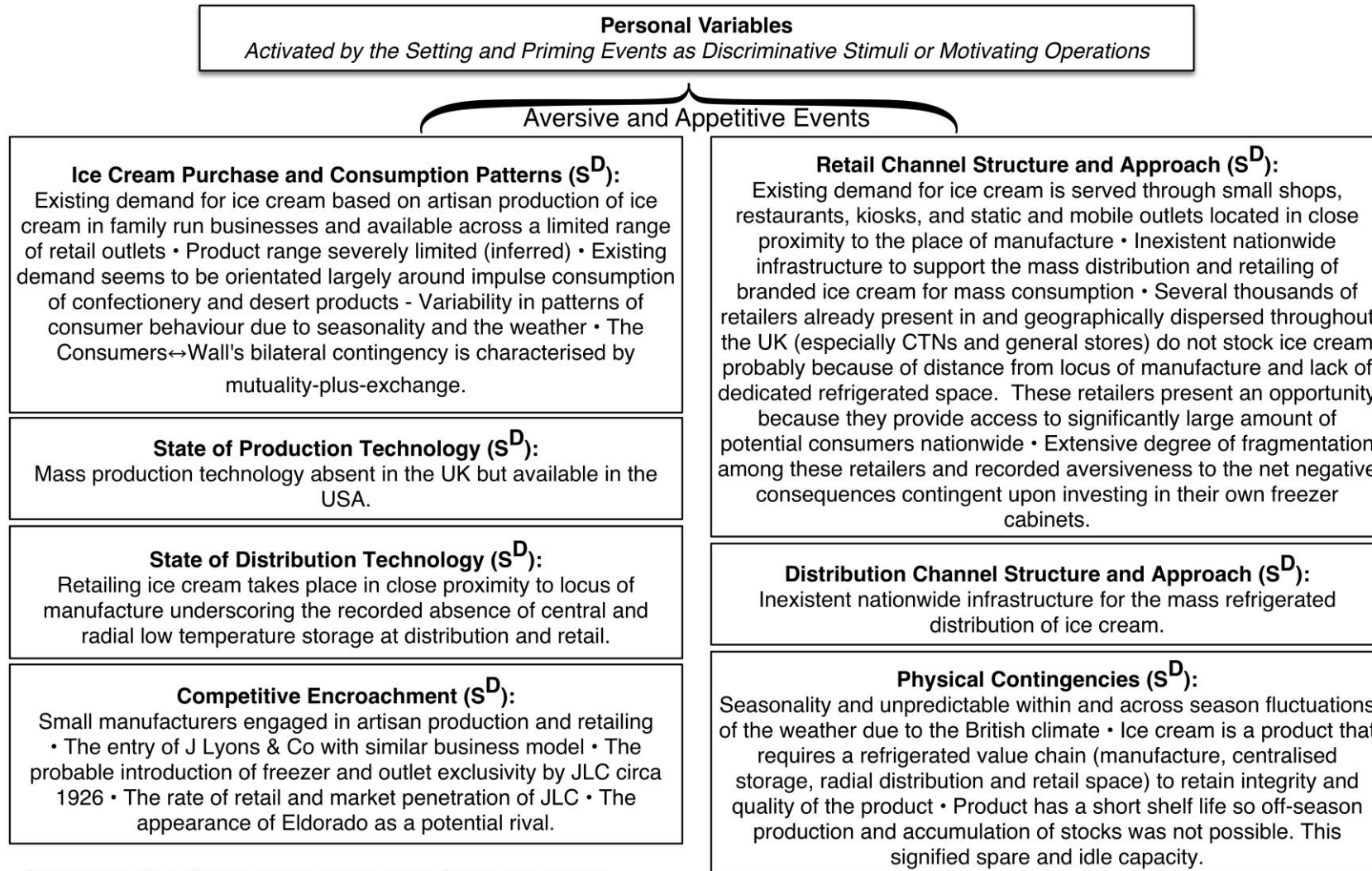
The presence of a retail outlet in the consumer behaviour setting (S^D) signals the alternative patterns of reinforcement and punishment (embodied in products and brands available in-store, $S^{r/p}$) contingent upon emitting approach, purchase and consumption patterns (R)



The presence of consumer traffic (S^D) signals the available (and potential) patterns of reinforcement and punishment arising from the conversion rate of such traffic terminating in literal exchange ($S^{r/p}$) contingent upon retailing certain products and brands (R).

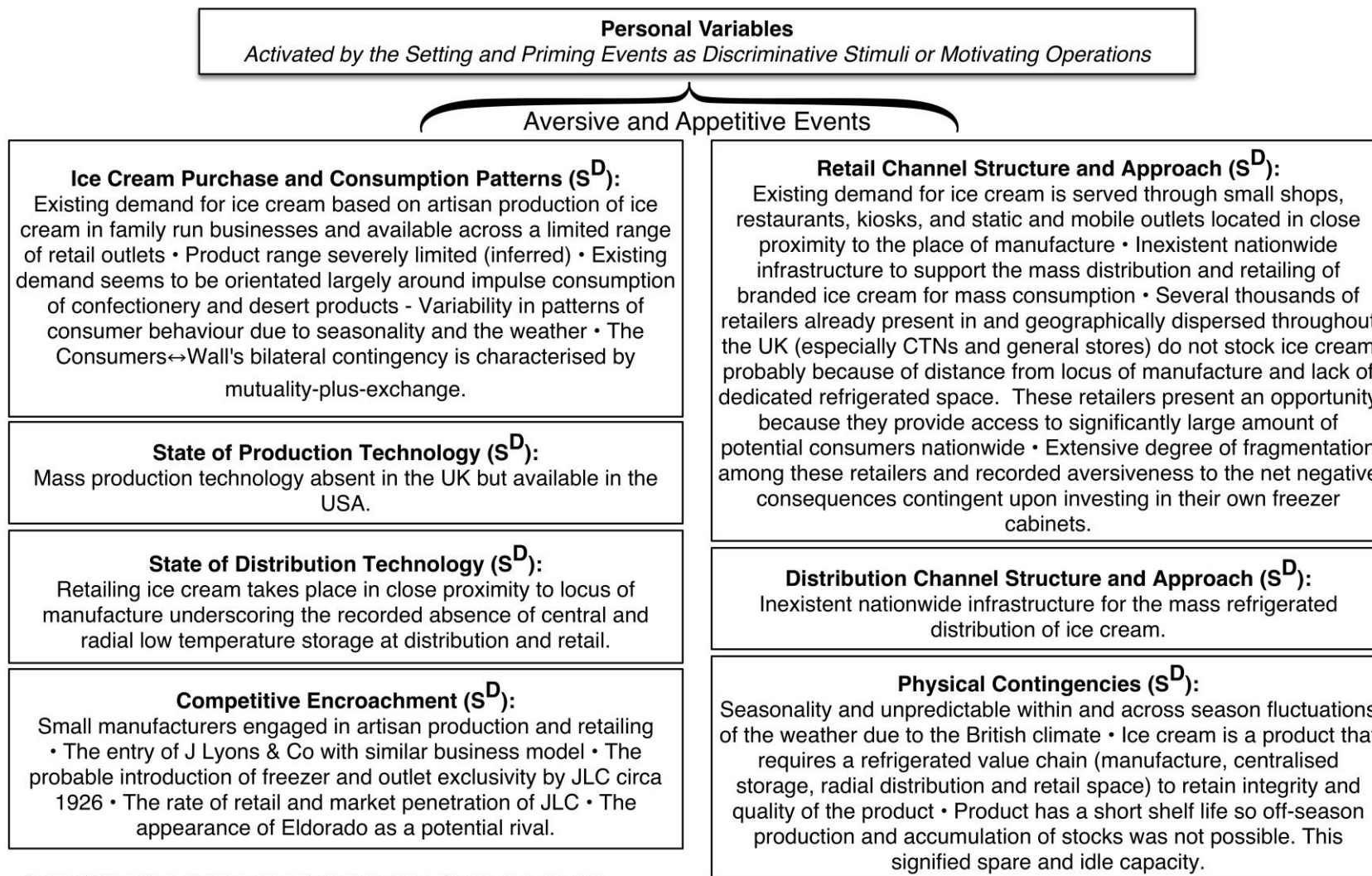
Source: Inferred from Evidence Presented in Appendix 5, Section A5.2 and A5.3

Figure 75 – The Main Discriminative Stimuli faced by Wall's (1922 to 1939)



Source: Inferred from Evidence Presented in Appendix 5, Section A5.2 and A5.3

Figure 76 – The Main Repertoires Emitted by Wall's in the Presence of Discriminative Stimuli (1922 to 1939)



Source: Inferred from Evidence Presented in Appendix 5, Section A5.2 and A5.3

Figure 77 – The Main Consequences of Wall's Marketing Practices (1922 to 1939)

Main Utilitarian and Informational Consequences of Marketing Practices	<p>Gained the ability to positively and negatively reinforce retailer approach and escape avoidance on an increasingly larger scale. Increased rate, strength and quality of retailer approach through the broadening of the market setting scope introducing new retail outlet types within the existing pool of retailers in the channel (<i>positive reinforcer</i>) • Increased the rate and strength of retailer approach with existing and new outlets being able to offer a new impulse product for purchase and consumption that is a substitute to other impulse confectionery items (<i>positive reinforcer</i>).</p>
	<p>The organisation of a nationwide network of retailers functioned to approach the potential rewards of such a network (e.g., extending geographical reach of an increased number of consumers, <i>positive reinforcer</i>) and escape-avoids the aversive consequences of extensive fragmentation, retailer heterogeneity and outlet disparity (<i>negative reinforcer</i>).</p>
	<p>Established and broadened the existing refrigerated infrastructure (including centralised and radial distribution and storage) functioned to encourage a wider variety of outlet types and larger number of retailers to stock ice cream (<i>positive reinforcer</i>).</p>
	<p>The provision of freezers under legally enforceable exclusivity contracts functioned to remove most of the aversive consequences associated with trading ice creams (including the reduction of the risks associated with the high capital expenditure and maintenance costs involved in owning a freezer and the relatively high volumes of ice cream that would have to be sold because of its low value product to break even and start earning profit. In fact exclusivity reduces retailer reinforcement delay). Exclusivity increased the readiness of retailers to stock ice cream in their outlets (<i>positive reinforcer</i>). Exclusivity had stabilising effects on revenues given the effects of seasonality and weather fluctuations (the reduction of a <i>positive punisher</i>).</p>
	<p>Gained the ability to positively and negatively reinforce (shape and maintain) consumer approach and escape avoidance on an increasingly larger scale. Increased in Consumer Approach through the broadening of the consumer behaviour setting scope by offering a relatively standard range of branded ice cream and increased availability at a wider cross section of retail outlets which cover a wider range of potential consumer situations (<i>positive reinforcer</i>).</p>
	<p>Increases in marketing costs to construct, expand, monitor and maintain a growing nationwide retailer network (<i>positive punisher</i>) and increases in all other operational costs including present radial distribution organisation (<i>positive punisher</i>) • Increases in capital outlay and operating expenditure to construct and maintain exclusive retail outlets (<i>positive punisher</i>) • The punishing consequences arising from the seasonal nature of its original meat manufacturing business (namely, lower trading volumes and revenues and heavier incidence of fixed costs (punishers) and slower rates of sale (increases in the delay to generate reinforcement, hence, increased state of deprivation during summer) were escape-avoided. The incidence of (aggregate) consumer and retailer demand, sales, and profits throughout the year was stabilised (<i>positive reinforcer and punisher</i>) • The acquisition of a manufacturing plant and the installation of production and distribution facilities of its own design, as examples of Wall's technological progressiveness function to reduce the aversive consequences of the absence of such technologies and related infrastructure in the market.</p>
	<p>By the outbreak of WWII, Wall's achieves status of national brand commanding a "market share and presence in retail outlets of major proportions" by the outbreak of WWII. The firm operated two factories, owned 8,000 tricycles through which it retailed ice cream directly to consumers via a network of 136 depots that also served around 15,000 retailers nationwide. In 1939, Wall's registered a turnover of £1,500,000 of ice cream.</p>

Signalling and Consequential Operations

Figure 75 highlights the main stimulus events and the associated responses (Figure 76) occasioned by these events (signalling operations) and the occasioned responses and associated consequences in the behaviour setting (consequential operations, Figure 77).

Signalling and consequential operations were manifested in the evidence in a number of ways. From the perspective of Wall's two interesting examples relate to (1) the rate of consumer approach to the patterns of reinforcement on offer via ice cream (as a product) and via competing brands; and, (2) the presence of a retail segment and the number of retailers within any given segment.

The Rate of Consumer Approach: as an antecedent neutral stimulus, existing ice cream demand achieved discriminative function via, (1) Wall's business model, (2) its learning history acquired in operating another business, and, (3) the state of deprivation given the seasonal nature of the meat business²⁶⁸.

Existing consumer demand functioned as a setting scope stimulus signalling (as a range of possible behaviours): (1) available quantities and quality of patterns of reinforcement and punishment contingent upon Wall's supplying products and brands that satisfied certain consumer reinforcement criteria; and, (2) one route to gaining access to these reinforcers and punishers²⁶⁹.

As Wall's accumulated a learning history of supplying ice cream directly to consumers under prevailing conditions, changes in the rate and strength of consumer approach, as a result of the various pull strategies adopted by the

²⁶⁸ As stated earlier, the state of deprivation associated with seasonality of the pork business is defined in terms of the regulation of patterns of reinforcement as if on a fixed interval schedule of reinforcement.

²⁶⁹ As described in Appendix 5 (Section A5.3.3) Wall's served both consumers and retailers directly (i.e., a mutuality-plus-exchange bilateral contingency) until 1963. After, Wall's only served retailers directly and thus engaged in mutuality-only bilateral contingency relations with its consumers.

firm, became *consequential stimuli* (*positive utilitarian and informational reinforcers and punishers*). The positive correlation between changes in demand and changes in strength and content of marketing practices by Wall's (and other members of the supply chain) is clearly manifest throughout the entire history of the industry²⁷⁰. Hence, as a *consequential stimulus*, consumer demand signalled the availability of patterns of reinforcement and punishment arising from and contingent upon conducting literal exchange in ice cream and in Wall's brands at retail (*quantity and quality of reinforcers*).

Thus, Wall's behaviour acquired sensitivity to the patterns of reinforcement contingent upon serving consumer demand for ice cream. Wall's behaviour also became sensitive to the changes in various dimensions influencing consumer demand. The various topographies of behaviour emitted by Wall's may be classed as *approach responses* to the patterns of reinforcement on offer via patterns of ice cream purchase and consumption behaviours.

The Rate of Retailer Approach: As an antecedent neutral stimulus, the quantity and quality of possible retailers achieved *discriminative function* by virtue of (1) the business model of Wall's, (2) the learning history acquired in operating other businesses, (3) the state of deprivation, and, (4) the generic business rule specifying the mutually reinforcing relationship between retailers and consumers (Figure 66 and Figure 73)²⁷¹.

Retailer demand for the product depended on consumer traffic and expenditure at retail outlets and consumer approach to the patterns of

²⁷⁰ Sections A5.2.3 and A5.3.3 in Appendix 5 demonstrate how increases and decreases in consumer demand for ice cream occasioned periods of intensified marketing and the generation of variation and innovation by Wall's to acquire new customers and to expand the market for ice cream. See also Appendix 5, Section 5.4.4. In parallel, these marketing mixes functioned as stimuli occasioning further growth (and also shifts among competing products) in consumer demand. The establishment and maintenance of a national network of CTNs and general stores with freezers after WWII increased the availability of ice cream to a wide cross section of the population and, in parallel, brought the product in direct competition with other non-ice cream confectionery products. Section 5.3 of this Chapter (particularly Section 5.3.1) discusses reciprocity as a key finding emerging from the evidence. Other factors influencing the growth of consumer demand for ice cream and shifts in purchase and consumption patterns (in favour of particular products and across different retailing situations) included increasing affluence among British consumers. See also Appendix 5, Section A5.3.3.

²⁷¹ The generic business rule as described earlier also implies a degree of managerial deliberation on the part of Wall's.

reinforcement contingent upon ice cream purchase and consumption. Existing retailer demand functioned as a setting scope stimulus signalling available quantities and quality of patterns of reinforcement contingent upon Wall's supplying the product on terms that satisfied retailer reinforcement criteria (and on supplying products and brands that satisfied consumer criteria). The quality of any retailer depended on the type of outlet²⁷². In *aggregate*, retailers represented a second, richer, and more prominent route to consumers (as reinforcers): Each intermediary represented a network of consumers – some volume of traffic to the particular outlet. Therefore, each represented a potential touch-point for Wall's to an otherwise directly inaccessible group of consumers (as reinforcers)²⁷³.

As Wall's accumulated a learning history of supplying ice cream directly to retailers, changes in the rate and strength of retailer approach, as a result of the various push strategies adopted by the firm, became *consequential stimuli (positive utilitarian and informational reinforcers and punishers)*. The positive correlation between changes in retailer demand and changes in strength and content of marketing practices by Wall's (and other members of the supply chain) is clearly manifest throughout its entire history²⁷⁴. Hence, as a *consequential stimulus*, retail trade demand signalled the availability of patterns of reinforcement and punishment arising from and contingent upon *intermediation*. The construction, maintenance, and expansion of a nationwide refrigerated retail network was shaped and maintained by net positive increases in retailer approach patterns throughout a 50-year history²⁷⁵.

Some of the emissions within the intermediation repertoire may be classed as escape-avoidance on the part of Wall's from the then existing

²⁷² The type of outlet relates to the different kinds of retail stores each of which attracts different volumes of consumer footfall. For example, a small grocer within a remote village, a beach concession with seasonal sales, a cinema, or a newsagent in central London, each has varying business volume potential.

²⁷³ By 1939, Wall's had direct contact with consumers through 8,000 tricycles and around 15,000 retailers (see Section 5.1.1 of this chapter and Appendix 5, Section A5.3.1). And each of these 15,000 retailers had some volume of consumer traffic to the extent that by the later 1930s, Wall's registered £1.5m in sales.

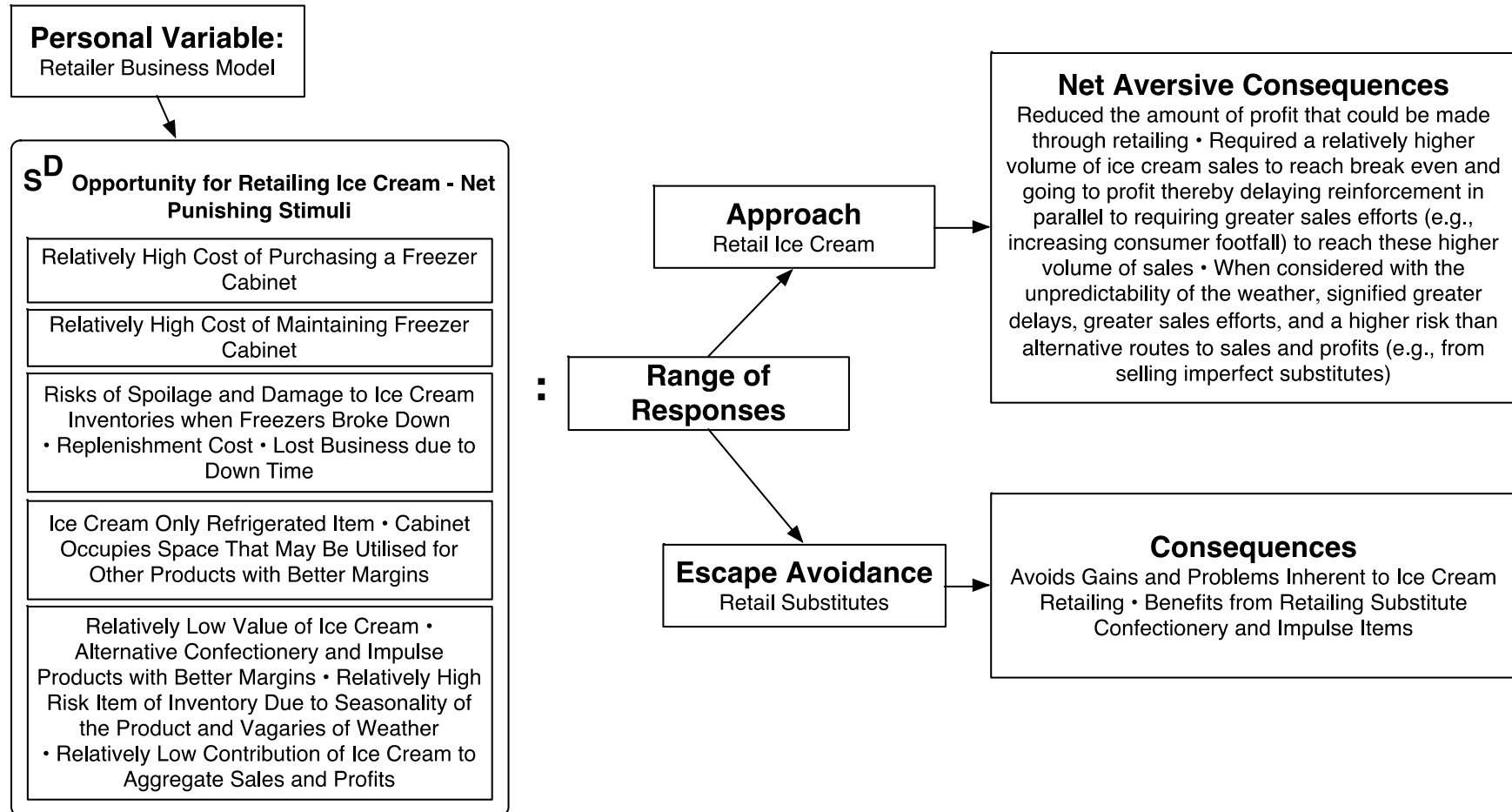
²⁷⁴ See, for example, Appendix 5, Section A5.3.1 and A5.2.3.

²⁷⁵ According to the Commission (see Appendix 5, Section A5.3) the development of a nationwide network of retailers populated mainly by CTNs and general stores via the provision of exclusive freezers by manufacturers was one of the three factors that transformed the ice cream industry.

aversive events signalled by the structure of the value chain including: (a) the relatively high degree of fragmentation as a characteristic of the existing stock of retail outlets operating within the market during the period; (b) the extent of outlet heterogeneity within the traditional trade segment; (c) the lack of adequate central storage and radial distribution infrastructure to these outlets; (d) the relatively high cost of organizing, maintaining, and expanding a nationwide network of such retailers; and, (e) the averseness of retailers to carrying ice cream (Figure 78)²⁷⁶. So, for example, offering a freezer cabinet may be classed as an *escape-avoidance* response by Wall's to this latter aversive event.

²⁷⁶ As a rule, retailers generally shied away carrying ice cream (a punishing stimulus). The averseness to retailing ice cream arose from the capital outlay and maintenance expenditure involved in owning a freezer cabinet, from the risks of spoilage and damage to ice cream inventories when freezers broke down, from ice cream being the only frozen item on sale at such CTNs and entertainment/seasonal outlets, from the sensitivity of retailer behaviour to the punishing consequences of carrying a relatively high-risk item of inventory because of the unpredictability of weather conditions, of the relatively low value of ice cream and of its relatively low contribution to aggregate sales and profits. These factors (1) reduced the amount of profit that could be made through retailing; (2) required a relatively higher volume of ice cream sales to reach breakeven and going to profit thereby delaying reinforcement in parallel to requiring greater sales efforts (e.g., increasing consumer footfall) to reach these higher volume of sales; and, (3) when considered with the unpredictability of the weather, signified greater delays, greater sales efforts, and a higher risk than alternative routes to sales and profits (e.g., from selling imperfect substitutes). Appendix 5, Section A5.3 describes how there was a general consensus among the smaller retailers that any profits arising from the contribution to revenues of retailing ice cream were insufficient to cover the costs of investing in freezer cabinets and maintaining them in a good state of repair. Section A5.9 summarises the views of several parties approached by the Commission who had vested interest in the ice cream industry. These include retail trade bodies.

Figure 78 – Rule Specifying Typical Averseness of Retailers to Trading Ice Cream



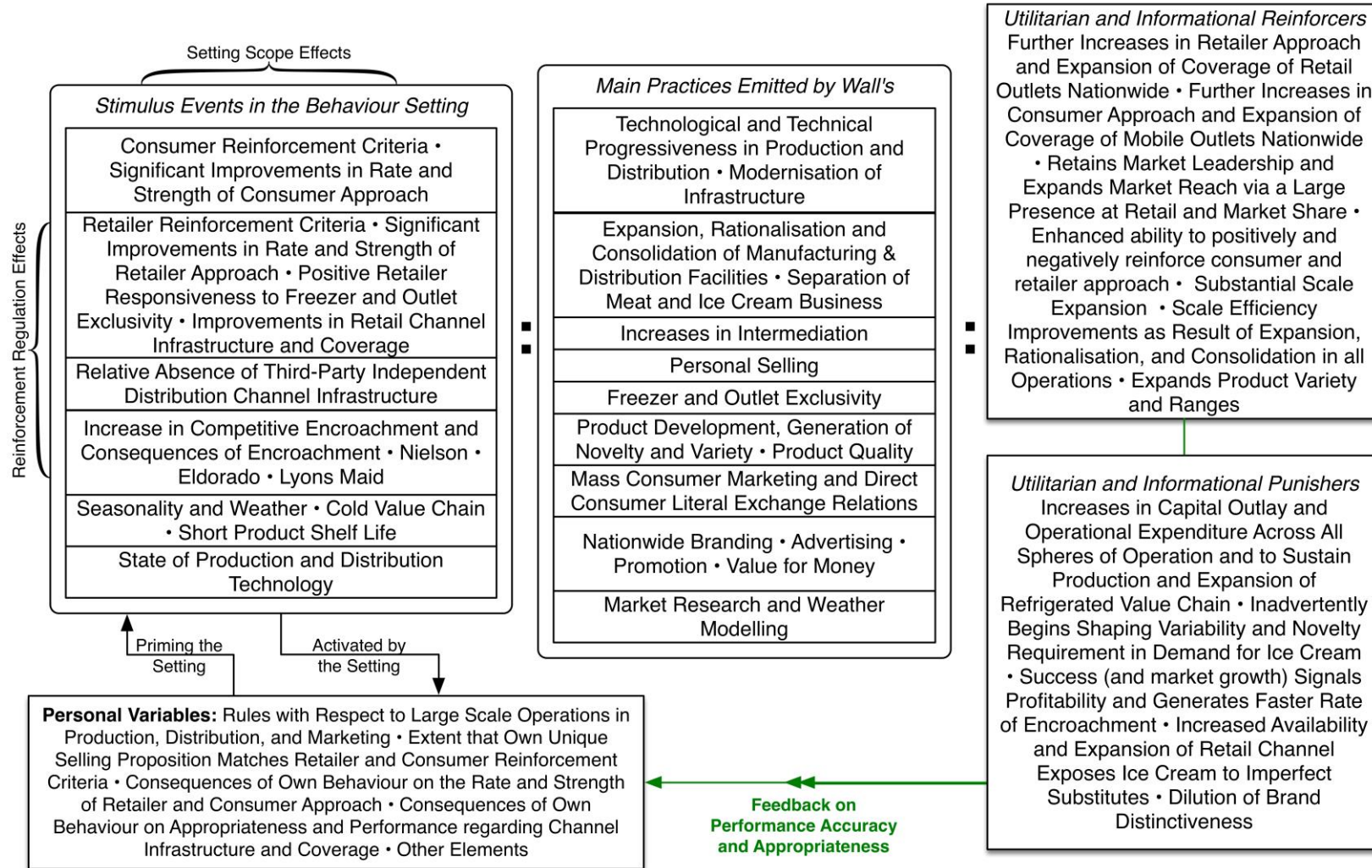
Source: Appendix 5, Section A5.3

Offering freezers on a relatively large scale had significant negative consequences that, in turn, occasioned emissions that functioned to reduce their negative impact on the business: The aggregate costs of offering and administering freezer exclusivity (e.g., the outlay of the freezer, the associated risks given unpredictable weather, the legal costs, insurance, freezer maintenance costs and so on) represented an utilitarian and informational punisher to Wall's that also signalled (1) increasing delays in achieving breakeven and going to profit (analogous to *increasing the interval between behaviour and the generation of reinforcement on an already variable interval schedule*) and (2) requiring increasing efforts (analogous to *increasing the number of responses to produce reinforcement on an already variable ratio schedule*). The increased personal selling and marketing activities by Wall's to build a large retailer network with national coverage functioned in a process analogous to *negative reinforcement* to reduce the incidence of these punishers. The investment and the operation of a largely *vertically integrated central and radial distribution system* also functioned to reduce the aversive stimuli just summarised. All increases in sales volumes reduced the aversive consequences of running such a distribution system (*negative utilitarian reinforcement*). Achieving economies of scale thus represent *negative informational reinforcement*.

B. The Growth Stage: 1940s to 1960

The elements of the BPM for the Growth Stage are represented Figure 79. Based on the evidence of learning history acquired during the Introductory Stage, four expectations of how Wall's would behave given sufficiently similar settings may be hypothesised. Such expectations are interpreted in terms of the sensitivity of Wall's marketing practices to particular environmental stimuli carried forward from the Introductory to the Growth Stage.

Figure 79 – The Elements of the BPM for the Marketing Practices of Wall's (Post WWII to 1960)



Source: Evidence Presented in Appendix 5, Section A5.2 and A5.3

First, during the Introductory and Growth Stages Wall's faced and retained direct exposure to the effects on the flow of patterns of reinforcement and punishment by the combination of the contingencies associated with seasonality and weather with those involved with large-scale manufacturing²⁷⁷. Its practices acquired and retained a particular sensitivity to these combined effects (as if on concurrent schedules). Ice cream had a relatively short shelf life making off-season production and the accumulation of stock during the winter impossible. Any storage resulted in high operational costs. Wall's was thus exposed to relatively idle spare capacity and the salience of this punisher increased as manufacturing capacity expanded. In addition, these contingencies imposed an emergent and enduring rule: For a business to achieve a certain large-scale operation, the requirements of cold storage and refrigerated distribution (arising from the physical contingency) formed a major element of total cost. Manufacturers required either their own distributive network (including cold stores, depots, and refrigerated vehicles) or access to a distributor who operated such a network.

Second, Wall's marketing practices acquired sensitivity to the combination of seasonality and the weather with other factors and to the manner in which these environmental conditions regulated patterns of reinforcement and punishment as if on concurrent schedules. Additional factors included, for example, the relatively low value of ice cream, its short shelf life, low temperature transport and storage requirement, and the relatively high and stable incidence of fixed costs on the ice cream business throughout the year (and especially off season)²⁷⁸. The combination of these contingencies accentuated the uncertainty inherent to the environment and the unpredictability of the incidence of sales and profits. Wall's market entry suggests an attempt at emitting behaviour that altered the variability of the concurrent schedules to

²⁷⁷ For an explanation of the latter contingencies, see Appendix 5, Sections A5.2.5, A5.2.6, and A5.3.2.

²⁷⁸ The average purchases of small stores stood at £200 to £300 per annum.

render these more stable and reduce the aversive effects uncertainty had on its business²⁷⁹.

Third, during the Introductory Stage Wall's was directly exposed to the *actual* benefits contingent upon evoking mass consumption of ice cream and its practices acquired a positive sensitivity to the patterns of reinforcement arising therefrom. Positive results gained throughout the introductory and growth periods increased the effectiveness of the rules that Unilever may have specified with respect to potential benefits of mass consumption (Figure 73).

Fourth, during the Introductory Stage, the marketing practices of Wall's acquired sensitivity to six environmental factors:

(1) The rewards associated with increases in retailer approach and in traded volumes through the expansionary effects of Wall's intermediation efforts. Intermediation operated on the number, type, and geographical location of retailing outlets with a potential for stocking ice cream and expanded the value chain coverage and market reach of Wall's thereby broadening the scope of the market (as more retailers began trading in ice cream). The intermediation repertoire comprised (a) personal selling including canvassing existing and new outlet types and engaging in direct mutuality plus exchange relations with retailers offering terms and conditions aimed at evoking take-up of ice cream retailing (i.e., regulating patterns of reinforcement to direct retailer behaviour towards economic and social exchange); and (b) offering exclusivity arrangements that functioned to remove or reduce the more punishing consequences that would be typically experienced by retailers for trading ice cream (Figure 78)²⁸⁰. Setting scope expansion functioned to increase the number of alternative routes available (i.e., retailers of different types, size,

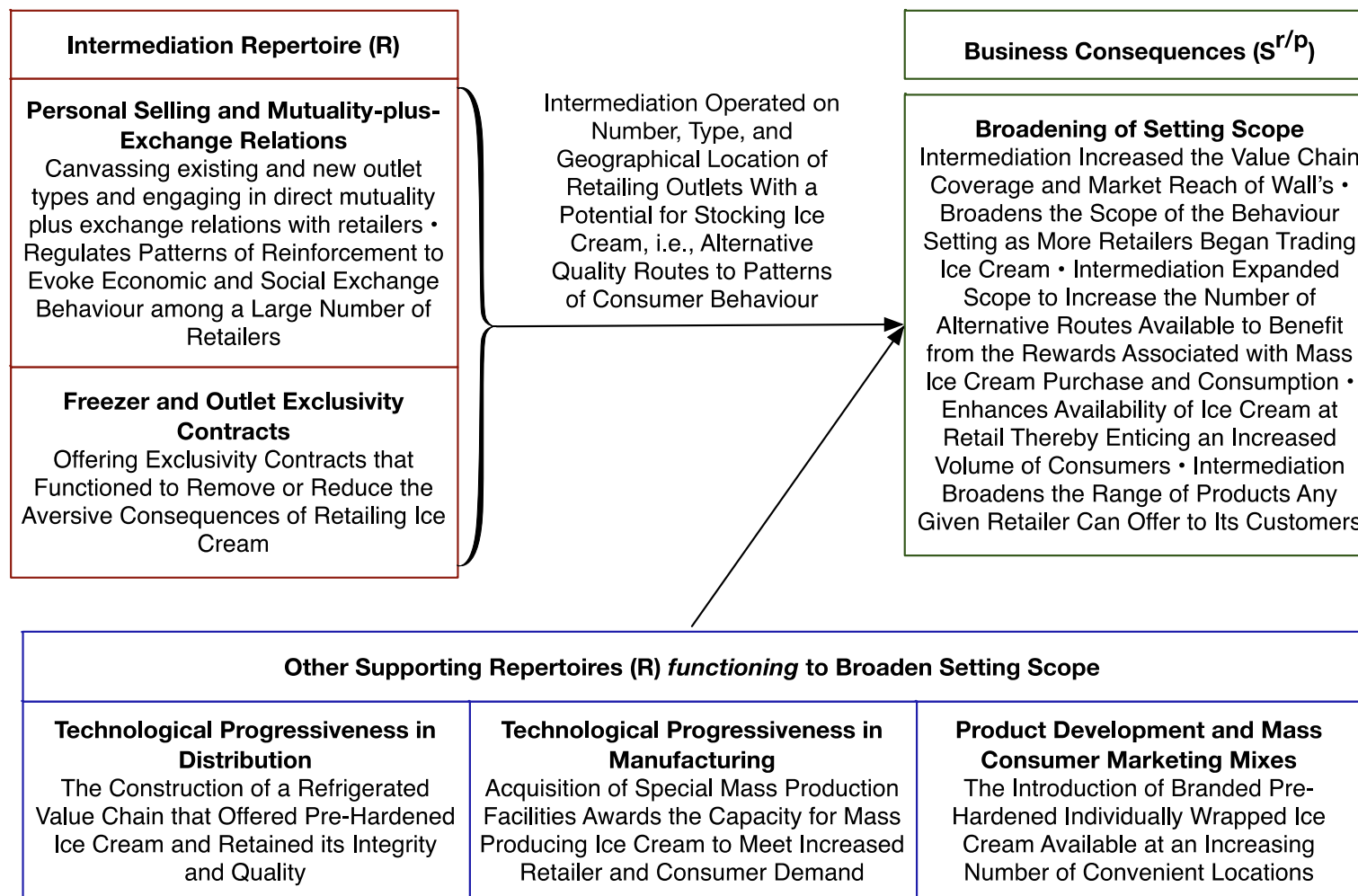
²⁷⁹ Section 5.3.3 of this chapter discusses how weather and seasonality in conjunction with these additional factors emerged as rules governing the behaviour of Wall's constraining setting scope and regulating patterns of reinforcement. Section 5.3.2 discusses concurrent schedules as useful analogies in unravelling the evidence. (See also Appendix 5, Sections A5.2.4, A5.2.5, and A5.2.6). The first experiences with aversive consequences of operating an ice cream business under conditions of demand variability due to unpredictable weather fluctuations (see especially Appendix A5, Section A5.3.3) were probably formed during the Introductory Stage.

²⁸⁰ Appendix 5, Section A5.4.5C provides an extensive discussion of Wall's outlet and freezer exclusivity offer to retailers. Briefly, the contracts offered by Wall's removed or reduced most of the aversive consequences of retailing ice cream including the capital outlay in a freezer cabinet and most of the costs in maintaining the cabinet.

geographical location) to better benefit from the rewards associated with mass ice cream purchase and consumption (Figure 80)²⁸¹.

²⁸¹ Other repertoires had properties that functioned simultaneously, independently, and in combination to expand the behaviour setting scope including: (a) the acquisition of special mass production facilities for manufacturing ice cream (technological progressiveness in manufacturing), (b) the construction of a refrigerated value chain that offered pre-hardened ice cream and retained its integrity and quality (technological progressiveness in distribution), and (c) the introduction of branded pre-hardened individually wrapped ice cream available at an increasing number of convenient locations (product development and mass consumer marketing mixes), all moves that broadened the range of products that retailers could offer to their customers.

Figure 80 – Setting Scope Qualification Effects of Wall’s Intermediation, Technological Progressiveness, Product Development, and Mass Consumer Marketing Repertoire



Source: Evidence Presented in Appendix 5, Section A5.2 and A5.3

(2) The rewards associated with increases in retailer approach and traded volumes due to the positive effects intermediation and other practices had on increasing and improving the incidence of retailer sales and profits. Via exclusivity and other marketing efforts, Wall's gained an ability to positively and negatively reinforce (i.e., to shape and maintain) retailer and consumer approach²⁸².

(3) The behaviour of Wall's also acquired sensitivity to increases in consumer approach due to, for example, its product development efforts (including the generation of novelty) and distinctive branding. Product development functioned to broaden the setting scope faced by consumers by offering a novel and alternative route to relative patterns of reinforcement contingent upon purchase and consumption of the impulse confectionery product class. Distinctive branding functioned to distinguish Wall's products from those offered by all other rivals and regulating consumer approach towards ice cream by providing feedback (as informational reinforcers) on the performance of the brand with respect to satisfying particular consumer reinforcement criteria in relation to other ice cream brands and non-ice cream (imperfect) substitutes. Exclusivity at retail functioned to curtail the range of choices available to consumers making escape-avoidance (via any alternative ice cream brands) impossible (escape-avoidance was possible, however, via non ice cream products)²⁸³.

(4) Throughout the Growth Stage, the evidence suggests the practices of Wall's as retaining sensitivity to increases in utilitarian (e.g., sales and profits) and informational (e.g., retail network coverage, market share) reinforcers contingent upon emitting repertoires that feature: (a) The capacity to qualify the scope of the behaviour settings of consumers and of retailers for the purposes of evoking higher and faster rates and quality of approach with an increased

²⁸² Exclusivity arrangements featured provisions that reduced the more punishing consequences of trading in ice cream. Technological progressiveness in production and product development provided retailers with a new source of revenue via the introduction of a new impulse confectionery item (i.e., a standard and relatively narrow range of ice cream products) to offer to consumer footfall. Technological progressiveness at distribution enabled retailers the opportunity with offering a new product, ice cream, to their customers thereby increasing the sales and profits potential to outlets.

²⁸³ Consumers widely accepted the novel ice cream product and Wall's branded ice cream was "an immediate success" (Monopolies and Mergers Commission 1979, p. 29). See also Appendix 5, Section A5.3.1 and Section A5.3.3.

likelihood of terminating in sales, and, (b) The capacity to regulate the patterns of reinforcement for the same purposes. Further, increases/decreases in retailer and consumer approach and increases/decreases in competitor encroachment in the current setting functioned as consequential stimuli.

(5) The behaviour of Wall's also acquired sensitivity to such punishing consequences as increases in capital outlay and associated maintenance costs attributable to an increasing number of retailers requiring the provision of a freezer.

(6) Wall's acquired the status of a national brand and market leadership at production and retail by 1939 considerably well before Glacier. As a potential positive informational reinforcer, the status provided feedback on the appropriateness and accuracy of Wall's performance vis-à-vis the prevailing physical contingencies, the behaviour of others within the marketplace, and the rules established within the business model and predicated by other personal variables. The sensitivity to informational reinforcement appears to have been retained during Growth.

During the period, the business model of Wall's remained unchanged.

C. Early Maturity: the 1960s

The elements of the BPM for Early Maturity are represented in Figure 81.

Figure 81 – The Elements of the BPM for the Marketing Practices of Wall's (1960s)



Source: Evidence Presented in Appendix 5, Section A5.2 and A5.3

The behaviour of Wall's gained greater sensitivity to the positive changes occurring in the quality and quantity of patterns of reinforcement contingent upon (1) the increasing rate and strength of retailer approach (an ever-expanding nationwide network of CTNs, SGSs, and other Traditional Trade outlets), and, (2) the significant explosion in the demand for ice cream from people of all ages and social classes. These increases were in part due to retained repertoires that functioned to positively or negatively reinforce retailer and consumer approach behaviour towards literal exchange. Such repertoires included the development of new products, the generation of variety through the expansion of new product lines thereby broadening the comprehensiveness of its offering, rationalisation of its production and distribution facilities and so on²⁸⁴. Resultant increases in sales and profits, in turn, positively and negatively reinforced all the practices that generated such sales and profits: Employing the large-scale operations business model was further reinforced by increasing sales, profits, market share, and return on average capital employed and decreasing per unit costs²⁸⁵.

Exclusivity remained as the more significant source of stable, unassailable revenue streams as an increasing number of small sized retailers began trading in ice cream under these contractual conditions²⁸⁶. Exclusive contracts provided Wall's with the *retained* capacity to shape and maintain retailer approach²⁸⁷. The overall (increasing) positive response by small retailers further encouraged the continuity of behaviour (positive informational *reinforcer*). On such a large scale, the aggregate utilitarian and informational rewards of offering exclusivity (high volumes enabling large scale operations and scale economies in marketing, distribution, and production; market share; real growth and so on) shaped and maintained the practice among

²⁸⁴ Exclusivity in contracts negatively reinforced retailer approach because contracts strengthened approach behaviour by reducing or removing its aversive consequences.

²⁸⁵ The benefits of rationalisation negatively reinforced efforts for rationalisation because such practices as modernising the distribution infrastructure operated to reduce per unit costs (a positive punisher) experienced by Wall's. In addition, rationalisation facilitated more aggressive push strategies (see, for example, Appendix 5, Section A5.3.1 and A5.3.2).

²⁸⁶ Thus such outlets as CTNs and SGSs became the most prominent reinforcer in the market structure prevailing until the 1960s.

²⁸⁷ Unfortunately, there is no evidence with respect to how the actual exclusive contracts evolved and how the various provisions therein were amended. Given the little available evidence, it is reasonable to assume that there was little material change. However, no definitive conclusion can be drawn. An operant analysis of these contracts along similar lines to the research performed by Miner (1990, 1991) on organizational change through the selective retention and elimination of jobs is suggested.

manufacturers over several decades. In parallel to maintaining *direct mutuality-plus-exchange relationships* with retailers and right up until 1963, Wall's also maintained *direct mutuality-plus-exchange relationships* with consumers.

The sensitivity of Wall's behaviour to the irregularity of the patterns of reinforcement contingent under conditions of seasonality and the unpredictable weather remained.

During the Growth and Early Maturity Stage, Wall's gained a greater sensitivity to competitive encroachment (a punishing informational stimulus signalling the aversive consequences of competing). The interaction of an organisation with its competitors (in a mutuality-only bilateral contingency) signified a rule of the possible loss of revenues, profits, and market share to rival efforts and the qualification of the behaviour setting scope (Vella and Foxall 2011). The explosive growth in consumer demand for ice cream during the late 1940s up until 1961 occasioned an increased rate of competitor encroachment: Glacier, Eldorado, and Nielson were among the rising stars expanding their own channel reach, productive and distributive capacity, and product ranges and brands to satisfy retailer and consumer reinforcement criteria and encourage sales. Thus, as proposed by the SMC framework, the number of externals appearing to be arranging and controlling the contingencies of reinforcement increased. The increase in the number and in the quality of these rivals also increased the cost of Wall's to escape-avoid these the aversive consequences of encroachment (in terms of the greater expense involved in expanding production, distribution, and the retailer network and of offering broader and more comprehensive product ranges)²⁸⁸.

Given Wall's retained market leadership position throughout the 1940s and 1960s, it is also reasonable to assume that practices of the organisation remained informationally reinforced by feedback on the appropriateness and accuracy of its performance vis-à-vis the prevailing physical contingencies, the

²⁸⁸ See Appendix 5, Section A5.3.

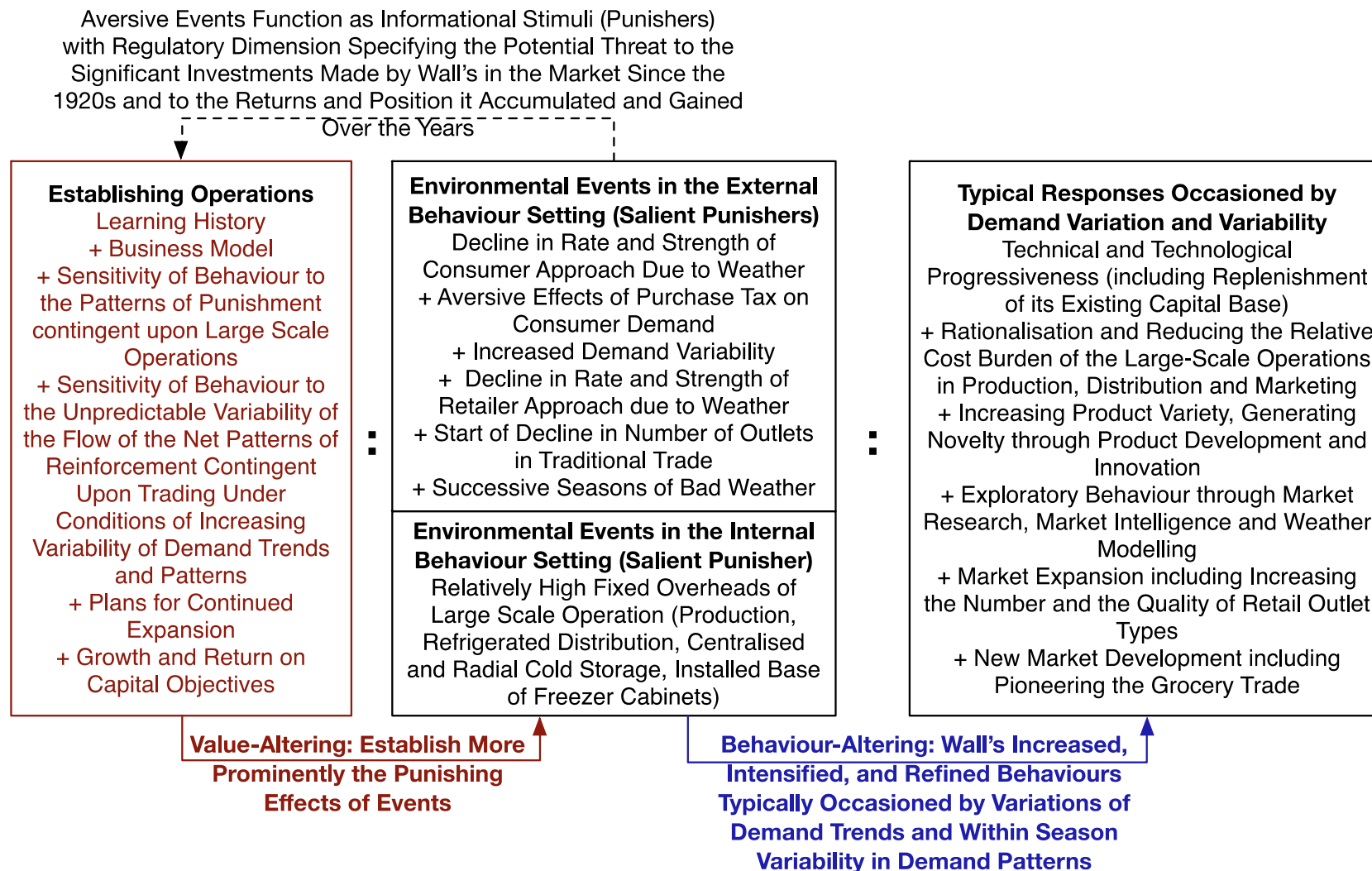
behaviour of others within the marketplace, and the rules established within the business model and predicated by other personal variables²⁸⁹.

There is strong evidence of several environmental events assuming motivating rather than discriminative function during the 1960s. The evidence is summarised in Figure 82²⁹⁰.

²⁸⁹ The Ice Cream Report does not explicitly state that Wall's remained market leader and therefore it is debatable whether market leadership functioned as a positive informational reinforcer during the growth and maturity stages of Wall's learning history. However, there is extensive evidence on the history of Glacier within the report that depicts this firm as constantly tailgating Wall's by adopting a growth by merger and acquisition strategy (see Appendix 5, Section A5.2 and A5.3 and Appendix A5.11.). To the extent that Wall's leadership position had value-altering effects on the behaviour of Glacier (see Appendix 5, Section A5.2.1) - Glacier did not have a national brand of equivalent standing relative to Wall's until the 1960s. The issue of market leadership is further investigated in Section 5.2.1D and Section 5.4.2 of this chapter. This suggests that Wall's retained leadership since, at least, the 1930s. (Future research ought to investigate the history of change in the managerial behaviour setting that may have led to Wall's retaining leadership of the UK ice cream market for the past 90 years. Note that according to the Financial Times, Wall's holds approximately 40% of total market share and the next largest single competitor, R & R Ice Cream, controls 30% (Marsh 2012).)

²⁹⁰ See especially Appendix 5, Section A5.3.3 on long term shifts in demand and in consumer habits away from outlets typically populating the traditional trade to supermarkets and one stop shops and the increased variability of demand within any given retail outlet due mainly to increased competition from the ice creams of rivals and imperfect confectionery and impulse substitutes.

Figure 82 – Motivating Operations (Wall’s) Resulting from Signalled Aversive Consequences to Business Resulting from Significant Changes in Demand Structure



Source: Evidence Presented in Appendix 5, Section A5.3 (especially Section A5.3.3)

D. Mid-Maturity: the 1970s

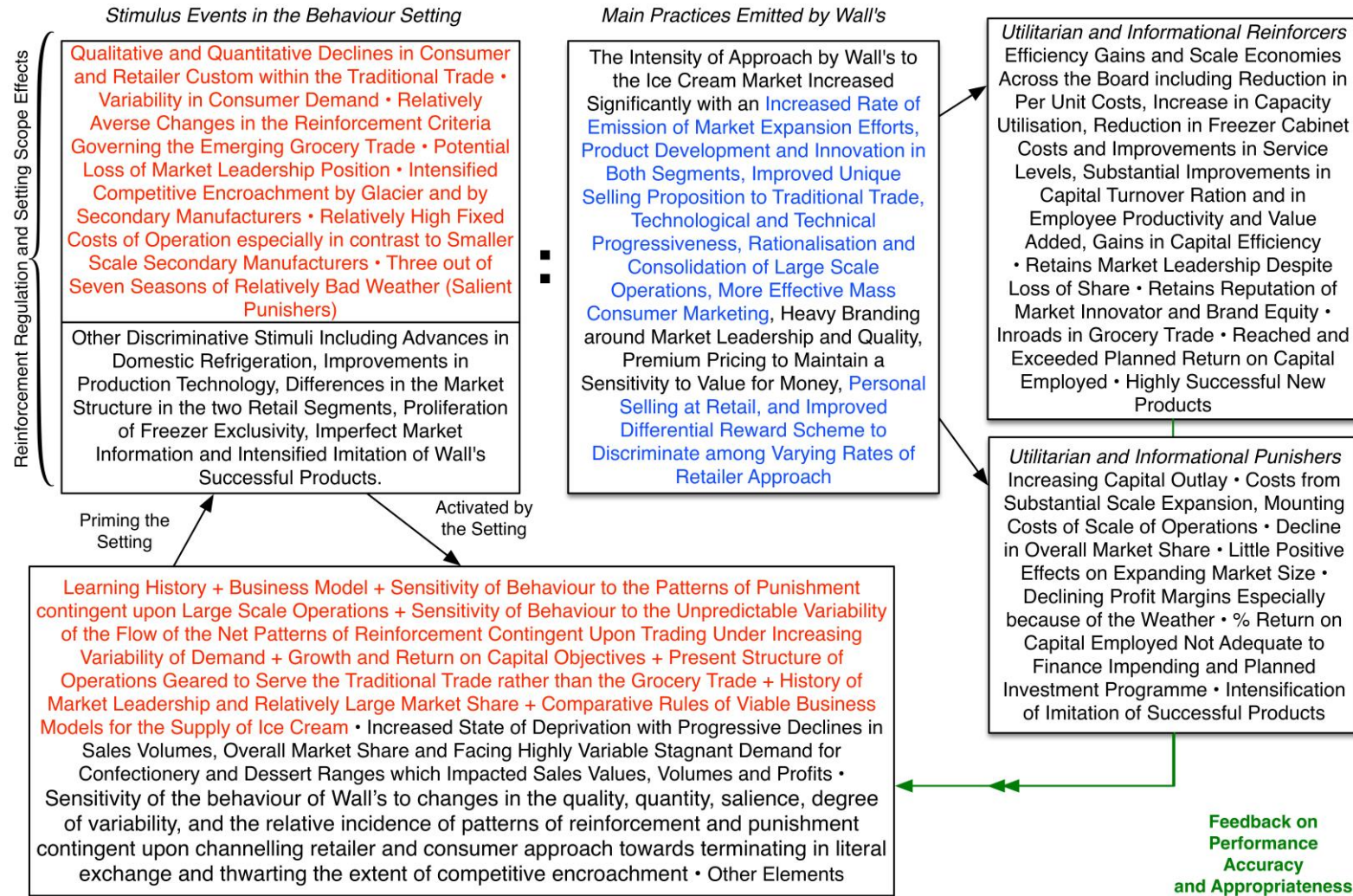
The evidence with respect to the various elements comprising the BPM for the 1970s is significantly more comprehensive. Figure 83 presents a summary of the BPM as applicable to Wall's for the period²⁹¹. Figure 84 and Figure 85 present a more detailed account of the stimuli comprising the behaviour setting and emitted practices.

The reconstruction of learning history so far showed that the class of practices typically emitted by Wall's in the traditional trade (impulse) segment was maintained by a relatively high pattern of utilitarian and informational reinforcement within an environment best characterized as a virtual duopoly between itself and Glacier.

By the 1970s, Wall's operation was organised on a very large scale to satisfy the environmental conditions particular to serving mass consumer demand of impulse ice cream accessible through a highly profitable nationwide network of relatively small sized outlets. Shifts in consumer behaviour patterns away from this network because of fundamental changes in purchasing habits forced a decline in the traditional trade and, hence, Wall's began experiencing a decline in business. Rules governing competitive behaviour developed over the previous decades to emphasise wider and more comprehensive product ranges, greater product quality, innovation, and brand reputation. Retailers populating the traditional trade continued requiring freezer exclusivity and, to a lesser extent, outlet tie-in. Towards the end of the 1960s, new rules emerged that specified the conditions governing relations with the grocery trade. Already at this stage, these rules appeared to include an emphasis on pricing, a lesser reliance on the provision of freezer exclusivity because these retailers already owned the necessary equipment, and an averseness to outlet exclusivity because retailers wanted to offer a diverse range of brands to their customers.

²⁹¹ In this figure value-altering effects are highlighted in red whereas behaviour-altering effects are represented in blue.

Figure 83 – The Elements of the BPM for the Marketing Practices of Wall's (1970s)



Source: Evidence Presented in Appendix 5, Section A5.4

Figure 84 – The Main Stimulus Events Occasioning the Marketing Practices of Wall's (1970s)

<p>Salient Punishers: Qualitative and Quantitative Declines in Consumer and Retailer Custom within the Traditional Trade • Variability in Consumer Demand • Relatively Averse Changes in the Reinforcement Criteria Governing the Emerging Grocery Trade • Potential Loss of Market Leadership Position • Intensified Competitive Encroachment by Glacier and by Secondary Manufacturers • Relatively High Fixed Costs of Operation especially in contrast to Smaller Scale Secondary Manufacturers • Three out of Seven Seasons of Relatively Bad Weather</p>
<p>Competitive Encroachment by Glacier in Traditional Trade: Emergence of Large Retail Grocery Stores and Chains Exert Pressure on Existing Traditional Trade • Relatively Rapid Imitation of Successful Products • Success of its Distribution Channel through Alpine • Acquisition of Midland Counties brands and Distribution Network • Maintains a Comprehensive Product Range and Great Variety of Products and Brands including Premium Product for Catering (Bertorelli's) • Encroachment is Nationwide • Active Canvassing of Traditional Trade Retailers by Glacier • Relatively Rapid Imitation of Successful Products and Tailgating by Glacier • Mass Marketing Efforts • Better Bonus Schemes to Retailers • Holds about 45% Market Share</p>
<p>Competitive Encroachment by Secondary Manufacturers in Grocery Trade due to: Increasing Number of Retail Chains Operating their Own Refrigerated Storage and Distribution Value Chain: Presents Manufacturers with Alternative Value Chain to Retail and Removes Cost and Burden of Owning Such a Value Chain • Increased Demand for Own Label Ice Cream by Major Grocery Chains • Accessibility to Production Technology • Viable Business Models Available and Possible Through Focus on Narrow Range of Ice Cream including Bulk with Relatively Low Production Costs • Relatively Rapid Imitation of Successful Products • Encroachment is Nationwide • Significant Gains in Market Share between 1971 and 1977 from 17% of Volume to 30.2%</p>
<p>Grocery Trade as a Distinct Retail Segment: Outlet Reinforcement Criteria Drastically Different from Traditional Trade • Retailer Approach Behaviour Highly Sensitive to Benefits from Low Supply Prices and Stocking Brands of Several Manufacturers • Retailer Approach Relatively Averse to Freezer and Outlet Exclusivity • Retailers Typically Stock Take Home Products • Increasing Quantity and Quality of Retail Outlets • Profitability from Serving Grocery Trade Relatively Low • Large Scale Operation May be Inadequate for Serving Grocery Trade</p>
<p>Traditional Trade as a Distinct Retail Segment: Outlet Reinforcement Criteria Drastically Different from Grocery Trade • Retailer Approach Behaviour Highly Sensitive to Wider and More Comprehensive Product Ranges, Emphasis on Product Quality, Variety and Innovation, Strong Brand Reputation, the Provision of Freezers in Exchange for Exclusivity • Relatively Aversive to Stocking Brands of Multiple Suppliers • Decline in Quantity of Retail Outlets • Profitability from Serving Traditional Trade Relatively High Large Scale Operation Adequate for Serving the Traditional Trade</p>
<p>Market Structure: Virtual Duopoly in the Traditional Trade • Highly Competitive Market Structure in Grocery Trade</p>
<p>Freezer and Outlet Exclusivity Practiced by 27 Manufacturers with Glacier having over 50,000 cabinets</p>
<p>Shifting Trends in Consumer Patterns Favouring Grocery Trade at Expense of Traditional Trade • Emergence of Supermarkets and Home Freezer Centres • Clearer Definition of Reinforcement Criteria with respect to Impulse <i>versus</i> Take Home Purchases • Increased Demand Variability (Variety Seeking Behaviour) • Greater Demand for Variety and Novelty in Impulse and Confectionery • Demand for Imperfect Substitutes at Retail Impulse and Confectionery • Sustained Increase in Demand for Take Home Products</p>
<p>Distinct Product Categories: Confectionery and Scoop (Impulse) and Bulk and Dessert (Take Home and Catering) • Degree of Overlap • Products of Secondary Manufacturers of a Lesser Quality and Priced at Relatively Low but Increasing Levels</p>
<p>Proliferation and Advances in Domestic Refrigeration Technology Fuels Demand for Take Home and for Bulk Products</p>
<p>Inflationary Pressures on Raw Materials and Labour Costs</p>
<p>Seasonality and Weather • Cold Value Chain • Short Product Shelf Life • Three Seasons of Relatively Bad Weather in Seven Years</p>
<p>Advances in the Frozen Food Industry Occasion the Appearance of a Fledgeling but Growing Third Party Independent Distribution Channel</p>
<p>Proliferation and Advances in Production Technology Reduces Barriers Making Relatively Efficient Small Scale Facilities Pervasive and Available Inexpensively to Any • Bulk Ice Cream Not Technically Difficult or Capital Intensive • Large Scale Production Expensive and Technically Complex but Resulted in Higher Quality Product</p>
<p>Imperfect Market Information</p>

Source: Evidence Presented in Appendix 5, Section A5.4

Figure 85 – The Main Repertoires Emitted by Wall's in the Presence of Environmental Events (1970s)



Source: Evidence Presented in Appendix 5, Section A5.4

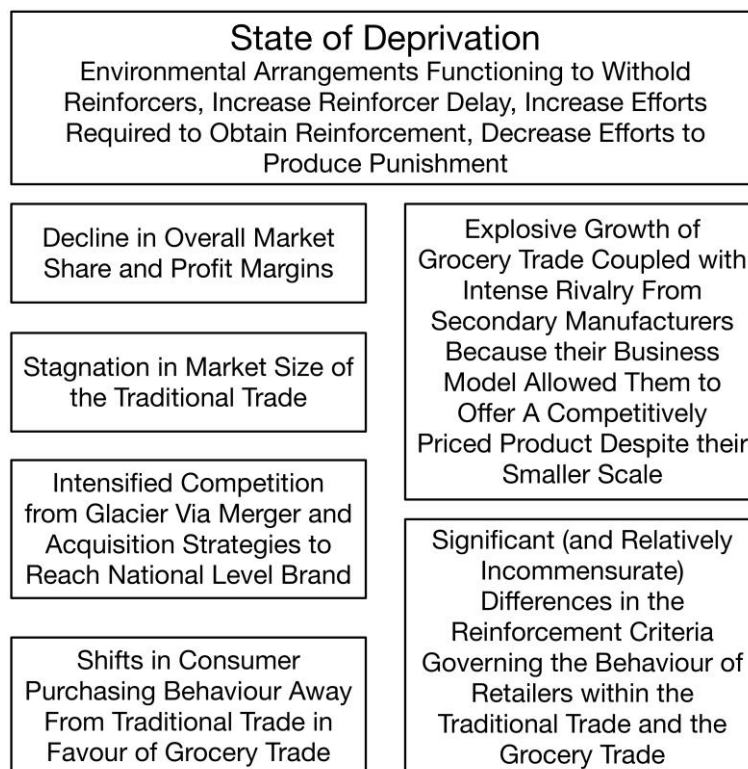
The organisation of Wall's required maintaining sufficient sales volumes despite the negative downturns in the traditional trade and increasing rival encroachment in the grocery trade (a market it had originally pioneered to reduce sensitivity to the significantly aversive consequences of all the sources variability in its sales, costs, and profits within the traditional trade).

The following examines the personal variables of Wall's in greater detail.

State of Deprivation

The evidence shows that Wall's entered the 1970s in a relative state of deprivation and remained so (Figure 86).

Figure 86 – State of Deprivation of Wall's at the Beginning and During the 1970s



Source: Evidence Presented in Appendix 5, Section A5.4.2D

Market Leadership

The previous sections hypothesised market leadership as a possible positive informational reinforcer: Wall's practices were informationally reinforced by feedback on the appropriateness and accuracy of performance vis-à-vis the prevailing physical contingencies, the behaviour of others within

the marketplace, and the rules predicated by the business model and by other personal variables. The evidence of learning during the 1970s suggests that market leadership was indeed a reinforcer. To the extent that Wall's history of reinforced market leadership in conjunction with its business model and increased state of deprivation established and made more salient the effectiveness of the punishing effects of the various environmental conditions including intensified competition and increased encroachment, continually changing business conditions, and potential loss of market position built over several decades (the *value-altering effect*). The evidence shows that Wall's increased the patterns of behaviour typically associated with striving for and retaining market leadership (and demand decline and variability) including (a) technical and technological progressiveness via efficiency gains and capital expenditure (including investments in new and replacement equipment, computerisation), and, (b) product development (the *behaviour-altering effect*)²⁹².

Sensitivity to the Flow of Relative Reinforcement Patterns Arising From Variability and Variation in Demand

During the 1960s, the behaviour of Wall's acquired and retained an averseness to the unpredictable variability in the flow of the quality and quantity of patterns of reinforcement arising from consumer purchase behaviour at retail outlets (analogous to an increasingly *variable ratio schedule*)²⁹³.

By mid-maturity, variability arose from: (1) seasonality and weather. (2) The development of relatively distinct consumer reinforcement criteria governing the purchase of impulse (typically purchased in traditional trade outlets) and take-home (grocery trade) to the extent that (a) take home products were less sensitive to seasonality and the weather, and, (b) impulse items were purchased with little advanced planning and brand comparison at relatively low prices and required frequent and on-going advertising and promotional campaigns relatively²⁹⁴. (3) The emergence of the grocery trade and the entry of secondary manufacturers intensified encroachment and the potential for

²⁹² See Appendix 5, Section A5.4.2C.

²⁹³ See Appendix 5, Section A5.3.3 especially Section A5.3.3A.

²⁹⁴ Typically impulse purchasing behaviour is shaped and maintained as if on a fixed interval schedule (Foxall 2010b). See also Appendix 5, Section A5.3.3.

variability in demand because these rivals could compete economically through specialising on a narrow and focused product range comprising functionally equivalent substitutes at very aggressive prices²⁹⁵. (4) The increased availability through an extensive nationwide network brought ice cream in direct competition with non-ice cream substitutes. (5) Differences in the reinforcement criteria particular to consumers of different age groups²⁹⁶.

Retained Sensitivities as Expressed by the Learning History of Wall's

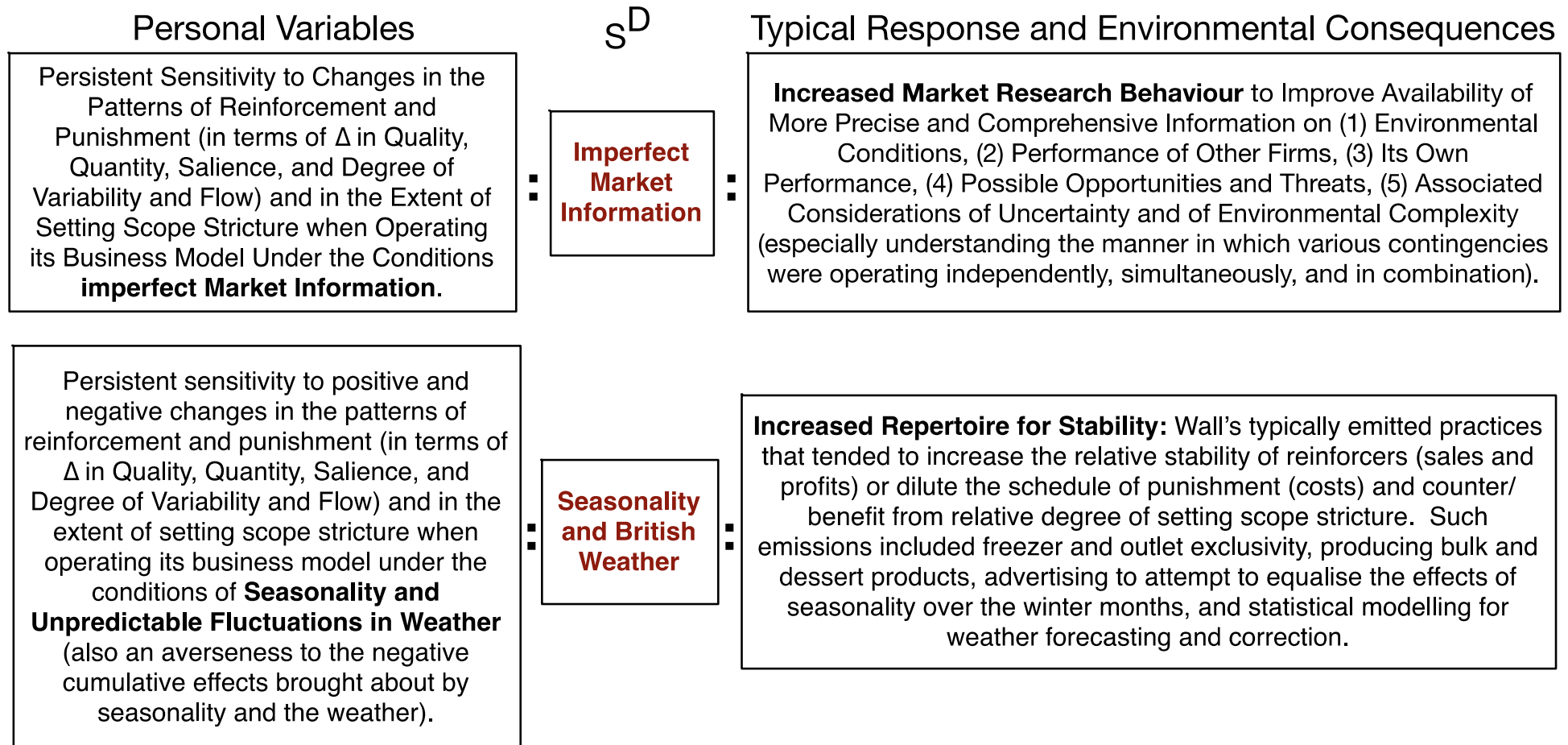
Over its previous 40-year history operating in the market, the practices of Wall's appear to have **acquired sensitivity to the patterns of reinforcement and punishment signalled by consequential stimuli in the behaviour setting and by the extent of relative setting scope stricture therein**. The organisation tended to emit behaviour that functioned to *approach* patterns of reinforcement and to *escape-avoid* either declines in the patterns or reinforcement or the appearance/increases in patterns of punishment. Figure 87 to Figure 90 present the related evidence²⁹⁷.

²⁹⁵ The intermediation efforts of Wall's and Glacier to construct a nationwide retail network were secured by a significantly large number of freezer and outlet exclusivity contracts. Gradually, these efforts constrained the marketer behaviour setting scope faced by all manufacturers to the extent that secondary manufacturers only held a miniscule share of the traditional trade and found it relatively difficult to penetrate the segment. The acquisition of important manufacturers by Glacier during the 1960s added scope qualification pressures constraining the possibility of entry into the segment. During the same period a decline in the number of retailers (reinforcers) further constrained setting scope. Therefore, secondary manufacturers did not function as a relatively prominent and effective punisher within the behaviour setting faced by Wall's until the emergence of the grocery trade. In this latter trade, the behaviour setting was relatively more open and secondary manufacturers produced an intense rivalry for the business. See also Appendix 5, Section A5.2.6 and Section A5.4.3.

²⁹⁶ See Appendix 5, Section A5.3.3 and A5.4.3 to A5.4.4.

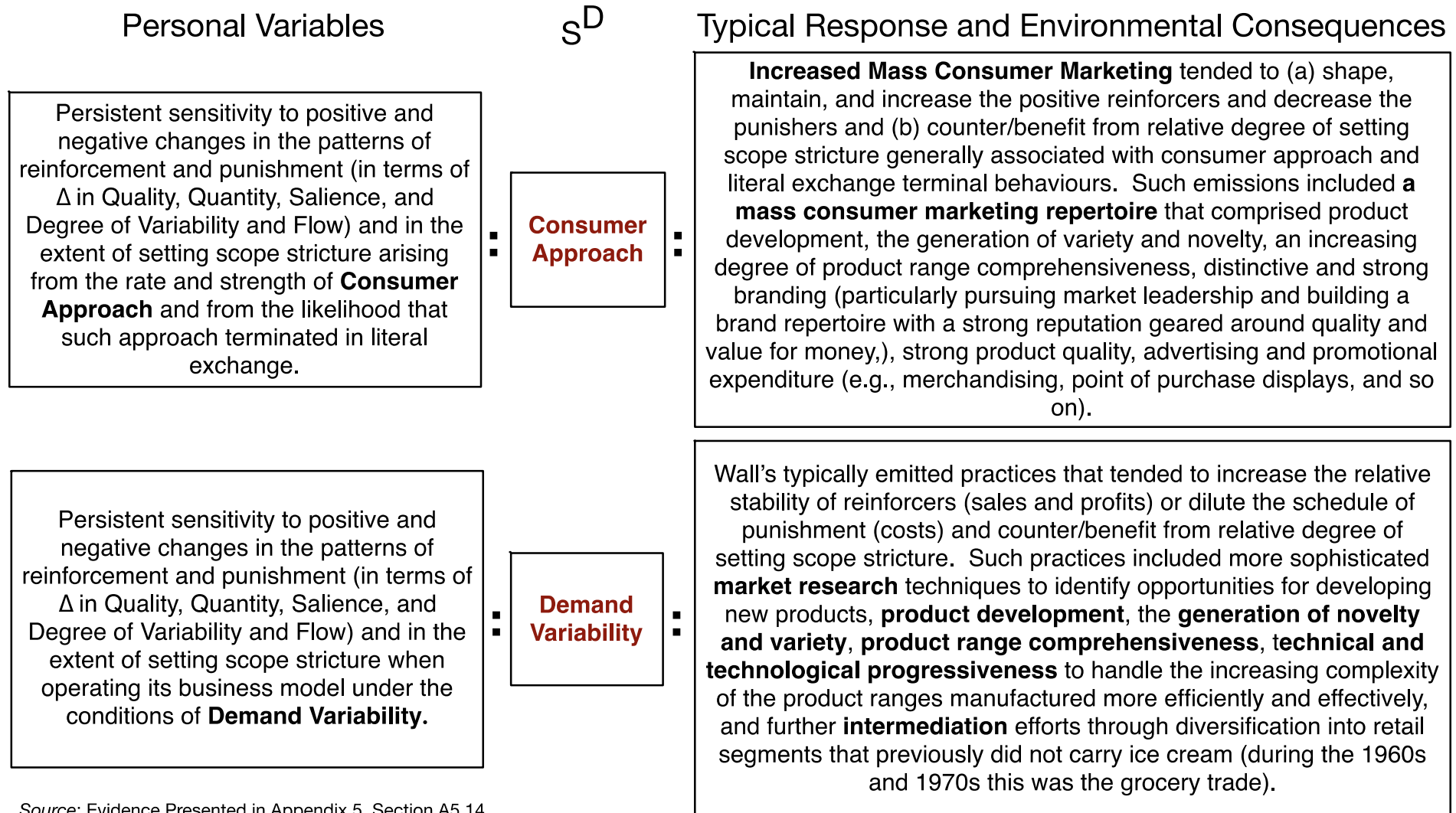
²⁹⁷ The figures are based on Section A5.14 in Appendix 5.

Figure 87 – Persisting Sensitivity of Wall’s Practices to Particular Environmental Stimuli (Imperfect Information, Seasonality, and Weather)



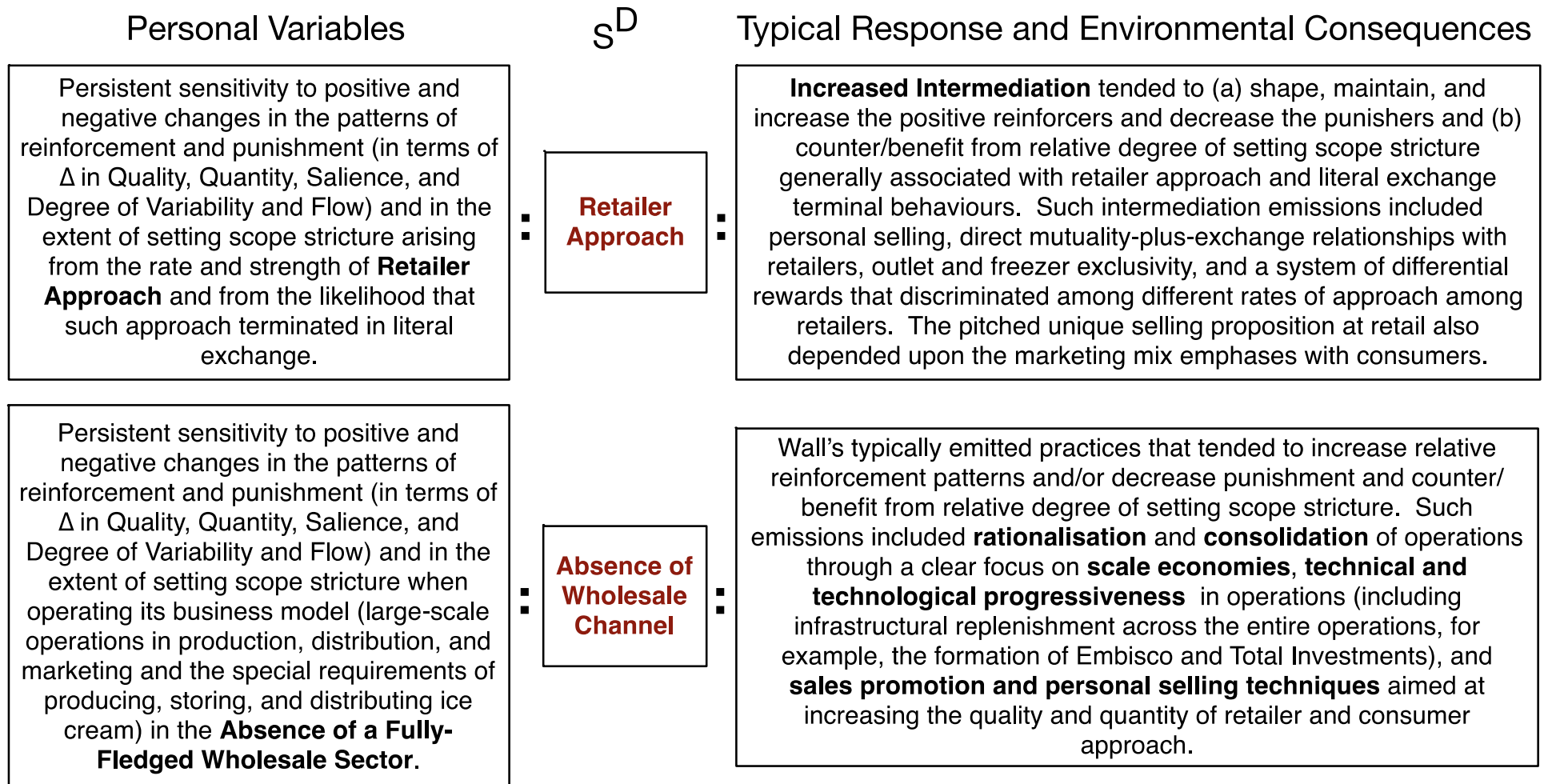
Source: Evidence Presented in Appendix 5, Section A5.14

Figure 88 – Persisting Sensitivity of Wall’s Practices to Particular Environmental Stimuli (Consumer Approach and Demand Variability)



Source: Evidence Presented in Appendix 5, Section A5.14

Figure 89 – Persisting Sensitivity of Wall’s Practices to Particular Environmental Stimuli (Retailer Approach and Absence of Distribution Tier)



Source: Evidence Presented in Appendix 5, Section A5.14

Figure 90 – Persisting Sensitivity of Wall’s Practices to Particular Environmental Stimuli (Competition)

Personal Variables

S^D

Typical Response and Environmental Consequences

Persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of Δ in Quality, Quantity, Saliency, and Degree of Variability and Flow) and in the extent of setting scope stricture when operating its business model under conditions of **competitive encroachment**.

Competition

Wall’s typically emitted practices that tended to counter or benefit from setting scope stricture resulting from competitive encroachment or increase/decrease relative patterns of reinforcement/punishment. Regularly emitted practices included **intermediation, freezer and outlet exclusivity, personal selling**, running a **differential reward scheme, mass consumer marketing, distinctive branding**, pursuing **market leadership** and building a **brand repertoire with a strong reputation** geared around quality and value for money, increasing **product range comprehensiveness, product development**, generating **novelty and variety**, effective **advertising and promotions, rationalisation and consolidation** of large-scale operations to improve efficiency and effectiveness, and **technological and technical progressiveness**.

Source: Evidence Presented in Appendix 5, Section A5.14

Among the most important changes during the 1970s was the increasing rate of imitation of Wall's *successful* products by Glacier and by the secondary manufacturers. Imitation resulted in additional negative changes in the relative flow or incidence of patterns of reinforcement and punishment and in setting scope qualification effects associated with competitive encroachment. Imitation signalled patterns of punishment resulting from (1) the negative consequences on the level of retailer and consumer approach of such encroachment (decreases in market share, threatened loss of market leadership, severe delays in recovering R&D investment); and, (2) from the constraining effects on the behaviour setting scope (reduced access to retailers). Wall's practices acquired sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture when operating its business model under the conditions of increasing imitation by competition. Wall's emitted behaviour that tended to counter these effects including (a) increasing product development, advertising, personal selling, emphasis on brand reputation and product quality, and all other learnt efforts that in the past functioned to increase retailer and consumer approach, and, (b) increasing the rate rationalisation of its large scale operations via technological and technical progressiveness to benefit from improved efficiencies which could lead to more competitive pricing vis-à-vis the lower quality rival products²⁹⁸.

By virtue of its learning history, the behaviour of Wall's may be also expressed in terms of its sensitivity to changes in the quality, quantity, salience, degree of variability, and the relative incidence of patterns of reinforcement and punishment contingent upon channelling retailer and consumer approach towards terminating in literal exchange in its own brands and thwarting the extent of competitive encroachment.

It should also be noted that these effects were cumulative.

²⁹⁸ Section 5.3.3 of this chapter discusses competitive encroachment in greater detail as an example of environmental selection operating on behaviour by regulating patterns of reinforcement and by qualifying setting scope stricture. The evidence on competitive imitation is presented in Sections A5.4.2 and A5.4.3 of Appendix 5.

There is some evidence to suggest that during the 1970s the behaviour of Wall's was less sensitive to delays in reinforcement (i.e., a lesser sensitivity to variable interval schedules) in contrast to secondary manufacturers²⁹⁹. In addition, it also appears that the behaviour of Wall's was shaped and maintained by patterns of relatively high utilitarian and informational reinforcement than that of its rivals³⁰⁰.

These factors functioned independently, simultaneously, and in combination to regulate the behaviour of Wall's during the 1970s carrying forward from the first generation-situation to the second generation-situation (inheritance and accumulation of rules).

Managerial Deliberation and Planning and the Unilever↔Wall's Bilateral Contingency

During the 1970s, the evidence with respect to managerial deliberation and the Unilever↔Wall's bilateral contingency gains greater salience because of a more explicit formulation of possible causal relations³⁰¹. Most importantly, and as a reflection of *precurrent behaviour*, Wall's and Unilever management set plans (e.g., the Five Year Plan) and rules (Company Operating Guidelines) as discriminative verbal *informational* stimuli guiding subsequent problem solving actions of the firm and developed measures against which to provide feedback (to Wall's and Unilever) and to establish the appropriateness and the accuracy of performance. The continual presence of managerial plans, measures defined therein (e.g., accounting ratios) and established performance targets (e.g., 8% as the minimum acceptable after tax return on capital employed) also functioned to make market events more or less salient within the behaviour setting faced. The feedback on Wall's performance by Unilever was regulated by patterns of informational reinforcement and punishment as if on a ratio or interval schedule of reinforcement³⁰². The rules imposed by Unilever also functioned to qualify the behaviour setting faced by Wall's.

²⁹⁹ See Appendix 5, Section A5.4.2C.

³⁰⁰ See Section 5.4 wherein Wall's behaviour is hypothesized to fall in the Accomplishment Contingency Category of the BPM.

³⁰¹ See the evidence in Appendix 5, Section A5.4.2B.

³⁰² See Appendix 5, Section A5.4.2B and A5.4.2C.

Wall's continued benefitting from the resources owned by Unilever including the latter's logistical arm which reduced Wall's overall cost base and from the positive consequences of rationalisation occurring across those Unilever subsidiaries supplying Wall's³⁰³.

Business Model

By the end of the 1960s, the business model of Wall's had developed to function as a rule that governed Wall's behaviour:

- (1) In *delivering* value to its **nationwide network of retail customers** through: (a) quantitatively and qualitatively rich patterns of utilitarian and informational reinforcement via a marketing mix that centred around the efficient and timely delivery of a prominent and commercially successful portfolio of distinctive suitably-priced quality brands that contributed to a profitable turnover when contrasted to perfect and imperfect substitutes; (b) a reduction in the quality and quantity of the patterns of punishment (e.g., the provision of a freezer, reducing reinforcement delay by improving delivery times and prioritising deliveries during peak times) in exchange for exclusive custom; and, (c) implementing a consumer orientated marketing mix that encouraged the mass purchase and consumption of ice cream.
- (2) In *delivering* value to a **significantly large consumer base** through its value-for-money pricing, comprehensive and continually innovative quality product offering, reputation for market leadership, national level branding, advertising and promotion, nationwide logistical strategies and expressed in terms of quantitatively and qualitatively rich patterns of utilitarian and informational reinforcement that matched their reinforcement criteria.
- (3) In *capturing* value by behaviour that functioned to (a) improve efficiency within its relatively centralised and integrated large-scale production and distribution operations (e.g., technological and technical progressiveness, rationalisation, and research and development), and, (b) enhance its unique selling proposition to retailers and consumers by

³⁰³ See Appendix 5, Sections A5.2.6A, A5.3.1, A5.3.4, A5.4.2B, A5.4.3A, A5.10.1, and A5.11.

matching their respective reinforcement criteria and in a manner that was distinct from rival offerings.

Value on the part of Wall's was expressed in terms of the patterns of utilitarian and informational reinforcement and punishment arising from sales, profits, market share, and return on capital employed. Over a period of forty years, Wall's incessantly focused on achieving and retaining market leadership via this business model. During the 1970s, the business model remained unchanged (and, therefore, *locked-in*) and retained its persisting function of priming elements within the behaviour setting and regulating the behaviour Wall's therein³⁰⁴.

5.2.2 Discussion and Conclusions

Section 5.2.1 contrasted the extent of continuity and change in the environmental conditions faced by Wall's and in its responses across the two generation-situations. It traced a history of the main personal variables that characterise Wall's. The descriptions demonstrated how antecedent events gained stimulus function via the personal variables of Wall's, and, associated stimulus events and occasioned behaviour in a clear probabilistic causal relation expressed in qualitative terms. This section draws conclusions suggesting refinements to both the variables of the BPM and the derived research propositions.

A. The Personal Variables Describing the Individual Within the BPM

The SMC framework proposes that the individual firm may be represented through four personal variables, namely, the business model, states of deprivation and satiation, managerial deliberation and planning, and its

³⁰⁴ See, for example, Appendix 5, Section A5.4.2C. In addition to its business model, Wall's identified a set of rules that emerged with respect to running a viable ice cream supply operation. The rules specified a number of dimensions that effected business viability including (1) the comprehensiveness of the product mix and the breadth of product ranges; (2) associated production volumes; (3) the types of outlets within the target retailer segment, the average order size by such outlets, and the selection of product ranges and packaging size within any given order; (4) the degree of geographical dispersion among outlets served and the distance involved in transporting ice cream to storage depots and retail outlets; (5) the extent to which delivery trucks are loaded to capacity; (6) the relation between the size of a given drop and the distance to be travelled, (7) retailer network set-up costs, (8) access to an appropriate distribution network; and, (9) flexibility in coping with the variable and unpredictable nature of demand.

learning history. Given the evidence in Appendix 5 and the analysis and interpretation in Section 5.2.1, the characterisation is supported. However, empirically grounded qualifications and refinements are required.

The Business Model

Learning history is *the* central personal variable used to characterise individual consumers within the BPM (Foxall 1994, 2010b). However, the SMC distinguishes several personal variables that may be used to characterise individual firms to facilitate interpretation and to reduce the apparent heavier reliance on inference had all evidence been categorised simply as learning history. Arguably, the business model is part of the learning history of any organisation. However, given the specialised function of the variable proposed via the operational definition based on Teece (2012) and the presented empirical evidence, the distinction should be maintained to understand the nature of: (1) the instruction set (functioning as a contingency with regulatory dimensions) governing the behaviour of the firm and specifying the logical structure followed when creating and delivering value to customers, and, when capturing revenues and profits for its owners. The evidence strongly indicates that the explicit and implicit rules comprising the business model were activated by the environmental events in the behaviour setting and functioned to prime these events according to their discriminative or motivating function³⁰⁵. (2) The instructional dimensions of this contingency that were relatively enduring (the genotype), the actual (as opposed to potential) and empirical (as opposed to logical) consequences that emerge from the contingency when employed in interaction with the environment (the phenotype), and the extent of change to the instructions over time³⁰⁶.

Whereas some aspects of the business model did change, many dimensions remained relatively stable³⁰⁷. Originally, the business model

³⁰⁵ See also Figure 82 and Section 5.2.2C of this Chapter.

³⁰⁶ Van Parijs (1981) emphasises the distinctions between “actual” and “potential” and “empirical” and “logical” as essential dimensions of an evolutionary explanation.

³⁰⁷ Appendix 5 traces the process of change in the basic business model as it was originally adopted by Wall’s in 1922 and the extent to which it changed in direct exposure to the contingencies until its final recorded form in 1977. Section A5.4.2C in Appendix 5 presents the evidence on the business model of Wall’s during the 1970s. Section A5.3 provides similar evidence for events prior to the second generation-situation.

instruction set evolved around the conditions regulating the traditional trade segment and the purchase and consumption of impulse confectionery items. Right until the early 1960s, environmental conditions positively (e.g., explosive growth in consumer demand) and negatively (e.g., the increase in volumes and consequent scale economies) reinforced these rules. As the sensitivity of consumer behaviour to the reinforcing consequences of purchasing and consuming greater variety and novelty increased during the late 1950s and 1960s, Wall's increased its product development emissions and other repertoires (e.g. technological progressiveness) to further sustain product development). As a result the business model gradually changed to include the provision of comprehensive and broad product ranges as an integral part of the rule set.

The emergence of the grocery trade and the intense rivalry by secondary manufacturers in the 1970s made salient the difficulties in applying rules adapted primarily to supplying the traditional trade³⁰⁸. The reinforcement criteria characterising the grocery trade³⁰⁹ were significantly different and the practices of Wall's experienced a period of differential reinforcement.

When contrasting the two generation-situations, many instructions specified by the business model were positively and negatively reinforced and, hence, selectively retained, inherited, and replicated in direct exposure to prevailing contingencies including imperfect market information, seasonality, and the weather. This was probably because the conditions for supplying the traditional trade with confectionery and impulse ice cream remained relatively unchanged even though consumer behaviour became increasingly sophisticated. Other instructions, however, underwent a process of selective elimination (punishment): By the early 1960s, the cost of dealing directly with a significant mass of consumers in conjunction with other dimensions (especially the weather) punished Wall's mutuality-plus-exchange relations with

³⁰⁸ See especially Appendix 5, Section A5.4.2C and Section A5.4.5A.

³⁰⁹ See Appendix 5, Section A5.4.5A. For example, freezer and outlet exclusivity was a reinforced practice in the traditional trade and punished in the grocery segment. Vella and Foxall's (2011) case study clearly indicates that both practices were selectively retained until 2000.

consumers. Thus, a portion of the rules embodied in the business model since the 1920s was selectively eliminated³¹⁰.

The evidence indicates that there is no single business model as a path to viability within the market. Wall's provided an extensive description of alternative models successfully adopted by the smaller-scale secondary manufacturers³¹¹. The growth of the market share in the volumes of ice cream by secondary manufacturers during the 1970s indicates the possible survival success of this sector and a growing degree of economic fitness of the products supplied by secondary manufacturers³¹².

The use of the business model was originally conceptualised as an analogy between a set of quasi-stable properties as implicit or explicit statements of the basic and relatively enduring rules for generating sales and profit (capturing value) inherent to all firms on the one hand and the contingencies of survival governing the behaviour of individuals (e.g., genetic endowment) in Skinner's (1981) evolutionary analogy, on the other (cf. Vella and Foxall 2011)³¹³. The articulation of the business model appears useful in interpreting the evidence and providing a stronger analysis of behaviour of Wall's across the identified theoretical dimensions. Consequently, the continued use of the sensitizing concept is emphasised. Figure 91 suggests an operant definition of the business model for future research given the empirical evidence.

³¹⁰ The process of selective elimination in this respect did not appear suddenly: when WWII ended, Wall's found it impracticable to run the tricycle operation on a very large scale and replaced these with refrigerated vans. Thus, it seems that the costs of holding direct mutuality-plus-exchange relations was increasingly punishing when considered with a combination of other factors. Eventually, in 1963, direct mutuality-plus-exchange relations with consumers were replaced entirely (see Appendix 5, Section A5.3.1 on the formation of Wall's-Whippy).

³¹¹ See footnote 304 on page 280 and Appendix 5, Section A5.4.2C.

³¹² The more conservative of estimates calculated by the Commission show that in 1972 secondary manufacturers accounted 17.3% of total sales volumes. In 1977, the share increased to 30.2% (See Appendix 5 especially Appendix A5.7.1). For a discussion on economic fitness see Section 5.5 of this Chapter.

³¹³ The representation differs significantly to the manner in which Vella and Foxall (2011) draw an their analogy of genetic endowment in application to the firm which, in retrospect, was ambiguous.

Figure 91 – An Operant Definition of the Business Model

Business Model
A set of contingent relations among discriminative stimuli or motivating operations (e.g., the conditions regulating the rate, strength, and quality of consumer and retailer approach; the conditions for generating profits), responses (e.g., mass or niche marketing; large or small scale of operations; type of production plant; coverage of retail network), and reinforcing and punishing consequences (significantly high volumes of transactions, profitable scale of operations, market share) • The business model functions as an antecedent informational regulatory contingency or stimulus event in the managerial behaviour setting and governs the behaviour of the firm.

The State of Deprivation

The concept was proposed in Chapter 4 as useful in determining reinforcer and punisher effectiveness and salience and in understanding the nature of the sensitivity of firm practices to stimulation. The evidence supports this claim³¹⁴.

Environmental arrangements were also hypothesised to function as if withholding access of patterns of utilitarian and informational reinforcement via reduced availability of reinforcers or increased reinforcement intervals. The evidence suggests an important clarification: withholding access to utilitarian and informational reinforcement arises from: (a) qualitative and quantitative reduction or increase in reinforcers or punishers; (b) increasing the rate of emission of certain practices before reinforcement is generated or reducing the rate of emission before punishment is generated, and, (c) increasing or decreasing reinforcement or punishment delay.

The related evidence points to imperfect knowledge and non-prescience of emitted variations manifesting themselves not only in an inability to discern the prevailing contingencies but also in the uncertainty surrounding the functional relations between behaviour and the consequences such behaviour produces under actual prevailing contingencies. Wall's employed weather forecasting models to generate production and distribution plans, however, its

³¹⁴ This point is analysed and discussed further in Section 5.3.2 and 5.3.3 of this Chapter.

behaviour was governed by the annual, weekly, and daily fluctuations of *actual* weather conditions³¹⁵. Thus, states of deprivation were also a function of the extent of variability of the relative flows of patterns reinforcement and punishment. Over time, the behaviour of Wall's developed certain sensitivity to the unpredictable variable nature of these functional relations³¹⁶. Within management literature, these issues are related to *causal ambiguity*, a concept used to characterise "the basic ambiguity concerning the nature of the causal connections between actions and results, the factors responsible for performance differentials will resist precise identification" (Ambrosini 2001, p. 8; Ambrosini and Bowman 2010).

The SMC framework hypothesised that states of deprivation function as regulatory stimuli to govern firm practices. Instead, the evidence suggests that deprivation does not. Rather, experiences, expressed in terms of acquired sensitivities of behaviour to unpredictable and variable reinforcement patterns (and forming part of learning history), gain regulatory function.

The SMC also suggests that states of deprivation may be inferred from the extent to which the actual reinforcement patterns generated satisfy the conditions specified within the business model rules. The evidence on Wall's suggests a more complex relationship: deprivation may be inferred from the extent to which the actual reinforcement patterns generated satisfied or matched the conditions specified *in organisational objectives given its business model and learning history*. The evidence supports the notion that the state of deprivation is activated by environmental contingencies and does appear to contribute to value-altering effects in establishing operations.

Figure 92 redefines the sensitizing concept of states of deprivation for future research.

³¹⁵ See also Appendix 5, Section A5.2.2 on the statistical models employed by Wall's and Glacier to understand the impact of weather fluctuations on all facets of the operation.

³¹⁶ The unpredictable and variable nature of environmental conditions and behavioural emissions also reinforces the idea of "loose coupling" (Van Parijs 1981) the notion that refers to behavioural variations and selection criteria varying independently of each other and being only weakly connected (Campbell 1969; Aldrich 1979). See also Section 5.4.1C of this chapter.

Figure 92 – A Refined Operational Definition of States of Deprivation

States of Deprivation

An operation where prevailing environmental contingencies function to withhold access to the utilitarian and informational reinforcers that satisfy the rules specified in the business model, the learning history of the firm and other stimulus events related to managerial deliberation and planning. Withholding access to reinforcement is identified by determining (a) a qualitative and quantitative reduction or increase in reinforcers or punishers, (b) an increase the rate of emission of certain practices to be performed before reinforcement is generated or a reduction of the rate of emission before punishment is generated, and, (c) an increase or decrease in reinforcement or punishment delay. Given motivating operations, deprivation may have a value altering effect in establishing operations

Managerial Deliberation and Planning

The managerial dimension was characterised by the SMC as **managerial deliberation and planning**. The analogy was drawn between the deliberative behaviour of consumers and that of managers suggesting that environmental stimuli acquire meaning in the presence of the process of deliberation. Following the principles of problem solving suggested by (Skinner 1966b, 1969, 1984d) and the various elaborations on consumer behaviour by Foxall (1997b, 1998a, 1999c, 2005, 2007a), deliberative behaviour was characterised as the (a) the construction of discriminative stimuli (explicit and tacit self-rules, pre-current behaviour, e.g., planning and objectives), (b) the extraction of rules from past contingencies, from the observations of the behaviour of others and the consequences of that behaviour and from other prevailing physical contingencies, and, (c) following the rules set by others or found in generic business rules. The evidence upholds this characterisation and supports the continued use of the concept³¹⁷.

³¹⁷ The managerial dimension was also introduced to distinguish between two inter-related selection dynamics: one occurring within the firm and another within competitive markets (Knudsen 2002) even though the intended emphasis was on external selection. The case history lends some support to the continued distinction and also supports the analogy drawn in Chapter 4 between the elements within the managerial behaviour setting as characterising the internal selective system and the elements within the marketer behaviour setting as the external selective system.

Learning History

As the reconstruction of Wall's history of reinforcement and punishment demonstrates, learning history may be summarised as a set of contingencies over time specifying (a) acquired sensitivities of behaviour to *the patterns of reinforcement and punishment* signalled by the *consequential* stimuli in the behaviour setting and by the extent of relative setting scope stricture therein, and, (b) the approach and escape-avoidance response classes typically emitted by Wall's given sufficiently similar settings (Figure 87 to Figure 90). Thus, the learning history variable describes an accumulation of regularities and the behaviour to be expected given sufficiently similar conditions³¹⁸.

In similar fashion to the business model and for the same reasons, learning history represents what is relatively enduring (the genotype) and the extent of change over time as the rules representing the genotype interact with the environment producing a phenotype. Both **heritability** of certain sensitivities of behaviour to rewarding and punishing consequences and **the extent of replication** from one PLC stage to another and across generations (i.e., potential of continuity of behaviour in the presence of relatively similar situations) emerge very clearly when considering the successive changes in Wall's learning history.

Appendix 5 and Section 5.2.1 demonstrate that learning history is also activated by the behaviour setting and primes the setting to determine which stimuli achieve discriminative function (which elements are reinforcers and punishers) and which stimuli achieve motivational function (i.e., the salience and effectiveness of the stimuli or the degree to which a consequence is reinforcing or punishing within the particular situation) (Foxall 1992b, 1996b, 1997b; Fagerstrøm *et al.* 2010; Foxall 2010b). The evidence also demonstrates that learning history functions to determine the scope of the behaviour setting.

³¹⁸ See Section 5.2.1 of this Chapter, in particular Section 5.2.1D.

Other Personal Variables

Appendix 5 emphasises the importance of two additional personal variables: *absorptive capacity* and the relationship between the firm and its owners.

First, with respect to absorptive capacity, three sets of findings are of interest: (1) The history of Wall's demonstrates *entrepreneurial behaviour*, when entrepreneurial is described in terms of a particular "alertness" to market opportunity (Kirzner 1973) or "the capacity to exploit possibilities" (Minkes and Nuttall 1985, p. 218), a propensity towards a greater likelihood of developing new products and markets, and a tendency towards technological progressiveness by continually rationalising its business operations (Zahra 2008) to commercially exploit these opportunities. The evidence also shows Wall's consistent and enduring responsiveness to market opportunities at levels relatively higher than that of Glacier. (2) Wall's resided in an environment characterised by a relatively high level of uncertainty resulting from the weather with little precise means to mitigate for it³¹⁹. The vagaries of weather occasioned practices that functioned to reduce its negative effects including off-season sales, shaping year round consumption of take-home products, and innovation through the provision of new and increasingly sophisticated products. Most importantly as a case of problem solving and precurrent behaviour³²⁰, both Wall's and Glacier developed, utilised, and continuously researched advanced modelling techniques (weather correction modelling) in an attempt to distinguish the effects of weather variations on demand/sales from other sources and to correct for them (resulting in improved pre-season planning). Both organizations were already using weather correction during the 1950s. And, given the resulting enhanced feedback on their own performance

³¹⁹ The weather functioned as a highly salient punisher because the phenomenon signalled relative uncertainty in the flows of patterns of reinforcement and punishment contingent upon producing and marketing ice cream. Besides effecting the flows of sales and profits (reinforcement regulation), the weather also effected the range of behaviours possible during the six months off-season (qualification of setting scope) including pre-seasonal levels of manufacturing, employment, accumulation of stock, raw material purchases, storage, and capacity utilisation across the entire operation (e.g., levels of idle manufacturing and transportation equipment and so on). See Appendix 5, Section A5.2.4 on the problems related to seasonality and weather and occasioned practices. See also Appendix 5, Section A5.2.2 on Imperfect Market Information.

³²⁰ See Chapter 3, Section 3.2.7 for a definition of these terms. See also Section 5.4 of this Chapter for a more detailed interpretation of Wall's practices as problem solving.

vis-à-vis environmental conditions, the practices were informationally reinforced.

(3) The downturn in demand during the very early 1960s (due to successive bad seasons and the imposition of a purchase tax) made more salient the absence of more precise market information. The combination of punishers occasioned improved market research techniques thereafter³²¹.

An appeal to the term *absorptive capacity* sheds some light to these findings. Absorptive capacity is related to organisational learning and innovation and is expressed in terms of the ability of firms to recognize the value of information drawn from outside sources, comprehend this information fully, and, apply this information to take advantage of commercial opportunities (Cohen and Levinthal 1989, 1990; Zahra and George 2002). The sensitivity of Wall's product development behaviour to patterns of reinforcement contingent upon generating variety and novelty, its history as an entrepreneurial force in market and technological development within the industry, and its prowess in successfully commercialising a range of new products, all seem to support the characterisation³²². Absorptive capacity and innovative capability are considered positively related and conferring strategic advantage (Cohen and Levinthal 1990; Wales *et al.* 2013). Overall the learning history of Wall's does indicate the organisation to have been better positioned than Glacier on these dimensions and appears to have been more entrepreneurial³²³.

Second, the evidence presented with respect to the relationship between Unilever and Wall's and shared characteristic features between the two³²⁴ suggests an additional variable that requires consideration within the BPM in application to firms: *the rules emerging from the behavioural interactions within the bilateral contingency between the firm and its owners.*

³²¹ Refer to Appendix 5, Section A5.2.2 on Imperfect Market Information and the occasioned market research techniques. The Commission remarks that both Wall's and Glacier devoted "considerable attention to research into market trends" (Monopolies and Mergers Commission 1979, p. 168). In addition, both entered into an exchange of information agreement lasting for about ten years from 1965 wherein some data was shared.

³²² See, for example, Appendix 5, Section A5.4.3 on the success achieved by Wall's when launching Soft Scoop and Cornetto and the increased imitation by Glacier and other rivals. See also Section A5.3 on Wall's technological and technical progressiveness.

³²³ The Ice Cream Report (1994, pp. 3-4, 113) reports the slow demise of Glacier Foods, its subsequent sale to Clarke Foods in 1992, and the eventual acquisition by Nestlé after Clarke Foods went into receivership later that year. In parallel, Wall's grew significantly so that by 1988 it sold £119.3m worth of ice cream and £160.6m by 1992 to dominate the industry and particular segments therein.

³²⁴ See Appendix 5 Section A5.3.1 and Section A5.4.2B.

Concluding Commentary

Figure 93 presents the refined and retained propositions developed in Chapter 4 to capture (1) personal variables relating to the firm, (2) the nature of the interaction of these variables with the behaviour setting faced by the firm; and, (3) the regulatory dimension of the personal variables relating to the firm – continuity, heritability, and replication.

Figure 93 – Refined and Retained Research Proposition 5 as Originally Defined in Chapter 4 (Section 4.3.1A)

Propositions Refined and Retained



As described in Chapter 3, from an operant perspective, rules are interpreted as a *probability* to act in a certain way given sufficiently similar circumstances with the ultimate emphasis placed on *actual* emitted patterns. The regulatory dimension of the personal variables is established empirically based on *actual* behaviour. The analysis and interpretation was also constructed to demonstrate the extent of similarity to the past. As the narrative on the growing importance of the grocery trade suggests³²⁵, the change strained the functional relations expressed within the long established contingencies summarising Wall's relations with the traditional trade and the practices of Wall's exhibited a degree of variation of possible selective significance. These variations were not drastic changes because the patterns of reinforcement contingent upon operating within the traditional trade did not disappear immediately and altogether but began a course of gradual decline³²⁶. As shall be seen later, this finding was an important indicator of differential reinforcement.

The view expressed by Skinner does not mean that individuals are predisposed to act in a certain way (Skinner 1984g). Rather, because rules summarise past empirical regularities, they provide a basis for predicting the behaviour of individuals given sufficiently stable environmental conditions and learning history, i.e., the potential for the continuity of behaviour within sufficiently similar settings (Foxall 1993b, 1997b, 2010b). Wall's, therefore, was not predisposed to innovate; its history shows innovation as a reinforced practice. The evidence suggests a sensitivity of the behaviour of the firm to the reinforcement patterns contingent upon generating commercially successful novelty, and, because of regular emissions of such novelty over the years in the presence of market opportunities and threats, Wall's would be expected to innovate when faced with such stimuli. The extent of this regularity and replication was demonstrated over the PLC stages in Section 5.2.1.

From the perspective of the Marketing Firm, therefore, the stable, regular, and predictive dimension of behaviour is represented by the personal

³²⁵ See Appendix 5, Section A5.3 (in particular Section A5.3.1) and Section A5.4 (in particular Section A5.4.5)

³²⁶ Indeed there is no evidence to suggest inertia on the part of Wall's (especially in contrast to Glacier).

variables of the individuals and the rules that are retrospectively inferred from a description of the stable contingencies³²⁷. This is the reason why environmental selection is said to operate on the *actual* behaviours rather than expected patterns (e.g., Van Parijs 1981; Hodgson and Knudsen 2010). Actual patterns (as a result from environmental interaction) are the basis of displacing or reinforcing the behaviours expressed by the rules.

The distinction between potential patterns as opposed to actual patterns is also critical to the analogy and distinction between genotype and phenotype. The distinction and interplay between genotype and phenotype is similar to Skinner's distinction between rule-governed behaviour and behaviour that is shaped in interaction with the prevailing environmental contingencies. This last distinction appears as a recurring theme in organisational theory (at its intersection with evolutionary economics) and has some parallels to the distinction between the *action* and *representation* dimensions of organisational routines (the unit of analysis in evolutionary economics) as found, for example, in Pentland and Rueter (1994), Cohen *et al.* (1996), Becker (2001, 2005), and Becker and Lazaric (2009). There is also similarity with the discussion of routines as having the role of 'generative structures' or rule-like entities Hodgson (2003), Hodgson (2008), Hodgson and Knudsen (2008), and Hodgson (2009b). In this literature, there appears relative consensus towards what Hodgson (2008) describes as the "causative" regulatory dimension not being necessarily the same as the actual behavioural outcome. From an operant perspective, the reason for this difference lies in the difference in controlling stimuli claimed to be operating in rule governed behaviour (the verbal specification of the contingencies) and contingency shaped behaviour (the actual contingencies). Whereas contingency-shaped behaviour comes under

³²⁷ The predictive and regulatory dimension of stable patterns of behaviour is also emphasised by Hodgson (2003) and Hodgson and Knudsen (2004, 2010) to (1) distinguish actually observed patterns of behaviour that arise in interaction with prevailing environmental conditions as opposed to potential patterns; (2) distinguish between actual observed behaviour and the nature and extent of variations of this behaviour from its stable, regular, and predictable dimension; and, (3) hypothesise a *generative* relationship between the stable, regular, and predictable dimension and what is actually observed as a result from the interaction with the environment (Hodgson 2003, 2008; Hodgson and Knudsen 2008; Hodgson 2009b; Hodgson and Knudsen 2010). It should be noted that Hodgson (2003) and Hodgson and Knudsen (2010), for example, use the terms "potential," "disposition" or "propensity" to act in a way that seems to imply more than simply a probabilistic expression of how the individual is expected to behave within a particular instance. The term "potential" here is used as an expression of probability. See also Van Parijs (1981), Vromen (1995), and Aldrich and Ruef (2006).

direct control of discriminative stimuli and maintained by its consequences, rule governed behaviour comes under verbal stimulus control and is only indirectly maintained by consequences (Skinner 1966b; 1969, p. 160; 1984d). The business model must have explicitly or implicitly specified the rules for Wall's original entry. In time, however, the business model evolved to include more comprehensive products as part of value delivery. Ultimately all behaviour is shaped by direct exposure to the contingencies (Skinner 1966b, 1969, 1984d; Foxall 1990, 1993a, c, 1997b, 2010b)³²⁸.

In conclusion, the existence of a rule does not necessarily mean that the behaviour specified within that rule will be evoked; not all contingencies can be described accurately or completely or observed or analysed³²⁹; and, rules embody solutions to past problems (i.e., behaviour appropriate, adapted, or fit to satisfy past contingencies) and thus may not necessarily be appropriate given prevailing environmental conditions (Skinner 1966b; 1969, p. 160; 1971, 1974, 1984d).

Thus, Proposition 1 is retained (Figure 94).

³²⁸ Ultimately the most effective means of reinforcement learning is through a direct exposure to the contingencies. This is because: (a) rule governed behaviour is behaviour that falls under the control of verbal stimuli in contrast to behaviour that fall under the control of the actual environmental events; and, (b) In Skinner's account, behaviour that is contingency-shaped is never identical to rule-governed behaviour. For example, the existence of a rule does not necessarily mean that the behaviour specified within that rule will be evoked; not all contingencies can be described accurately or completely or observed or analysed; and, rules embody solutions to past problems (i.e., behaviour appropriate, adapted, or fit to satisfy past contingencies) and thus may not necessarily be appropriate given prevailing environmental conditions (Skinner 1966b; 1969, p. 160; 1971, 1974, 1984d). In non-behavioural terms (and following an interpretation via the BPM), the consumer may have watched Coca-Cola adverts on TV and has been convinced on how wonderful the drink is. However, it is only after engaging directly with the brand (i.e., trying the brand at least once) that consumer realises whether he likes Coke and prefers it to Pepsi when it comes to quenching his thirst and receiving positive feedback about his purchase from his peers. Brands and their supporting marketing mixes are therefore easily conceptualised as rules that imperfectly describe consumer contingencies and capture consumer reinforcement criteria more effectively than those proposed by rivals. The utilitarian and informational consequences of purchasing Brand X (over Brand Y) are a more refreshing drink on a hot day, a wider selection of ingredients to choose from, more attractive packaging, wide retail availability, and so on. Brands and supporting marketing mixes function as rules and thus serve replicator function. However, it is only in a direct exposure to the contingencies that consumer behaviour is ultimately shaped.

³²⁹ This point underscores the finding of incomplete market information and causal ambiguity.

Figure 94 – Retained Research Proposition 1 (Partial) on Rule-Governed Behaviour versus Contingency Shaped Behaviour as Defined in Chapter 3 (Section 3.3.1)

Proposition 1: Operant Conditioning

Cultural practices are acquired, maintained, weakened, and extinguished by the individual via behavioural interaction with physical and social environmental contingencies either through direct exposure to the contingencies or through rules.

B. Marketing Behaviour and Its Reinforcing and Punishing Consequences

Chapter 3 identified three conditions as a measure to categorise qualitative evidence on consequential stimuli as a reinforcers or punishers: (a) behaviour produced some consequence, (b) the probability of behaviour increased or decreased respectively, and, (c) the increased or decreased probability of behaviour is a function of the specific consequence (Catania 1998; Cooper *et al.* 2007; Moore 2008)³³⁰.

On the one hand, sales and profits positively reinforced those marketing practices of Wall's that effectively channelled and increased the rate of retailer trading and consumer purchasing of its brands. On the other, sales and profits negatively reinforced practices (e.g., rationalisation, technological progressiveness, increasing scale economies through modernisation and capital investment) aimed at reducing the incidence of the costs of conducting these exchange transactions and those aimed at escape-avoiding (reducing or deterring) the aversive nature of competitive encroachment. Generally these costs had a punishing effect on behaviour. The evidence shows the particular sensitivity of Wall's marketing practices to patterns of relatively high utilitarian (sales, profits, positive cash flows) and high informational (market share, profitability, return on net sales value, return on capital employed) positive and negative consequences associated with significantly large volumes of ice cream manufactured, distributed, and sold to retailers and consumers. Achieving economies of scale in production, distribution, and marketing featured highly in the evidence relating to Wall's.

³³⁰ See also Appendix 5, Section A5.2.1A and A5.10.1.

By virtue of its learning history, the marketing behaviour of Wall's may therefore be expressed in terms of its sensitivity to the varying patterns of utilitarian and informational reinforcement and punishment arising as consequences of channelling retailer and consumer approach to terminate in literal exchange and from thwarting competitive encroachment.

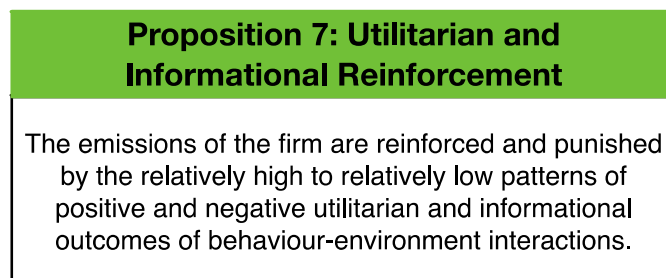
Clearly, the evidence indicates that the marketing practices of Wall's had a dual function within mutually reinforcing bilateral contingency relations: regulating patterns of reinforcement and qualifying the setting scope of the various parties of consumers, channel members, and rivals to generate sales and profits. This function spanned the entire 50 years of the history as narrated in the Ice Cream Report. Vella and Foxall (2011) arrive at a similar conclusion with respect to the period of Wall's history that they examined. In their study, the authors also describe how the Commission attempted to legally bind Wall's to cease its differential reward scheme, a pricing strategy that discriminated according to the volumes of business generated by wholesalers and retailers – higher volumes of business were rewarded by Wall's with quantitatively and qualitatively richer terms and conditions (e.g., better bonus schemes, higher discounts, priority of supply). Vella and Foxall (2011) concluded that the ability to adopt discriminatory pricing through a differential reward scheme was secondary to the capacity of the firm to shape and maintain the strength and incidence of channel approach towards significant volumes of transactions. The removal of discriminatory pricing threatened the very rich patterns of utilitarian and informational reinforcers that Wall's had enjoyed until then. By virtue of learning history, the threat to the patterns of reinforcement achieved value-altering effects, and Wall's changed the contractual relations with wholesalers and retailers bypassing the regulator to continue discriminating according to varying levels of approach. The evidence in the 1979 report on the differential reward scheme provides a historical explanation to support the supposition of Vella and Foxall (2011)³³¹. Generally, Wall's behaviour acquired and retained the capacity to engender retailer approach and channel this approach towards volumes of exchange transactions since the early 1920s. More specifically, its discriminatory pricing behaviour was reinforced – the differential reward scheme remained unchanged in its function to discriminate

³³¹ See, in particular, Appendix 5 Section A5.4.5C.

among different levels of channel approach since at least the 1960s. And, the emergence of the grocery trade, which included a budding wholesaler business, seems to have intensified the emission of the practice. The different types of contracts employed by Wall's for freezer and outlet exclusivity positively and negatively reinforced varying levels of retailer approach with the highest volume retailers receiving significant discounts and bonuses (utilitarian reinforcers), priority of supply and assigned an individual national account manager (informational reinforcers).

The evidence, therefore, supports Proposition 7 (Figure 95):

Figure 95 – Retained Research Proposition 7 on The Bifurcation of Reinforcement as defined in Chapter 4 (Section 4.3.1C)



C. Environmental Variables and Signalling and Motivating Operations

The SMC framework follows the characterisation of Vella and Foxall (2011) in defining the marketer behaviour setting in terms of setting scope and consequential stimulus events with physical, social, regulatory, and temporal dimensions.

The presentation and interpretation of the report identified retailer, consumer, and rival approach and escape avoidance behaviours as social stimuli. The state of technology, the temperature sensitive nature of the product and the weather were categorised as physical stimuli with regulatory dimension. The case of the temperature sensitive nature of the product in conjunction with the relative absence of a cold value chain at distribution to retail is a good example of how the behaviour setting scope was relatively constrained and compelled the gradual construction of centralised and radial storage and the use of refrigerated delivery vans in order to access and organise retailers as a

nationwide channel to the patterns of reinforcement contingent upon mass purchase and consumption of ice cream. Consequential events included such dimensions as increased rate of retailer trade in ice cream, increases in consumer demand, and increases in market share³³².

The SMC framework incorporates a second experimental operation, the *signalling operation* (Figure 96)³³³. Appendix 5 and Section 5.2.1 qualitatively demonstrate that the personal variables characterising Wall's were activated by certain events in the behaviour setting and functioned to prime these events according to either discriminative or motivating function, i.e., different types of stimulation³³⁴.

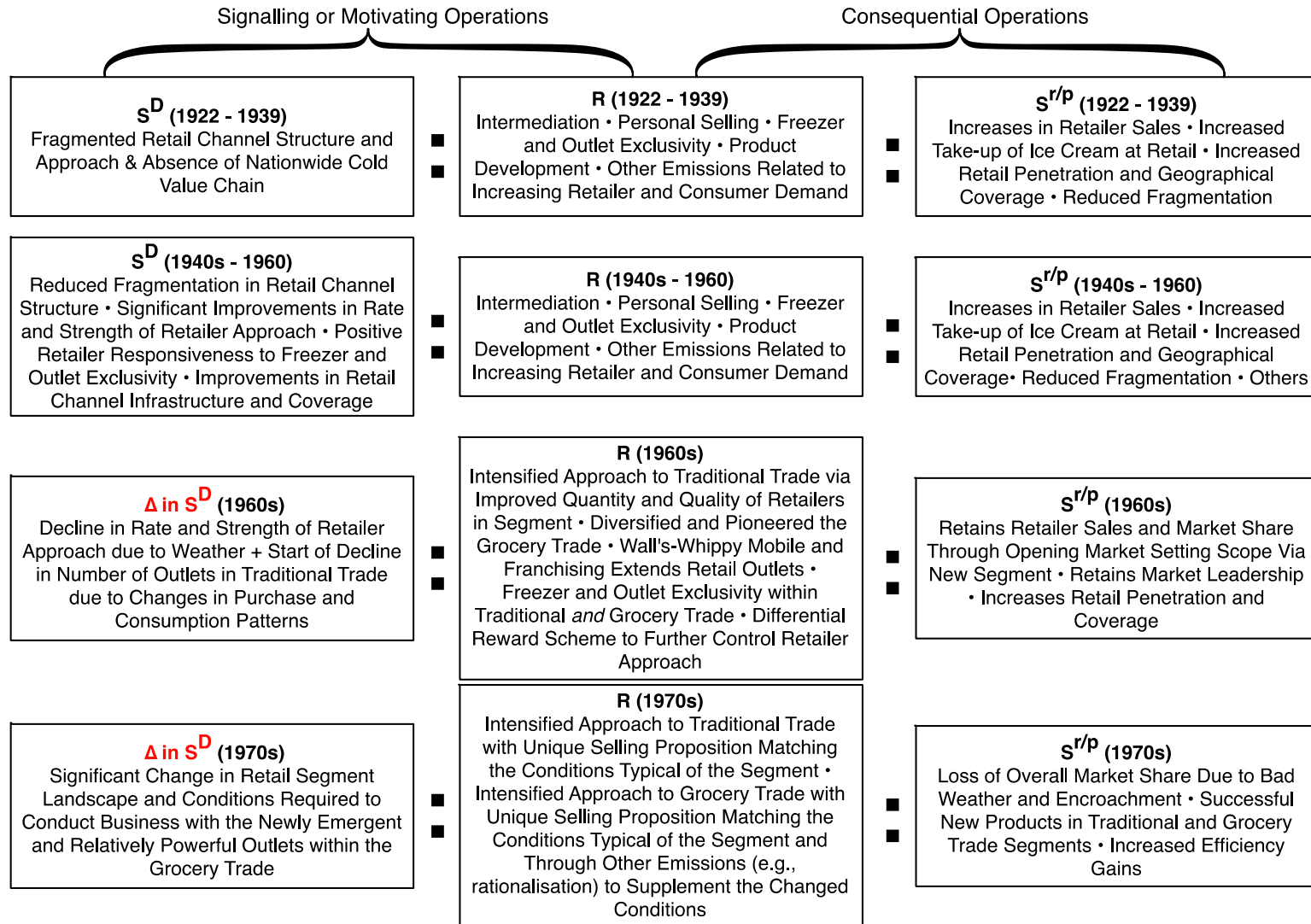
³³² See Appendix 5, especially Section A5.2.

³³³ Recall the definition of the signalling operation given in Chapter 3, Section 3.2.5.

³³⁴ It should be noted that stimuli do *not* acquire discriminative function because the individual *plans, desires, or wishes* to obtain a reinforcer. Neither does discriminative function indicate that the individual *knows* or *expects* that reinforcement is probably forthcoming if he behaves in a certain way (Foxall 1990, 2007c). In this sense, the relationship between the response and its consequence is not "teleological." In keeping strictly with radical behaviourist philosophy, there is (and was) no appeal to an explanation that goes beyond the level of analysis of observable behaviour and its interaction with the external environment. This does not exclude, however, verbal behaviour in the form of extracting rules 'about' environmental contingencies (Skinner 1966b). Simply, over the individual's history of reinforcement and punishment antecedent discriminative stimuli are said to acquire a capacity for controlling or regulating behaviour (Foxall 1990; Moore 2008; Pierce and Cheney 2008; Fagerstrøm *et al.* 2010; Vella and Foxall 2011). This is because the presence of a discriminative stimulus has come to be reliably or consistently followed by increases or decreases in certain reinforced or punished behaviour (Foxall 1990, pp. 38-39; Pierce and Cheney 2008, p. 26; Vella and Foxall 2011).

Figure 96 – Signalling and Consequential Operations

Learning History • Business Model • State of Deprivation • Managerial Deliberation and Planning



Section 5.2.1 categorised the two generation-situations into four distinct stages to qualitatively demonstrate the main theoretical criterion for defining a stimulus as having gained discriminative function. For example, by tracking the changes in retailer approach and custom (the stimuli) and the nature of the associated responses by Wall's throughout the history covered in the report, a positive *qualitative* correlation could be established to state that positive changes in retailer approach and trading in Wall's brands (the *discriminative stimulus*) occasioned positive changes in the behaviour of Wall's that typically generated retailer approach (the *reinforced* response). Once this correlation was established then a thorough investigation and comparison of the changes in the contingencies governing the traditional and the grocery trade segments could also proceed to show how several factors combined to function as motivating operations given the accumulation of a learning history and to claim that the changes functioned in a manner analogous to differential reinforcement³³⁵.

Vella and Foxall (2011, 2013) suggest the application of the S^D and MO distinction already existing in operant research (e.g., Laraway *et al.* 2003; Michael 2007; Fagerstrøm *et al.* 2010). The analysis appealed to MOs in three separate occasions to interpret the value- and behaviour- altering effects. To Glacier Foods, Wall's represented a punishing event within the behaviour setting the salience of which was established by several dimensions of the personal variables providing one instance of MOs. The two other instances of salient punishing events interpreted in the same terms relate to the threats of consumer demand variability and competitive encroachment (Figure 82)³³⁶. The findings, therefore, support the usefulness and continued use for this distinction.

³³⁵ See also Section 5.3 of this chapter.

³³⁶ The evidence on Glacier regarding MOs is found in Appendix 5 (Section A5.2.1 and Section A5.11). The evidence on Wall's regarding MOs is found in Appendix 5 (Section A5.3.3C and Section A5.4.2C) and the analysis and interpretation in Section 5.2.1C and Section 5.2.1D of this Chapter.

5.3 The Processes of Environmental Selection: Behaviour-Environment Relations

The first part of this analysis and interpretation of selection dynamics based on operant conditioning examined the two generation-situations in terms of the various elements of the BPM. The main findings supported the continued use of the model, provided an empirical basis for clarifying operational definitions, and, aided in refining the related research propositions to stand as working hypotheses in future research. One of the main findings, for example, clarifies the meaning of the regulatory dimension of the personal variables in the BPM as representing an explicit or implicit *heritable* instruction set governing the *potential* of replication in a particular sufficiently similar setting.

The second part of the analysis and interpretation investigates the *processes of environmental selection* and examines the nature of the *interaction* of Wall's practices with the environment given the various personal variables (Figure 97).

Figure 97 – Section Summary

Section 5.3.1	The Examination Of Behaviour-Environment Interactions Through Bilateral Contingencies: The Analysis Demonstrates the Importance of Reciprocity and the Mutually Reinforcing and Punishing Relationship Between Wall's and the Prevailing Social Environment as a Key Finding.
Section 5.3.2	Discussion On the Analogy Between Environmentally Arranged Flow of Patterns of Reinforcement and Schedules of Reinforcement. The Evidence Emphasises the Importance of the Analogy Between Relative Patterns of Reinforcement (the Sensitizing Concept) and Schedules of Reinforcement (as An Experimental Variable and Definitive Construct) as Another Key Finding.
Section 5.3.3	Examination of The Manner In which Environmental Events Operate to Qualify the Behaviour Setting Scope and Regulate the Patterns of Reinforcement as Proposed By the SMC Via the Marketing Firm. Key Finding Supporting the Characterisation of Scope Qualification and Reinforcement Regulation by Environmental Arrangements.
Section 5.3.4	Interpret The Data To Establish Whether There was Evidence of Shaping, Maintenance, and Discontinuity of Behaviour Via Reinforcement and Punishment as the Main Processes Contemplated in Skinner's Evolutionary Analogy. The Importance of Shaping, Maintenance and Discontinuity as Selection Processes.
Section 5.3.5	Contrary to Original Expectations, the Evidence Indicates the Importance of Observation And Imitation of the Behaviour of Others as Selection Processes , a Key Finding Shedding Further Light on the Acquisition and Social Transmission of Practices.

5.3.1 Bilateral Contingencies of Reinforcement and the Selective Environment: Socially Mediated Reinforcement

The emphasis placed by Skinner (1953, 1957, 1961b, 1971) on social interaction is neglected in *Selection by Consequences* (Skinner 1981). In earlier publication he expressed these social interactions in terms of interlocking and reciprocal (i.e., mutually-reinforcing, regulating, and controlling) patterns of verbal and non-verbal behaviour within specific contexts that also exert control (Skinner 1953, 1957, 1961b, 1971).

Within the ambit of the Marketing Firm, Foxall (1990, 1999b) introduces the concept of bilateral contingencies of reinforcement as an interpretive device to frame patterns of mutually contingent social interaction within real world marketing contexts featuring literal exchange transactions. Bilateral contingencies bring to the fore several properties of these patterns of interaction: (1) dynamism; (2) a critical distinction between social and literal exchange; (3) reciprocity, i.e., mutually contingent and reinforcing and punishing interaction; and, (4) the operation of this relationship as *mutual* scope qualification and reinforcement regulation (Foxall 1999b; Vella and Foxall 2011). The SMC relies on bilateral contingencies to characterise the nature of the socio-economic selective environment and to propose how social and physical contingencies function to control and regulate marketing practices.

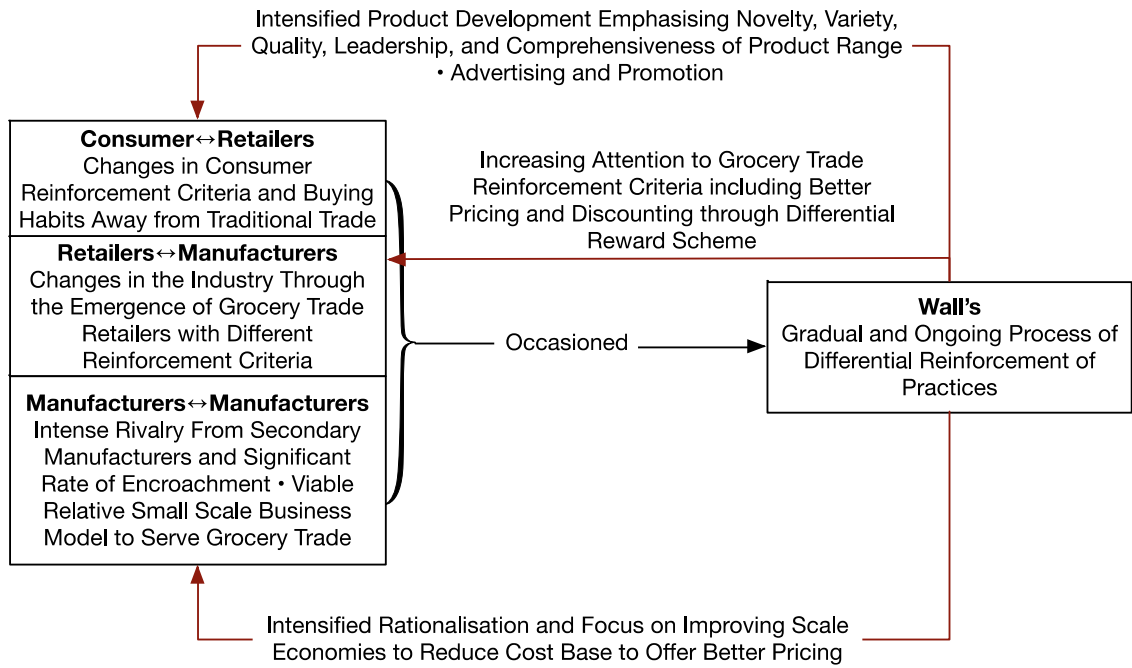
Dynamism emerges strongly in the evidence and may be exemplified by (1) the changes brought about through the emergence of retailers typical of the grocery trade segment (Figure 98)³³⁷; (2) the rising salience and improved fitness of a tier of secondary manufacturers to the extent that, within five years, these firms managed to nearly double their market share³³⁸; and, (3) by the gradual emergence of broad and comprehensive product ranges as an outcome of decades long aggregate interactions between Wall's, Glacier, and other manufacturers with consumers³³⁹.

³³⁷ See Appendix 5, Section A5.4.5.

³³⁸ Wall's remarked that competition from secondary manufacturers within the grocery trade turned the market into a field of intense "battle for access to supermarkets, home freezer centres and large wholesalers" (Monopolies and Mergers Commission 1979, p. 116). See also Appendix 5, Section A5.4.5.

³³⁹ See Appendix 5, Section A5.3.3 and Section A5.4.4.

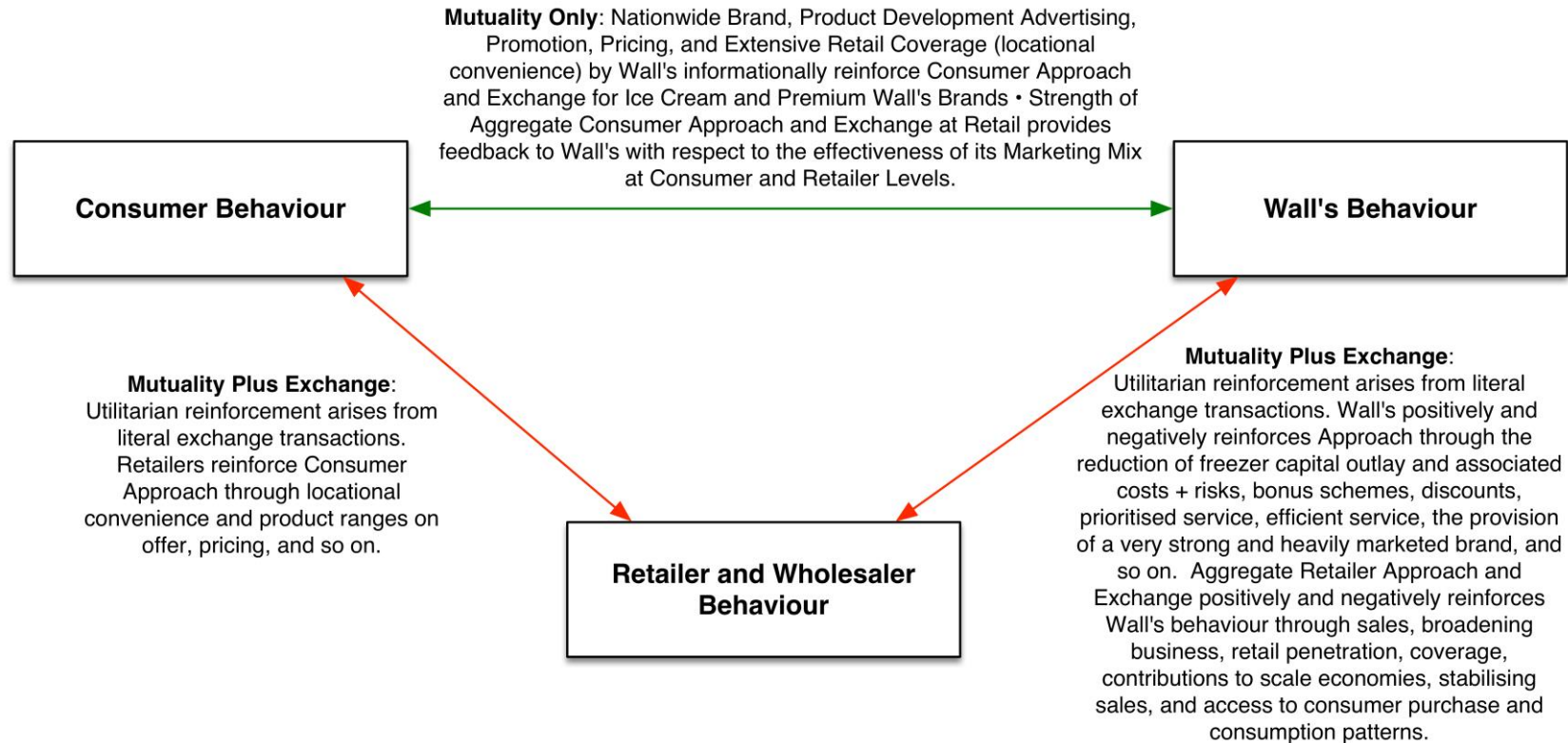
Figure 98 – Dynamic Nature of Bilateral Contingency Relations: Emergence of the Grocery Trade



Source: Evidence Presented in Appendix 5, Section A5.4

Equally useful in the analysis and interpretation was the distinction between social and literal exchange within these relations (Figure 99).

Figure 99 – Mutuality and Mutuality Plus Exchange Relations (1970s)



Generally:

- (1) Mutuality Only Relations are Characterised by a Dominant Emphasis on Informational Reinforcers and Punishers. Mass advertising and branding informationally reinforce consumers by providing feedback on the products and brands in question. Competitive encroachment signals threats to or opportunities for the business.
- (2) Mutuality-Plus-Exchange are Characterised by a Dominant Emphasis on Utilitarian Reinforcers and Punishers arising from the Benefits and Costs Associated with Literal Exchange.

Source: Evidence Presented in Appendix 5, Section A5.4

The evidence presented in Appendix 5 clearly demonstrates reciprocity: For example: (1) aggregate increases in retailers trading in Wall's brands reinforced the intermediation, personal selling, and freezer exclusivity practices of Wall's. The organisation approached these patterns of reinforcement at a faster rate improving its offering, proposing new opportunities for boosting ice cream sales revenues, and assuming those financial risks and burdens that typically acted as a deterrent for the take up of ice cream retailing³⁴⁰. (2) The gradual increase in consumer demand variability for ice cream reinforced product development and an increasingly more broad, comprehensive, and complex product range on the part of Wall's. The increased efforts of Wall's to generate variety and novelty for the purpose of greater distinctiveness at store level, to enhance its reputation as a market innovator among consumers, and to construct sturdier barriers to rival imitation operated in conjunction with the activities of other national and secondary manufacturers to shape and strengthen the rate of variability in consumer behaviour³⁴¹. (3) Varying levels of retailer approach and traded volumes positively reinforced the discriminatory behaviour (including an appropriate sales organisation with national account managers, a differential reward scheme, and priority of supply) by Wall's for at least 16 years. The different pricing structures, bonuses, discounts, and personal selling efforts negatively and positively reinforced retailers to the extent that Wall's experienced a surge in the level of wholesale trade and by 1976 some 170 of its larger customers traded 38% of its total turnover. Of these, 51 organizations generated sales in excess of £100,000 in Wall's brands and received additional discounts³⁴². The discriminatory behaviour remained until 2000 (Vella and Foxall 2011).

The reciprocal nature of continual behaviour-environment interaction underscores the dynamic and non-linear nature of the causal sequences underlying natural selection (Plotkin and Odling-Smee 1981; Dahlbom 1984; Metcalfe 2005). Reciprocity in social interaction emphasises this dynamism and non-linearity. The evidence on demand variability among consumers shows how in the process of adapting to environmental conditions, the practices of Wall's and other national manufacturers also continuously altered these

³⁴⁰ See in particular Appendix 5, Section A5.4.4.

³⁴¹ See in particular Appendix 5, Section A5.3.3.

³⁴² See in particular Appendix 5, Section A5.4.5.

conditions. Thus, the adaptive changes introduced by the manufacturers generated further environmental changes that, in turn, occasioned further manufacturer variation. By the end of the 1960s, this non-linear dynamic produced a situation where the business model of Wall's incorporated the generation of variation (and novelty) and the provision of a comprehensive product range and wherein consumers demanded novelty and variety in ice cream³⁴³.

In addition, the non-linear interactive process also highlights the significant role that coordination efforts play in socio-economic evolution (Metcalf 2005) including efforts on the part of Wall's in: organising a critical mass of retailers into a nationwide network, replenishing its entire product portfolio continually, divesting certain relationships and passing them on to separate and subsidiary legal entities, circumscribing literal exchange relations within exclusivity contracts, and, rationalising and economising on the costs of transacting the market through rationalisation and technological and technical progressiveness. All these coordination efforts appeared to *circumscribe*, *stabilise*, and *routinize* market transactions thereby allowing Wall's to benefit from the steadier and improved flows in literal exchange transactions to better escape-avoid the sanctioning effects of conducting the business as a large-

³⁴³ Examples of adaptations to the prevailing market conditions include generating some level of product and brand variety, fending off rivals through differentiation, and constructing a nationwide refrigerated retail network. Examples of the conditions imposed by the environment include consumer behaviour being reinforced by differentiated variety given that ice cream was classed as a seasonal and an impulse item (see especially Appendix 5, Section A5.3.3A on the nature of impulse and convenience goods and the typical marketing strategies adopted; see also Kotler *et al.* (2013)). Examples of practices continually altering environmental conditions adding fuel to demand variability among consumers included bringing ice cream in contact with imperfect substitutes and, thus, introducing indirect competition via the differentiation efforts of the suppliers of those imperfect substitutes (see Table 14 on page 533 in Section A5.3.3A, Appendix 5, for a list of alternatives to ice cream).

scale operation under conditions of uncertainty. Improved sales and profits reinforced coordination³⁴⁴.

5.3.2 Schedule Effects

Following Foxall (1998b) and Vella and Foxall (2011), the SMC drew and applied the analogy between relative patterns of reinforcement and schedules of reinforcement³⁴⁵. As attested by the frequent reference to schedules of reinforcement in Appendix 5 and the discussion so far, the analogy emerged as a key construct especially when contrasted to Vella and Foxall's (2011) scantier use.

First, the relevant findings point to the usefulness of the analogy in understanding how environmental contingencies function to arrange **the flow of reinforcers and punishers** expressed in terms of (1) the time delay between an emission and its reinforcing or punishing consequences or (2) the amount of effort needed to produce reinforcement. Figure 100 exemplifies the flows of patterns of reinforcement and reinforcement produced by the behaviour of Wall's. The cases of seasonality (fixed interval schedule), weather (variable interval schedule)³⁴⁶ and consumer demand variability (variable ratio schedule)³⁴⁷ are particularly strong examples of the effects of the environmental contingencies on the flow of relative patterns of reinforcement and punishment contingent upon Wall's operating within the market.

³⁴⁴ With respect to the divestiture of certain relationships and their reconstitution into separate legal entities by Wall's, see Appendix 5, Sections, A5.3.1, A5.3.2.A, A5.3.3C, and A5.4.5 on Wall's-Whippy, Embisco, and Total Investments Limited. Glacier's coordination efforts through acquisition and the formation of separate legal entities to manage these acquisitions appear to have had similar effects (See Appendix 5, Section A5.11). In the case of the formation Total Investments and Embisco the evidence shows that Wall's and Glacier escape-avoided the aggregate costs inherent to managing the technical side of sourcing, installing and maintaining all refrigerated equipment by aggregating two separate large volumes within a single firm to benefit from greater scale economies (the case of Total Investments). Costs were obviously reduced due to the larger scale of Total and made more stable thereby reducing the risks of either individual firm. Embisco operated in a similar way for the manufacture of cones and wafers as did Wall's-Whippy with respect to direct mutuality-plus-exchange relations with consumers. Other implications of reciprocal social interaction are revisited in Section 5.3.4 of this Chapter. The manner in which mutual reinforcement and punishment operates within bilateral contingencies (i.e., *mutual* scope qualification and reinforcement regulation) is examined in Section 5.3.3.

³⁴⁵ The reason why an analogy is drawn is explained in Chapter 2, Section 2.3.6. Schedules of reinforcement are explained in Chapter 3, Section 3.2.6B.

³⁴⁶ See Appendix 5, Section A5.2.3 and also Section 5.3.3 of this chapter.

³⁴⁷ See Appendix 5, Section A5.3.3.

Figure 100 – Empirical Evidence on Schedule Effects

Flow of Pattern of Reinforcement Analogous to Ratio and Interval Schedules

	Reinforcer Flow	Punisher Flow
Ratio Schedule: Effort Required in the Generation of Reinforcement and Punishment	Reinforcer generated by a reduced number of emissions (e.g., increasing economies of scale in advertising, decreasing demand variability)	Punisher is generated by an increased number of emissions (e.g., increasing economies of scale)
Interval Schedule: Time Delay in the Generation of Reinforcement and Punishment	Reinforcer generated with reduced delay (e.g., sales during a very good season)	Punisher generated with increased delay (e.g., incidence of fixed costs on the business during a good summer, combining manufacturing operations in Embisco)

Flow of Pattern of Punishment Analogous to Ratio and Interval Schedules

	Reinforcer Flow	Punisher Flow
Ratio Schedule: Effort Required in the Generation of Reinforcement and Punishment	Reinforcer generated by a increased number of emissions (e.g., demand variability, offering discounts to grocery trade)	Punisher is generated by an reduced number of emissions (e.g., fixed capital cost incidence on business during winter)
Interval Schedule: Time Delay in the Generation of Reinforcement and Punishment	Reinforcer generated with reduced delay (e.g., sales during a bad season)	Punisher generated with decreased delay (e.g., incidence of fixed costs on the business during a bad summer)

Source: Appendix 5, Sections A5.2, A5.2.4, A5.3.1, A5.3.3A, A5.3.3B, A5.4.2B, A5.4.2C, and A5.4.2D

There are strong links between the flows of patterns of reinforcement and states of deprivation: a bad summer season functioned to withhold reinforcement as if on an interval schedule thereby increasing the relative state of deprivation.

Second, the findings emphasise the inherent **complexity of behaviour in natural settings** thereby deepening an operant understanding of behavioural selection. The evidence underscores the presence of arrangements analogous to *concurrent schedules*, i.e., an arrangement with two or more reinforcement contingencies operating simultaneously and independently for two or more emissions (Cooper *et al.* 2007, pp. 316-317)³⁴⁸.

³⁴⁸ See also Section 5.2 of this Chapter and the sources cited in Figure 100.

Ice cream was a relatively low value product – each sale represented an emission that produced a relatively poor pattern of utilitarian and informational reinforcement. In addition, each emission was also associated with a relatively high production and distribution per unit cost (patterns of punishment) due to the relatively high capital outlay and the recurring operational expenditures for (a) manufacturing quality ice cream, (b) distributing the product under refrigeration, and (c) providing a significantly large number of retailers with freezer cabinets. Further, revenue streams were relatively unstable and unpredictable because seasonality and the weather functioned to regulate patterns of reinforcement on *intermittent schedules*: seasonality functioned to regulate patterns of reinforcement on a relatively *fixed interval schedule of reinforcement* and the weather functioned to regulate these patterns on a *relatively variable interval schedule*³⁴⁹. On the other hand, the incidence of fixed costs on the business was relatively stable and continuous. In other words, costs functioned to regulate patterns of punishment in a manner analogous to a relatively *continuous* and not *intermittent schedule*³⁵⁰.

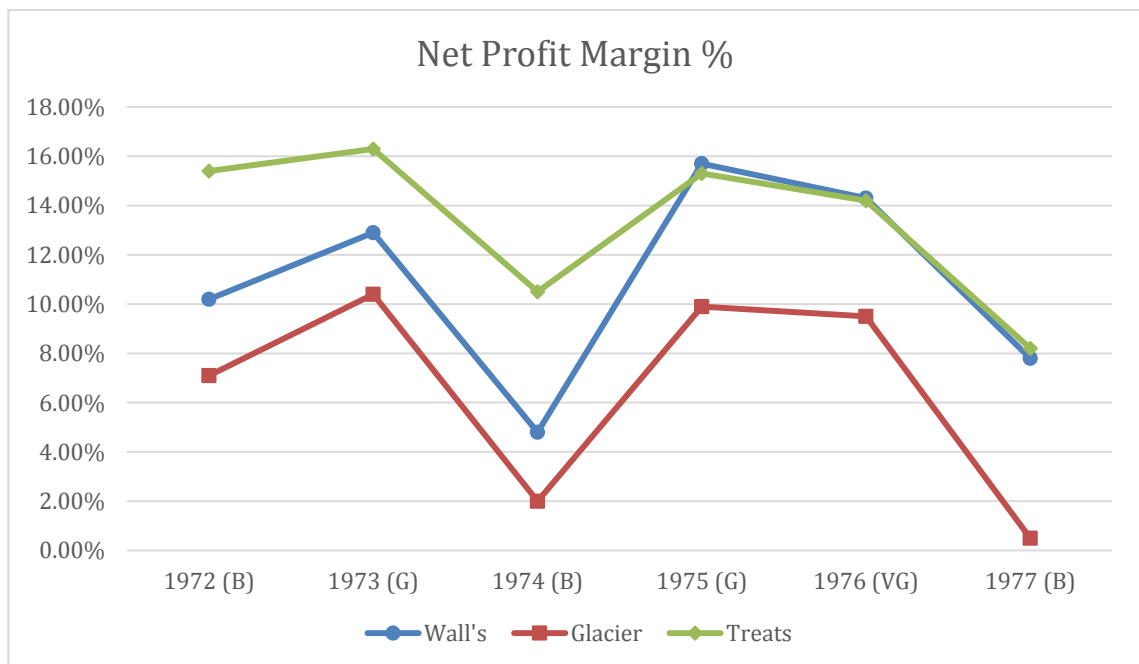
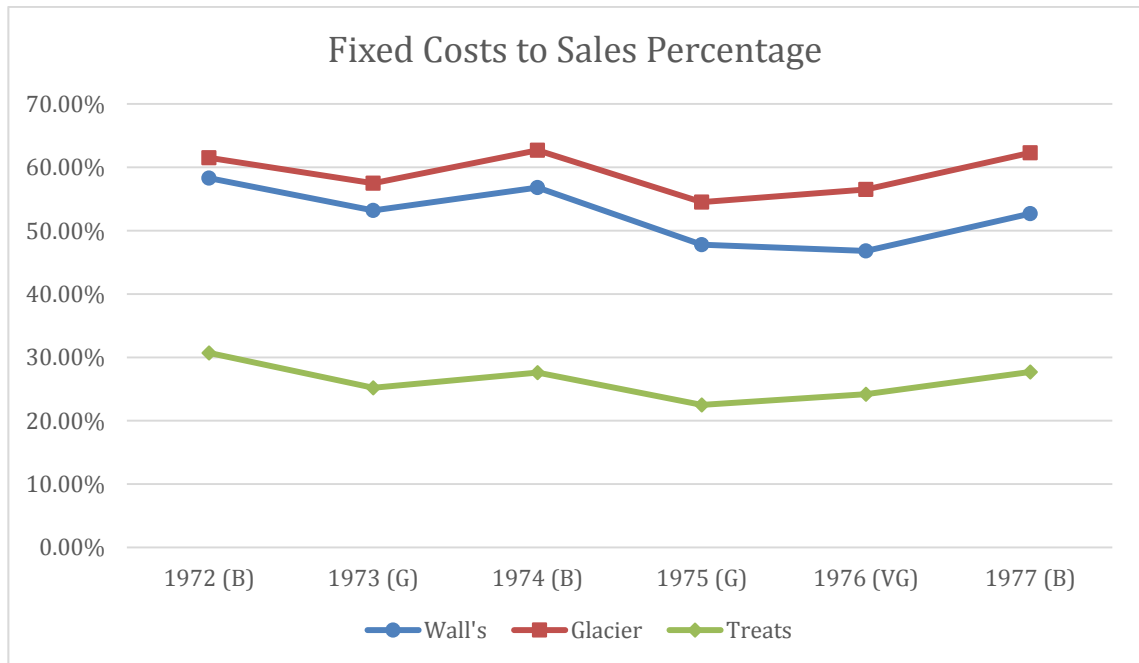
The evidence shows how the incidence of costs during the winter months was a continuous and relatively stable aversive consequence to Wall's of operating according to its business model (Figure 101)³⁵¹. (In fact, Wall's claimed that the company could register a profit only during six months of the year).

³⁴⁹ See Appendix 5, Section A5.2.4.

³⁵⁰ A continuous *reinforcement* schedule is defined as an arrangement that generates patterns of reinforcement for each behavioural emission (Cooper *et al.* 2007, p. 305; Pierce and Cheney 2008). Conversely, a continuous *punishment* schedule is such where some emission produces a continuous stream of punishers (Pierce and Cheney 2008, p. 126).

³⁵¹ See Appendix 5, Section A5.4.2D and contrast the fixed costs to sales ratio and net profit margins.

Figure 101 – Fixed Costs to Sales and Net Profit Margin



Source: Appendix 5, Sections A5.4.2D and A5.7.1L

During bad weather years and the later period of increased competitive encroachment, the punishing consequences associated with the relatively stable fixed costs of maintaining a large-scale production and distribution organisation operated in conjunction with the significantly reduced revenue streams (positive reinforcers). The combination of punishment and of the decreased quantity and quality of patterns of reinforcement had suppressive effects on behaviour (Pierce and Cheney 2008, p. 127). Despite the suppressive effects of the high incidence of costs, Wall's did not exit the market.

Third, the behaviour of Wall's acquired sensitivity to the incidence of these flows and its behaviour also functioned to alter flows by stabilising them through some degree of **routinization**. Freezer exclusivity seems to have functioned in this manner.

Research on schedules of reinforcement suggests that behaviour maintained on a continuous schedule is quickly acquired and rapidly extinguished when reinforcement is withheld (Cooper *et al.* 2007; Pierce and Cheney 2008). In addition, behaviour topographies tend to remain relatively unchanged during the operation of reinforcement schedules. Intermittent schedules, on the other hand, tend to occasion more variable behavioural topographies and resistance to extinction. In other words, behaviour tends towards greater variability as reinforcement decreases in frequency and in predictability (Pierce and Cheney 2008, p. 102). The high degree of demand variability during the 1970s (in contrast to earlier decades) was co-shaped through a gradual process of reinforcement that featured Wall's *continually* emitting greater variety in its products and generating novelty. This rendered the flow of reinforcers controlling the behaviour of Wall's and consumers more variable. Exclusivity, on the other hand, seems to have countered these effects attempting to render the flow relatively more fixed by constricting the behaviour setting scope at retail making available only one set of patterns of reinforcement contingent on ice cream purchase (i.e., only Wall's brands). A constrained scope limited variability while making sales more predictable. The increased degree of predictability among consumers and the resulting steadier patterns of reinforcement arising from sales reduced the incentives and likelihood that practitioners of freezer and outlet exclusivity altered the topographies of their strategies. Stabilising the incidence of revenue and profit became a very important consequence of Wall's marketing practices (including and particular to exclusivity) given the punishing effects of variability in demand arising from seasonality and the weather and, later, from increased competition from functionally equivalent and imperfect substitutes.

The emphasis on stability and predictability echoes that of Vella and Foxall (2011) who do not, however, provide a reason why this happens. The

analogy of schedules of reinforcement is useful here. Intermediation via exclusivity functioned principally to negatively reinforce retailer approach and literal exchange in Wall's brands. When practiced on a very large scale, exclusivity had stabilising effects on Wall's revenue and profit streams. Stability operated (1) by improving the *ratio* schedule (a) by reducing the number of responses to be performed before reinforcement was generated or (b) by increasing the number of responses to be performed before punishment was incurred, and, (2) by improving the *interval* schedule (a) by reducing the time between an emission and the reinforcer that sustains it or (b) by increasing the time (delaying) between an emission and the punisher that weakens it³⁵². Exclusivity functioned to generate stability in each of these four dimensions³⁵³.

These findings and others encourage the continued use of the construct and also coincide with the broader findings on concurrent schedules of reinforcement in applied operant research (Foxall 1990, 1994, 1998b; Foxall and Schrezenmaier 2003; Cooper *et al.* 2007; Foxall 2007a, 2010b).

5.3.3 Reinforcement Regulation and Scope Qualification

The SMC framework characterised the process of environmental selection of behaviour as operating in two ways: to qualify the behaviour setting scope (Figure 53) and/or regulate patterns of reinforcement and punishment (Figure 54)³⁵⁴. Appendix 5 provides several clear examples of how environmental events operated independently, simultaneously, and in combination within a single and across the two generation-situations to produce these two effects.

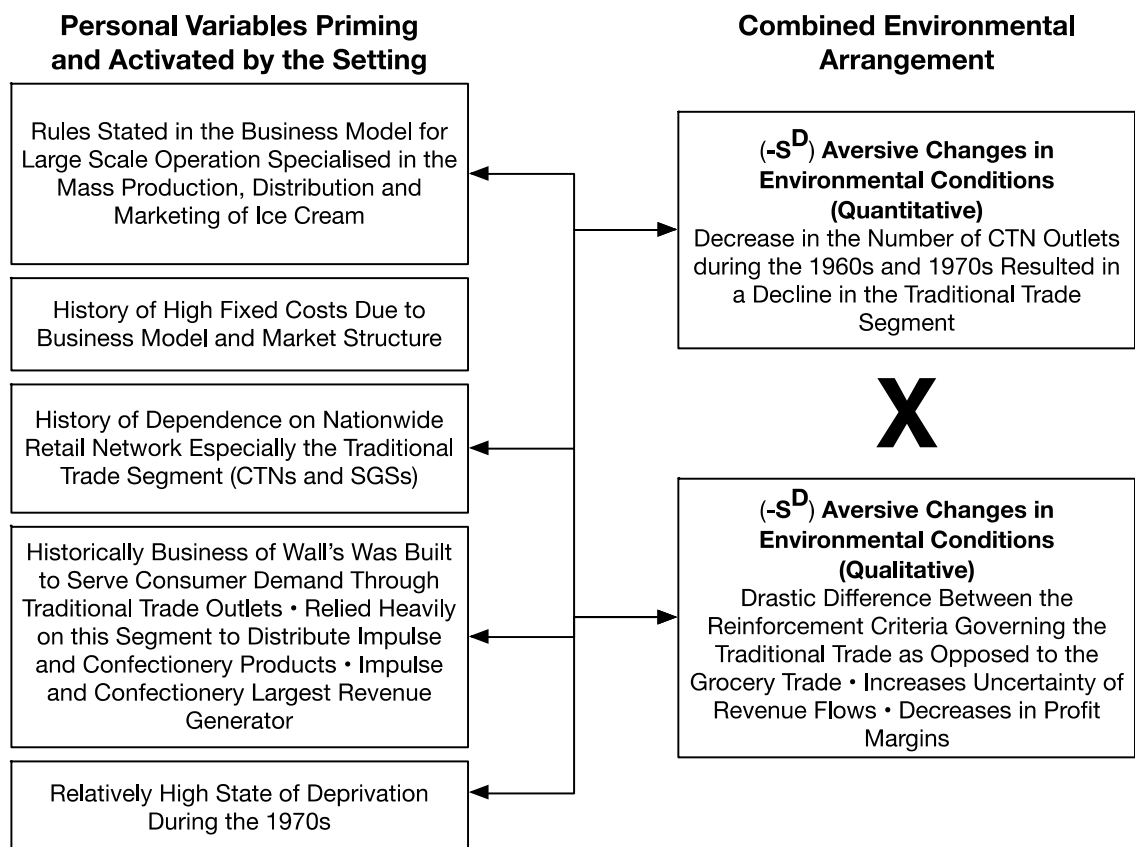
³⁵² Examples of improving the ratio schedule by reducing the number of responses to be performed before reinforcement was generated include: (a) once a contract was concluded personal selling was shifted to other potential customers; (b) more consumers at any single outlet purchase Wall's brands because of restricted brand choice; and, (c) divesting from mutuality-plus-exchange relations with consumers. Examples of increasing the number of responses to be performed before punishment is incurred include improvements in distribution economies. Two examples of improving the interval schedule by reducing the time between an emission and the reinforcer that sustains it relates to having a larger number of retailers and sales people to improve the frequency of sales. One example of improving the interval schedule by increasing the time (delaying) between an emission and the punisher that weakens it relates to when competitive encroachment in any given outlet is delayed or eliminated through freezer or outlet exclusivity.

³⁵³ See for example the formation of Wall's-Whippy in Appendix 5, Section A5.3.1. See also Appendix 5, Section A5.3.3B.

³⁵⁴ This section utilises the operational measures established in Chapter 4 (Section 4.3.2B) and detailed in Appendices A4.3 and A4.4 to analyse and interpret the data.

Reinforcement Regulation: The changes in the nature of retailer demand during the 1970s provides an excellent illustration of how social contingencies regulated the reinforcement and punishment patterns of Wall's. Figure 102 exemplifies how increases or decreases in retailer demand resulted in increases or decreases in the **effectiveness** of sales and profits as reinforcers and costs as punishers³⁵⁵.

Figure 102 – Reinforcer and Punisher Effectiveness



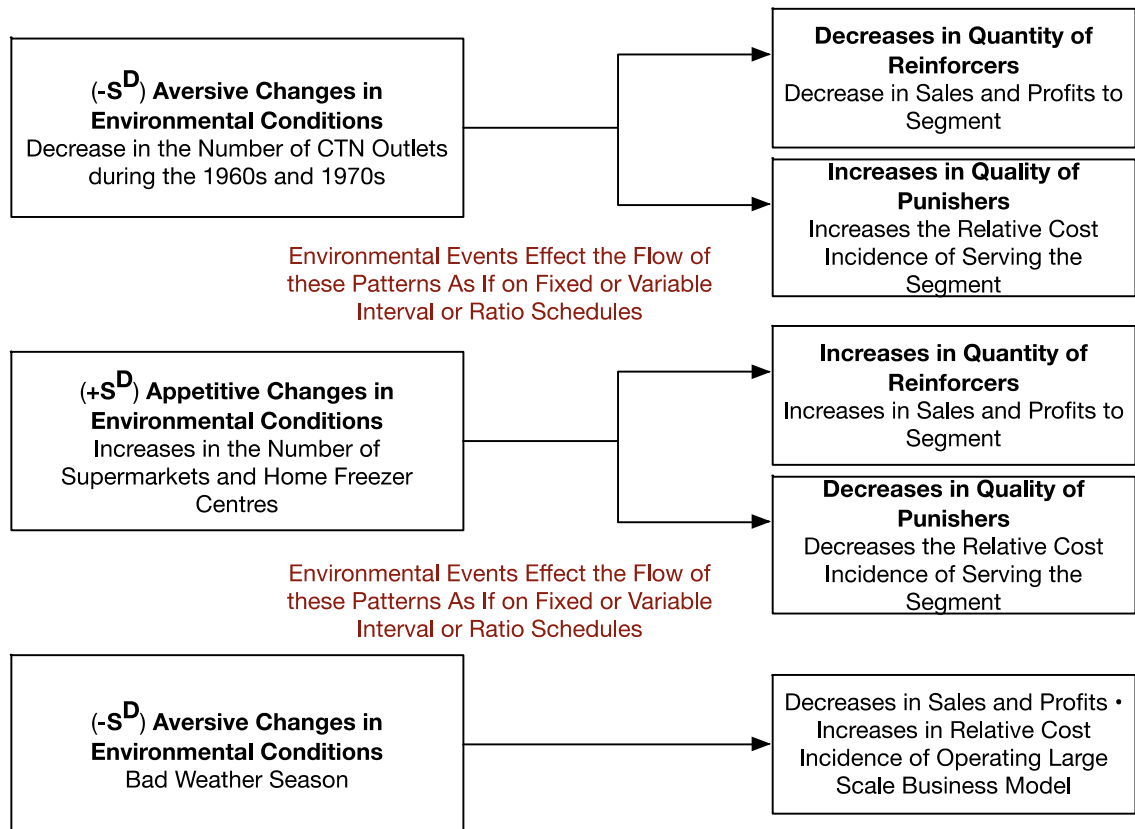
Source: Appendix 5, Section A5.4

Figure 103 shows how increases (including presentation) or decreases (including absence or removal) of environmental stimuli regulated the quality and quantity of reinforcers (sales and profits) and punishers (costs)³⁵⁶.

³⁵⁵ See Appendix 5, Section A5.3.6 and A5.4.2D.

³⁵⁶ Appendix A5.4.2D explains how the various environmental conditions effected sales, profits, market share, and other utilitarian and informational reinforcers associated with Wall's.

Figure 103 – Regulation of the Quality and Quantity of Reinforcers and Punishers



Source: Appendix 5, Section A5.3 and A5.4

Table 1 demonstrates how good or bad seasons effect utilitarian reinforcer quantities and the overall sales growth of the manufacturers. The phenomenal growth in sales by the secondary manufacturers functioned as a punisher of increasing salience in Wall's behaviour setting.

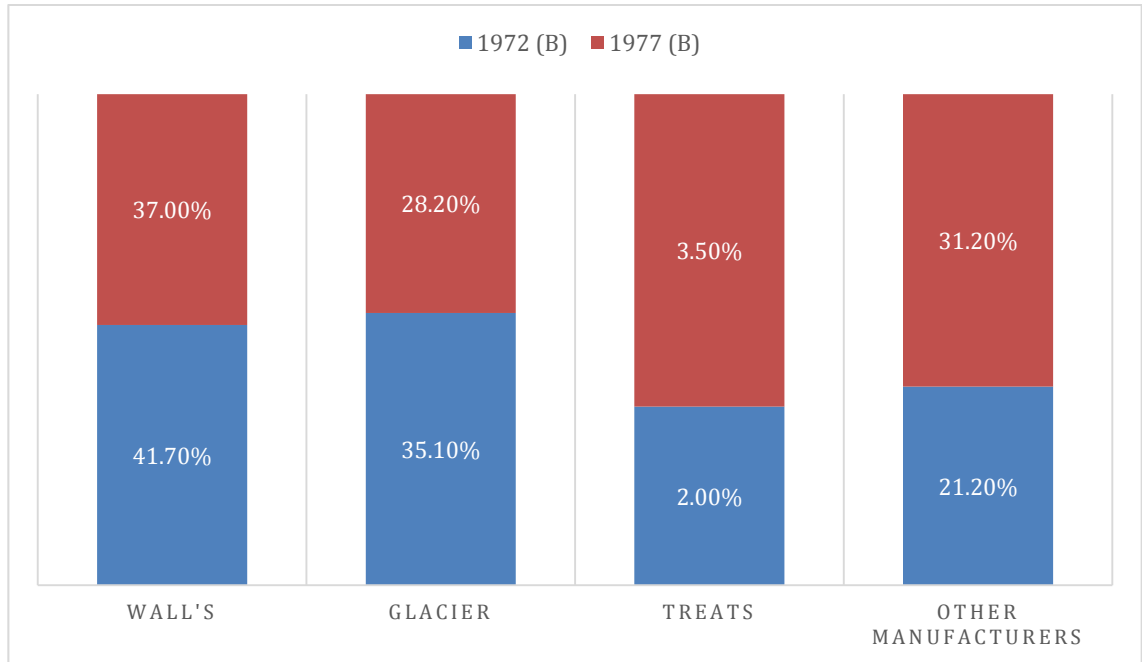
Table 1 – Effects of Seasonal Weather Fluctuations on Sales Volumes

	Change in Sales Volumes between 1972 (Bad Weather Year) and 1973 (Good Weather Year)	Change in Sales Volumes between 1976 (Very Good Weather Year) and 1977 (Bad Weather Year)
Wall's	17.4%	-14.4%
Glacier	30.4%	-13.0%
Treats	93.2%	-15.2%
Other Manufacturers (Estimate)	108.3%	-16.2%

Source: Appendix 5, Section A5.4.2D

Figure 104 exemplifies how a change in environmental conditions (intensified competitive encroachment) reduced the quantity and quality of informational reinforcers (Wall's market share) in a five-year period.

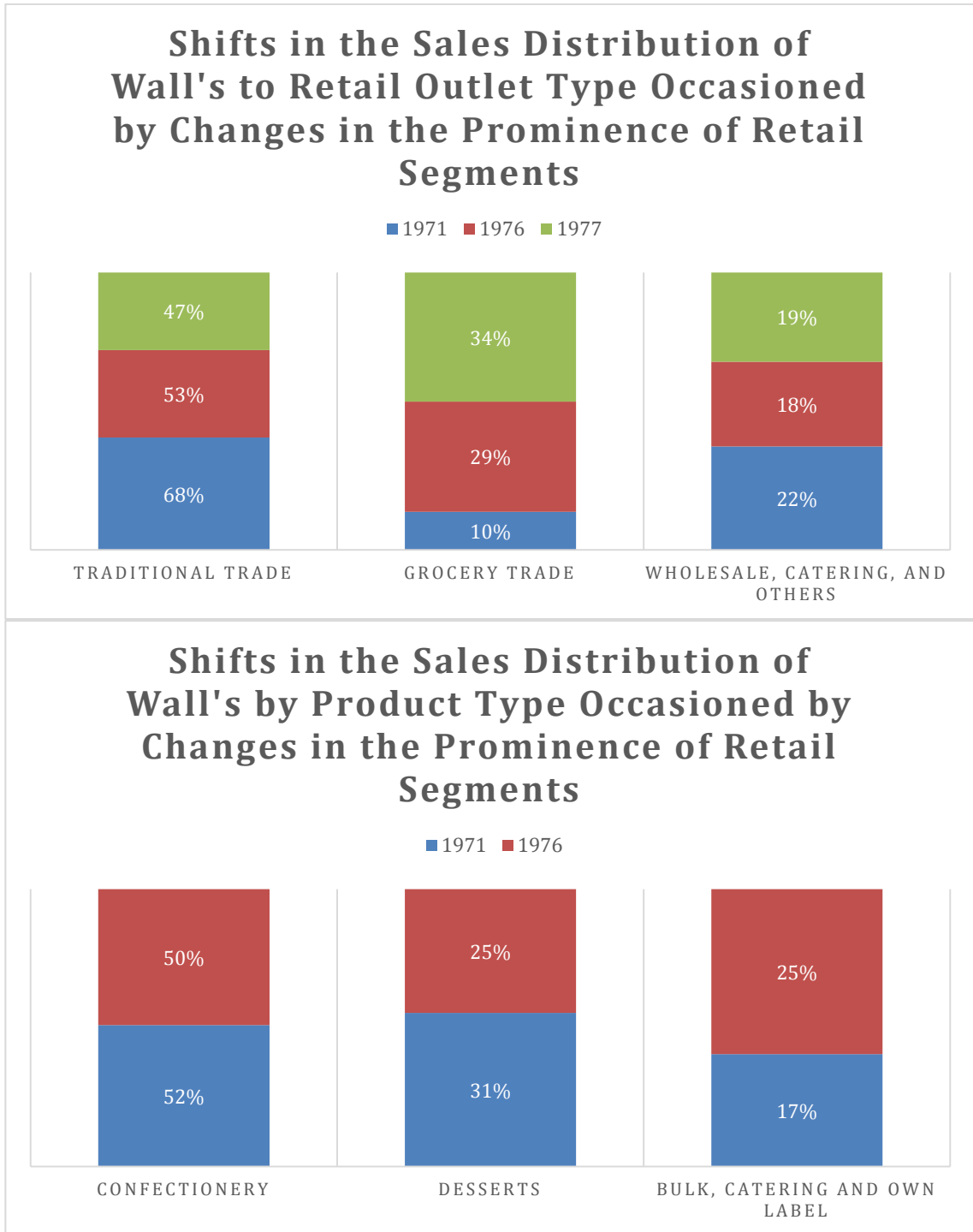
Figure 104 – Change in Wall's Market Share Due to Intensified Competition



Source: Appendix 5, Section A5.7.1E

The weakening and strengthening of marketing practices in relation to changing environmental conditions may be observed in the shifts in emphasis occurring in the distribution of Wall's sales among retailer types and product categories (Figure 105) during the 1970s.

Figure 105 – Weakening and Strengthening of Practices According to Environmental Changes



Source: Appendix 5, Section A5.4.2D and A5.7.1E

Events also effected the flow of these patterns as if on different schedules of reinforcement³⁵⁷.

Scope Qualification: The degree of fragmentation in the retail channel, competitive encroachment, the number of functionally equivalent and imperfect

³⁵⁷ See the explanation of this in Section 5.3.2 of this Chapter.

substitutes at any retail location and seasonality are all examples of events that typically functioned to qualify the behaviour setting scope restricting or broadening the range of behavioural emissions possible.

The highly fragmented retail channel limited the access to the patterns of reinforcement contingent upon mass purchase and consumption of ice cream because at the point of market entry and during the introductory and early growth stage of the industry there were relatively fewer retailers who owned a freezer (a reduced number and salience of reinforcers in contrast to a relatively salient punisher, i.e., the cost of building the nationwide retail network). Wall's escape avoided these aversive conditions by (a) intermediation (coordination) that removed the main deterrent of mass take-up at retail (the cost of buying and maintaining a freezer), and (b) such pull strategies as employing direct mutuality-plus-exchange relations with consumers. In so doing its actions functioned to broaden the setting scope that, in turn, shaped and reinforced competitive encroachment. Providing refrigeration seems to have been the only way to shape and encourage retail take-up as a route to the potential patterns of reinforcement contingent upon mass purchase and consumption. When considered as in aggregate, the sheer number of retailers and their joint access to a considerable mass of consumers all over the country signified a high degree of external control of the socio-economic contingencies controlling Wall's behaviour. Short of investing in a nationwide network of retailers with similar characteristics as CTNs, Wall's had little option. Building such a network would entail a significantly larger investment than providing existing retailers with freezers at a nominal fee (the lesser costly escape-avoidance emission). In addition, given the relatively low contribution of ice cream to retail turnover, retailers themselves were not subject to the contingencies.

Complexity: The interpretation of the evidence demonstrates further complexity – events combined to operate on the behaviour setting scope and on patterns of reinforcement during a single time period and across both situation-generations.

Consider, for example, the enduring contingency specifying the manufacturing and distribution of ice cream (R) under the conditions of a

product with a relatively short shelf life and the requirements of maintaining product at low temperature (S^D with regulatory dimension) to maintain its integrity and quality ($S^{r/p}$). In addition, this contingency was also subject to the persisting contingency specifying the supply (manufacturing, distribution, retailing, and marketing) of ice cream (R) under the conditions specified by seasonality and the weather (S^D).

Ice cream had to be manufactured, stored, and delivered to customers and consumers while retaining low temperatures to safeguard the integrity, prevent spoilage, and retain the quality of the product for ultimate purchase and consumption. Thus, a specialised cold value chain was required covering all aspects of supply. The supply contingency functioned as an enduring rule constricting the scope of the setting: the condition regulated the access to routes of the patterns of reinforcement contingent upon the ice cream purchase and consumption.

Improving demand conditions, interpreted from the perspective of a business model geared towards capturing the value from mass purchase and consumption of ice cream, signalled quantitatively and qualitatively rich patterns of utilitarian and informational reinforcement. As distinct from the supply of such substitute confectionery products as sweets, manufacturers, distributors, and retailers had no means of accessing these potentially rich patterns of reinforcement without cold storage.

The absence of a *nationwide* cold value chain to retail (namely, centralised storage, radial depots, and refrigerated vehicles), the relative absence of refrigerated space within retail outlets in the country, the averseness of retailers to carry ice cream, and the extensive degree of fragmentation of the retail channel across the UK, also functioned as barriers qualifying the setting scope right up to the 1950s (although in decreasing extent). In combination with the relatively large number of retail outlets as potential intermediaries, these factors functioned to (a) further control access to reinforcement and maintaining Wall's in a state of deprivation by withholding reinforcement, and (b)

prescribe a single and very specific set of tasks to gain access to reinforcement³⁵⁸.

Given the absence of a nationwide refrigerated distribution channel, the relatively low proliferation of domestic refrigeration right up until the late 1960s and related issues within the frozen foods industry³⁵⁹, and the pervasive averseness of retailers to trade in ice cream, Wall's and other manufacturers following a similar business model had only one means of approaching the potential patterns of reinforcement arising from mass purchase and consumption of ice cream – the construction and maintenance of a large-scale value chain that included the provision of freezers. The provision of freezers on exclusive terms most probably arose because of a reasonable requirement on the part of Wall's and other practitioners to ensure the best possible stream of sales from the freezer for the best possible return on average capital employed and to protect this investment from rival encroachment.

The lack of refrigeration technology at distribution and the absence of mass production within the UK functioned in a similar way prescribing a degree of technological progressiveness on the part of Wall's³⁶⁰.

There is no explicit evidence with respect to why Wall's took the decision to enter the ice cream market beyond the explanation given with respect to the aversive consequences (i.e., seasonality) of operating in the meat market. Thus, it is not possible to make any judgement with respect to the number and quality of possible alternatives the management of Wall's considered at point of market entry. That said, however, the SMC framework contends that the degree of setting stricture is a function of the extent to which there is ready access to being in alternative situations, which, in turn, is determined by

³⁵⁸ The Commission notes that for constructing and maintaining a sizeable operation, “the producer needs either his own distributive network (including cold stores, depots, and refrigerated vehicles) or access to a distributor who has them” (Monopolies and Mergers Commission 1976, p. 10, §23).

³⁵⁹ The Frozen Foodstuffs Report (1976, §30) indicated the enormous leap in the number of home freezer owners in the UK from 36,000 households in 1967 to 850,000 households in 1973. By 1974, 18.7% of households sampled by the National Food Survey owned a freezer. See also Appendix 5, Section A5.3.4.

³⁶⁰ The Commission pointed out, for example, that originally “the business developed on the basis largely of Wall's *own designed production and distribution equipment*” (Monopolies and Mergers Commission 1979, p. 26) and that Wall's maintained this behaviour until the 1970s.

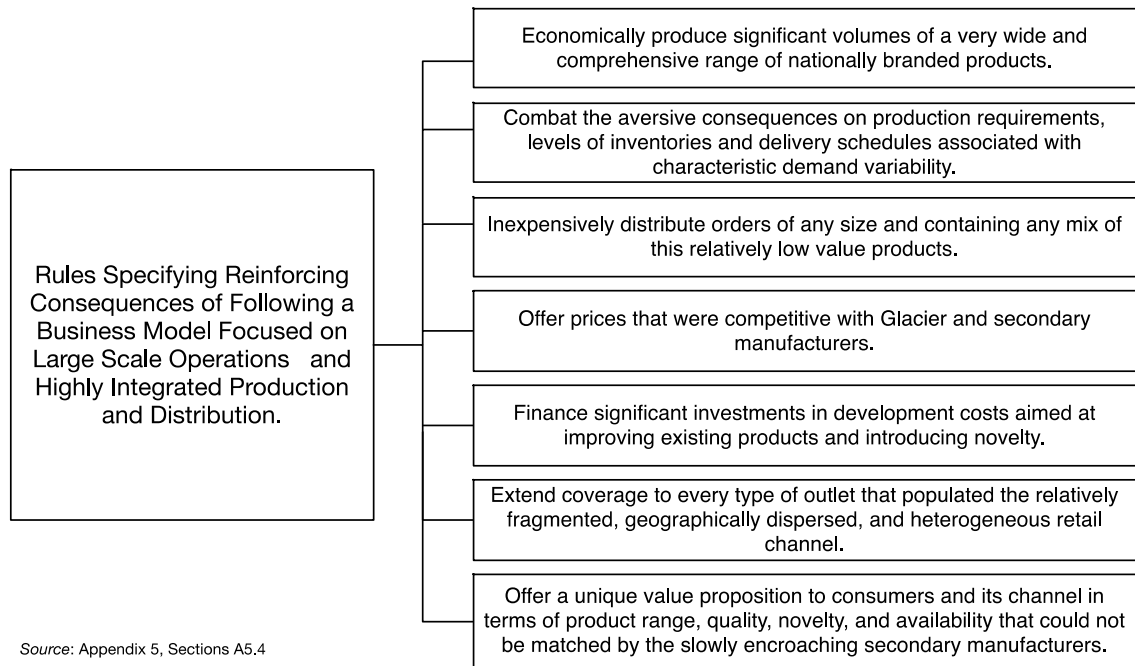
establishing whether compliant behaviour is negatively reinforced within a particular situation thereby diluting the reinforcement contingent upon defecting to alternatives.

The Commission states: “for any sizeable business, requirements of cold storage and refrigerated distribution form a major element of total costs” (Monopolies and Mergers Commission 1976, p. 10). Operating on a very large scale and rationalising these operations to gain the benefits of scale economies in manufacturing, distribution, and marketing are interpreted as qualitative examples of negative reinforcement: increases in sales volumes and revenues (R) *reduce* the per unit impact on profit of costs of supplying ice cream (utilitarian punisher). The history of Wall’s demonstrates the on-going quest to increase sales volumes and value and reduce per unit costs.

According to Wall’s, the relatively richer patterns of reinforcement contingent upon supplying ice cream for mass purchase and consumption were *only* contingent upon a business model governed by large-scale centralised production and highly integrated distribution and production. Given the particular risks of seasonality and uncertainty of within-season weather fluctuations, Wall’s claimed that through this type of business model it could capture the full benefits of mass purchase and consumption (Figure 106)³⁶¹.

³⁶¹ See also Appendix 5, Section A5.4.2C for other scale advantages.

Figure 106 – The Potential Reinforcing Consequences Specified by Wall’s Business Model (Rules)



The SMC framework suggests that the extent of setting scope stricture is a function of the cost of escaping from and avoiding environmental contingencies and the extent to which those in control of the contingencies are themselves subject to these contingencies.

During the 1920s, the relative cost faced by Wall’s to escape the contingencies just described was low because the investment in a cold chain was relatively low. However, as it expanded its value chain, the costs of escape mounted and its history demonstrated the extent of lock-in along the path prescribed by the contingencies in combination with the national supply business model (which also included the supply of a comprehensive product range). Avoidance of the costs specified by the contingencies favoured continual expansion in the scale and extent of retail coverage and the degree to which purchase and consumption was emitted *routinely* on a *mass scale*. To the extent that Wall’s grew its value chain steadily and aggressively throughout the two generation-situations canvassing outlets that traditionally did not stock ice cream and encouraging the birth (or so Wall’s claimed) of the grocery trade. In bouts of continued rationalisation during the 1960s and 1970s, Wall’s (a) hived off all its mutuality-plus-exchange relations with consumers into a separate legal entity, Wall’s-Whippy; (b) via its connection to Unilever, integrated its value chain with those Birds Eye into a single firm, SPD, in the

1970s³⁶²: and, (c) hived off a number of operations into separate firms (e.g., Total Investments) to reduce the negative impact of certain costs (sourcing, installing and maintaining freezer cabinets) on its main business³⁶³.

Most retailers were not particularly subject to the full effects of these contingencies since their respective business models envisaged alternative sources of revenues. Similarly, secondary manufacturers were not entirely subject to the contingencies because of their smaller scale focused on a relatively narrow range of products.

These contingencies were further compounded by other factors including imperfect information and uncertainty, demand variability at retail, increasing availability of relatively low cost and increasingly sophisticated production technology, and the increasing encroachment during the late 1960s and 1970s due to the different conditions imposed by the grocery trade for the provision of ice cream (e.g., emphasis on competitive pricing, lesser regard for branding) also favouring smaller low cost producers. The degree of perishability of ice cream further constrained the setting scope in a relatively strong way: off-season production and accumulation of stocks during winter was not possible and even when storage was possible the expense was significantly high. Wall's was faced, therefore, by growing off season idle capacity and the costs to maintain the capacity without earning profits. Wall's drew attention to these peculiarities of the business describing them as "special risks of the ice cream industry" which, it claimed, placed the company in a situation where it could only make profits during six months of the year (Monopolies and Mergers Commission 1979, p. 123). The relatively high proportion of fixed costs in the business (for example, high capital expenditure and overheads arising from refrigerated distribution, storage, and relatively production) signalled that achieving break even and registering profit critically depended on business

³⁶² In 1981, Unilever merged Wall's and Birds Eye into a single "low temperature" business to further expand the scale of operations and gain further benefits from rationalisation (Monopolies and Mergers Commission 1994; Vella and Foxall 2011). During the 1980s and 1990s, Wall's extended its distribution channel to include a set of dedicated distributors – eventually it gained about 50% market share in the distribution of impulse products (Vella and Foxall 2011).

³⁶³ Interestingly, Total Investments, Barnwoods, and Embisco were joint ventures with Glacier, the only other organisation in the market that had a relatively very large-scale operation to reap the greatest benefits of scale economies.

performance during ice cream season and especially during summer³⁶⁴. Thus, off-season, the manufacturer experienced a relatively high level of deprivation of sales and profits.

Consider now the effects of seasonality and the weather on these supply contingencies. Seasonality operated to regulate the incidence on patterns of reinforcement by functioning in a manner of an intermittent interval arrangement analogous to a relatively *fixed interval schedule of reinforcement*³⁶⁵. The combination of the effects of seasonality on consumer demand and the short shelf life of the product constrained the setting scope faced by Wall's by reducing the range of possible behaviours as just described. These environmental conditions functioned to (a) qualitatively and quantitatively increase the effectiveness and the incidence of such punishers as the relatively high costs of maintaining the cold value chain and an increasingly large idle capacity (among the more significant punishers faced by Wall's) and (b) qualitatively and quantitatively decrease the effectiveness and the incidence of sales and profits as reinforcers.

Several attempts were made to make sales more predictable and/or less variable (hence, negative reinforcement). Such escape-avoidance responses included improvements in weather forecasting, improvements in marketing research techniques and market information to better identify marketing opportunities³⁶⁶, product improvements and advertising to make certain ice creams less susceptible to the vagaries of the weather and seasonality (e.g., take home products were less sensitive to these contingencies in contrast to impulse items), and the routinization of channel and consumer purchases for more stable and predictable sales streams via freezer and outlet exclusivity (also leading to improvements in planning in production, distribution, and raw material purchasing).

Besides being virtually unpredictable, fluctuations in weather were such that summer variations led to wide and unpredictable daily and weekly sales: total ice cream revenues in one week could be half or double those of the

³⁶⁴ Refer to the Ice Cream Report (1979, §25).

³⁶⁵ See Appendix 5, Section A5.2.3.

³⁶⁶ See Appendix 5, Section A5.2.2.

following week and variations in individual product sales were substantially greater. One or more consecutive bad seasons had the potential for severely straining sales and profits given the sensitivity of purchase and consumption patterns to weather variation. Besides, warmer weather occasioned a higher rate of approach among consumers towards ice cream and, thus, sales, during good seasons soared. The surge in sales caused surges and shortages in supply underscoring the punishing effects of an inability to spread production more evenly throughout the year and accumulate stock during the winter months³⁶⁷. Good seasons prompted timeliness as an important factor governing production and distribution. On these counts, climatic conditions functioned analogously to a *variable interval schedule of reinforcement* because the amount of time that elapsed between one reinforcer (sales and profits) to the next varied according the vagaries of British weather. Reinforcers occurred more frequently during good summers than they did during bad summers. This also demonstrates how environmental conditions functioned to regulate the quantity and quality of the patterns of utilitarian and informational reinforcement and punishment (sales, profits, incidence of costs, market share, relative achievement of scale economies) adding the incidence of costs (punishers) while decreasing the levels of sales (reinforcers) during bad weather years and vice versa during good seasons. In either case, the salience of punishers and reinforcers was increased and related behaviours emitted. For example, specifically in good seasons and generally during the summer, Wall's hustled to quickly reap sales and profits. Setting scope was also effected by weather by imposing such conditions as timeliness in distribution to avoid shortages.

Over its learning history, Wall's behaviour came in direct exposure to the *actual combined* effects of these contingencies on the business and thus developed sensitivity to the patterns of reinforcement and punishment arising therefrom. Appendix 5 demonstrates the enduring nature of these contingencies to the extent that the combination of events gained regulatory dimension in the presence of Wall's personal variables and governed the behaviour of Wall's rendering it relatively predictable as the interpretation moved from the first generation-situation to the second. The predictability is exemplified by (a) the extent of demand variability and (b) the degree of

³⁶⁷ See also Appendix 5, Section A5.2.3.

competitive encroachment achieving motivating function during the first and the second generation-situation respectively and the behavioural emissions occasioned (technical progressiveness, rationalisation, capital expenditure, product development and innovation, market research and development) echoing all the acquired and reinforced expansionary efforts emitted in the past.

These conditions are also clear examples of enduring selective criteria imposed by and requiring resolution by the emissions of Wall's. These criteria endured as natural contingencies and their effects were indirectly selected for as rules by virtue of the fact that the ice cream industry remained and grew. Escape-avoidance behaviours attempted to reduce the negative effects of these natural contingencies (for example, ultimately, the shelf life of individually wrapped ice cream was extended to between six and twenty-four months alleviating the stock accumulation problem (Vella and Foxall 2011). However, the contingencies were stable features within the environment regulating the behaviour of all incumbents as rules. In conclusion, it is also clear that the external contingencies functioned in a manner to *positively* and *negatively* reinforce the business model of Wall's (as internal rules regulating behaviour) and *require* such large-scale operations as a route to reap the benefits of mass purchase and consumption.

The discussion supports three propositions and suggests a new working hypothesis for future research (Figure 107).

Figure 107 – Retained Research Proposition 8 as Originally Defined in Chapter 4 (Section 4.3.2B) and Additional Working Hypothesis

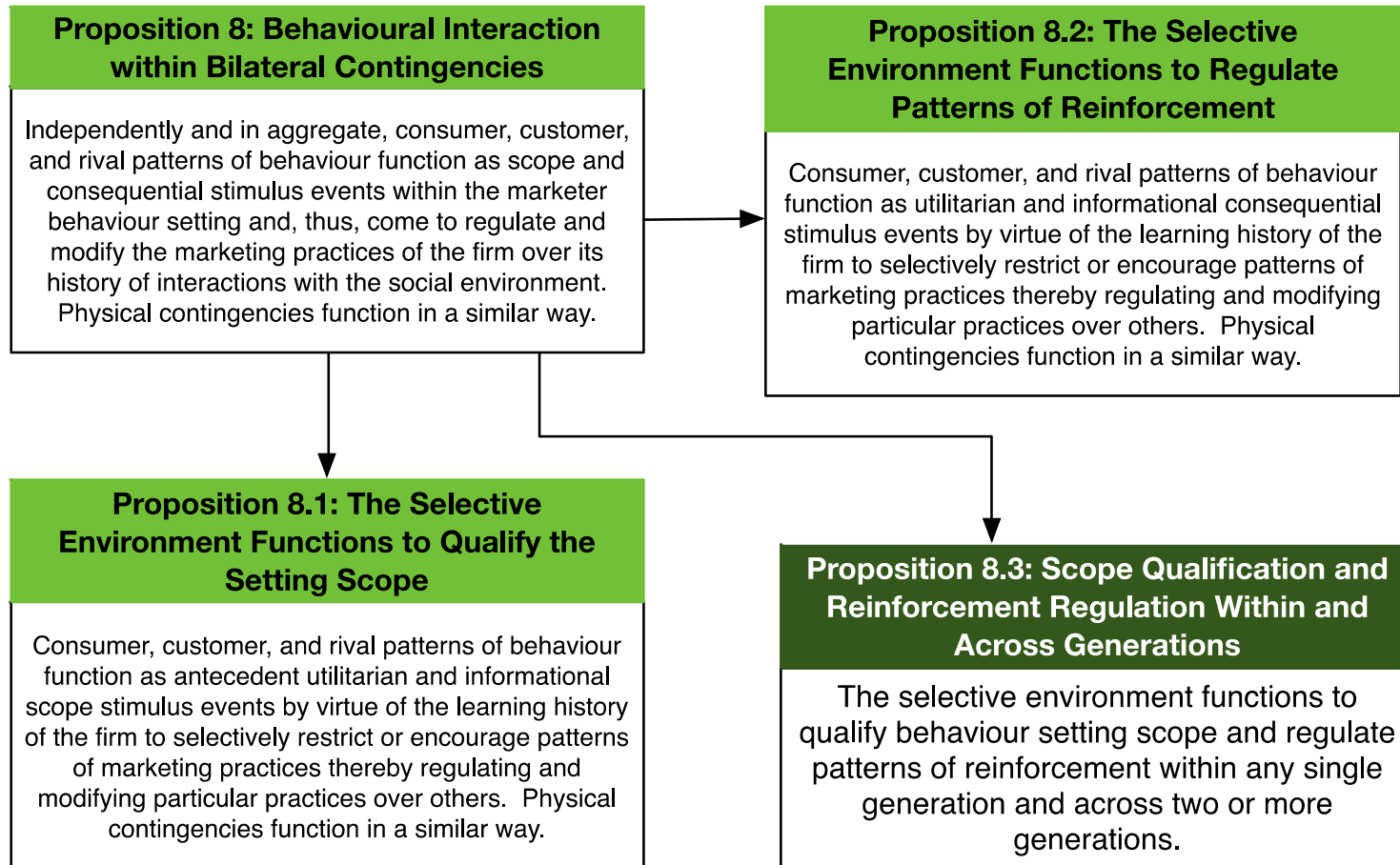
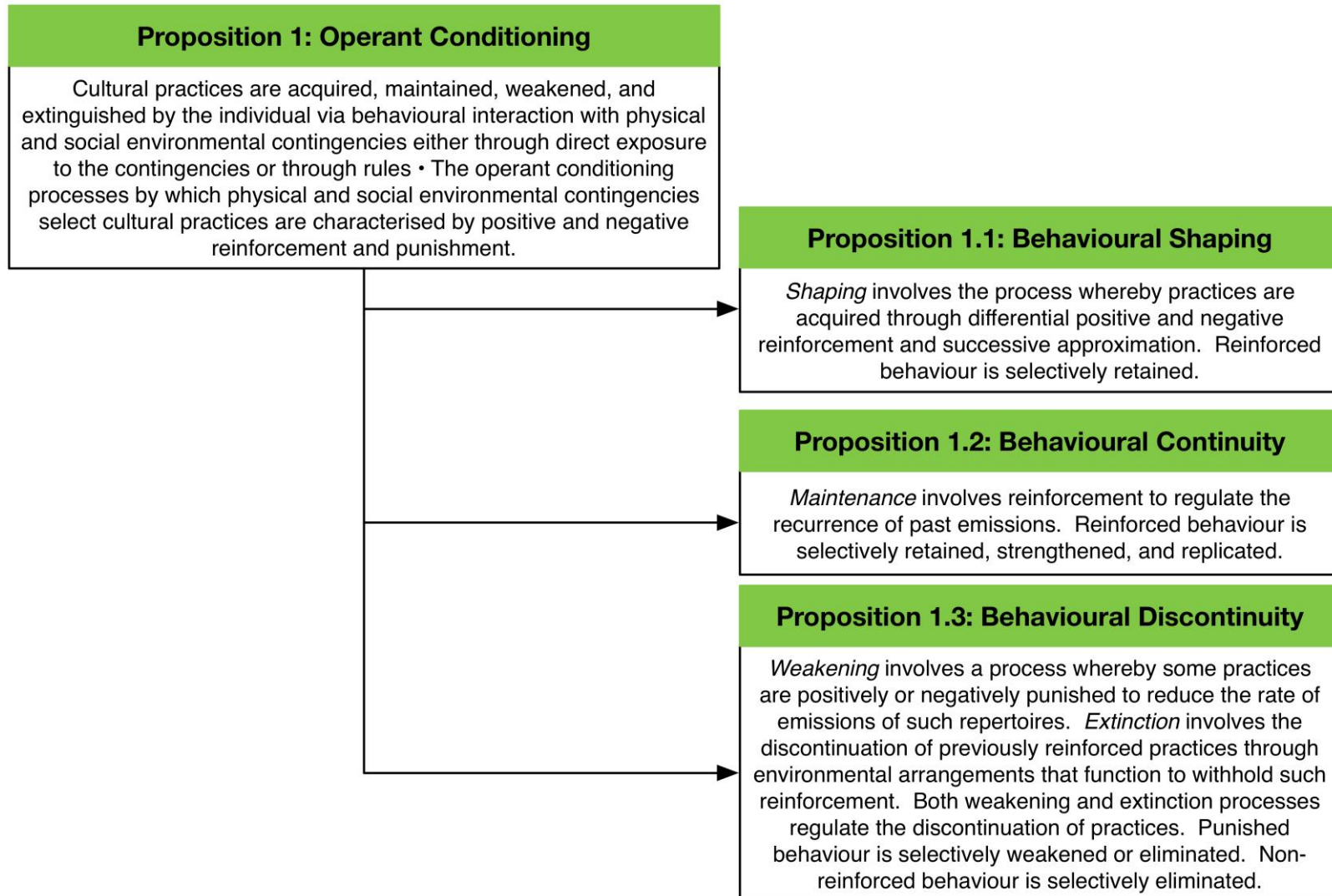


Figure 108 – Central Research Proposition 1 as Originally Defined in Chapter 3 (Section 3.3.1)

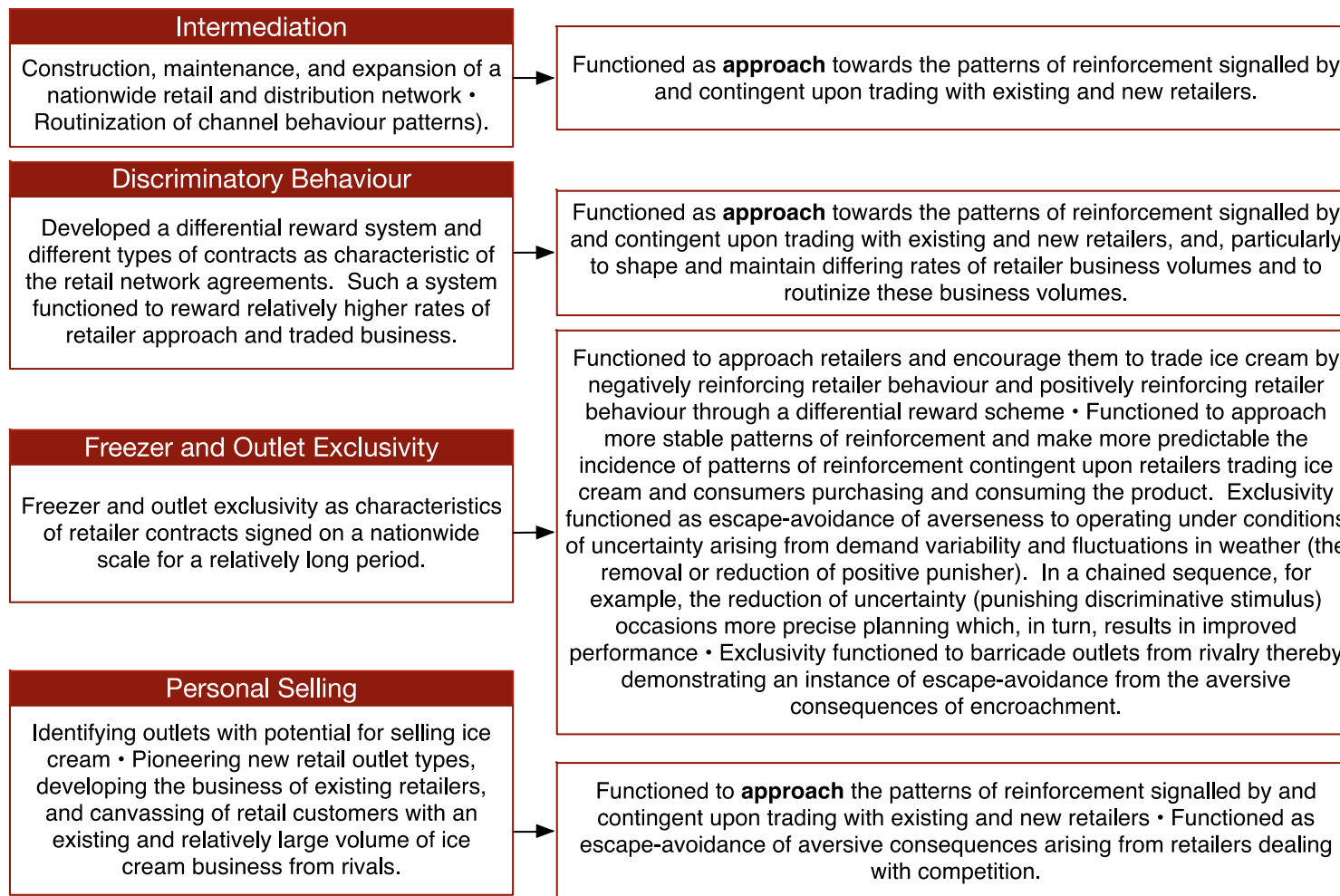


5.3.4 Shaping, Continuity and Discontinuity

Skinner hypothesised three main processes as being causally involved in the acquisition (*differential reinforcement, successive approximation*), continuity (*reinforcement*), and discontinuity (*punishment, extinction*) of behaviour. These were adopted as central research propositions to test the applicability of the natural selection-operant conditioning analogy in characterising the evolution of Wall's marketing practices and, thus, provide a basis for evaluating the viability of Selection by Consequences in research (Figure 108). Figure 109 and Figure 110 summarise the main repertoires of Wall's and its reinforced practices categorising behaviour in terms of response classes – approach and escape-avoidance to patterns of net reinforcement or patterns of net punishment respectively.

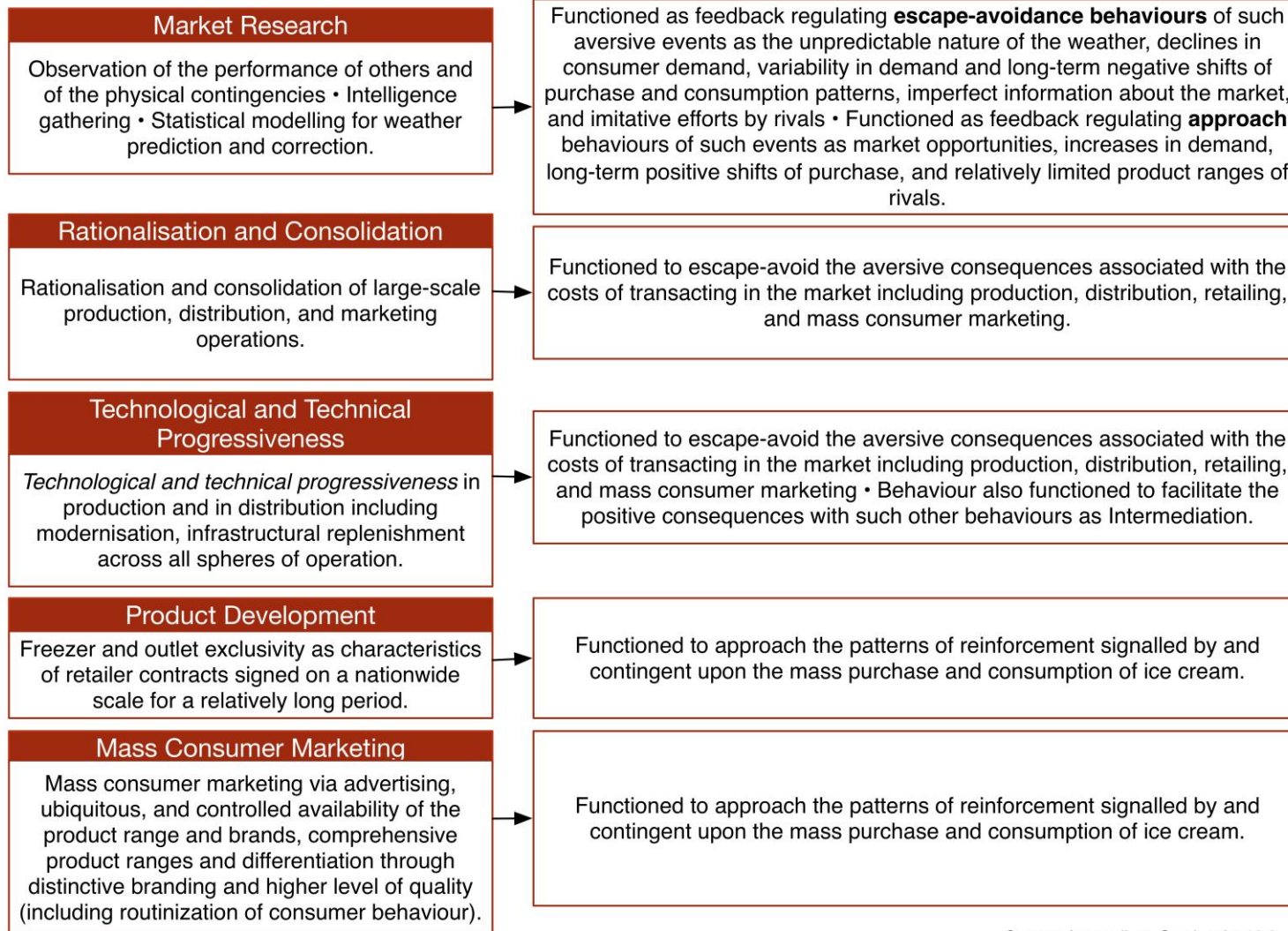
The evidence and the interpretation clearly demonstrate how increases or decreases in quality and quantity of consumer and retailer behaviour terminating in exchange (i.e., sales volumes and value, feedback on performance) positively reinforced or positively punished the marketing practices of Wall's throughout its history. These factors shaped and maintained such repertoires as intermediation, personal selling, discriminatory pricing, exclusivity, market research, and intelligence gathering. Wall's regularly and consistently emitted these practices to produce sales, profits (utilitarian), increases in market share, and market leadership (informational). Over time, increases or decreases in consumer and retailer demand occasioned those practices typically associated with increases in sales, profits, and market share and leadership retention. Indeed, during times of more fierce competition (positive punisher) Wall's increased the intensity of emission of these repertoires. These emissions were *selectively retained* (these practices appeared to have been positively and negatively reinforced).

Figure 109 – Topography and Function of Reinforced and Punished Practices Emitted by Wall’s Directed Towards Retailers



Source: Appendix 5, Section A5.10.2

Figure 110 – Topography and Function of Reinforced and Punished Practices Emitted by Wall's



Source: Appendix 5, Section A5.10.2

Similarly, the costs of producing and supplying ice cream among a set of rivals functioned to positively punish all of the practices emitted by Wall's. Continually expanding the retailer network to capture greater volumes of transactions through persistent rationalisation, technological progressiveness, and capital replenishment functioned to reduce the impact of these costs. Typically such emissions generated improved return on average capital employed, increasing scale economies in production, distribution, and marketing and capacity utilisation and opportunities for deterring encroachment (utilitarian and informational punishers). In times of opportunity and threat, Wall's increased the intensity of emission of these largely negatively reinforced repertoires. Such emissions were selectively retained.

Increasing competitive encroachment had similar positively punishing effects. The emissions that functioned to reduce the aversive consequences of such encroachment included product development, intensified intermediation and personal selling, and, further rationalisation/technological progressiveness to reduce the impact of sales on the business and offer more competitive pricing³⁶⁸. Such emissions were selectively retained.

The continuity and maintenance of behaviour involved positive and negative reinforcement to regulate the recurrence and replication of past emissions. Retained practices were *adaptive* in the sense that they increased in relative importance in the repertoire of emissions by Wall's and seem to have conferred advantage by a generally increasing or stabilising sales, profits and market share.

There is evidence with respect to shaping through differential reinforcement – for example, the acquisition and emission of practices more appropriate to satisfying the reinforcement criteria governing members of the grocery trade, the acquisition of very broad and comprehensive product ranges as a precondition to being a national manufacturer, not offering exclusivity to the larger groceries, and, market expansion through increasing degree of

³⁶⁸ Decreasing rates of competitive encroachment were inferred from the narrative rather than observed directly.

intermediation within the traditional trade to the point of the creation of the grocery trade³⁶⁹. The gradual introduction of broader and comprehensive product ranges may be interpreted in terms the gradual acquisition of behaviour through successive approximations spanning between 30 to 40 years. However, the data is not detailed enough to provide a deeper interpretation. It was difficult to ascertain, for example, which practices (if any) were not reinforced and which processes were entirely novel. All that is known is that originally Wall's had a very narrow product range and in time this product range expanded to include a relatively comprehensive range around the 1950s and 1960s; i.e., the original and the terminal repertoire shared topographical properties that were retained through reinforcement via increased sales and profits. Thus, an account that follows the process precisely outlined in the EAB could not be constructed in similar detail. The importance of triangulation across multiple sources is noted³⁷⁰.

Positive punishment selectively eliminated the use of tricycles, mutuality-plus-exchange relations with consumers, and unsuccessful products³⁷¹. No instances of negative punishment were identified. In comparison to the depth of the investigation by the Commission, no *detailed evidence* on selective elimination (discontinuity of behaviour through punishment) was found, the main problem being a lack of narrative evidence describing why such practices were stopped. This is probably due to a bias in the Commission's investigation in

³⁶⁹ Practices more appropriate to satisfying the reinforcement criteria governing members of the grocery trade included the introduction of discounting to the trade, the introduction of Soft Scoop as a bulk product that could be easily retailed in groceries, the increased focus on bulk and multi-packs products, rationalisation to sustain discounting and maintain more competitive prices (see Appendix 5, Section A5.4.5.). It should be noted that although the Marketing Firm does not predict the topographical nature of the strategic routes taken by a given firm, it has been assumed that the firm conforms to *meliioration* (Herrnstein 1997; Foxall *et al.* 2007): given two mutually exclusive strategies each generating different patterns of reinforcement, behaviour will be allocated to those reinforcers with the relatively higher pattern (Vella and Foxall 2011). The evidence generally supports this assumption. In addition, the evidence also shows that between two mutually exclusive strategies each generating different patterns of punishment, behaviour will be allocated to those reinforcers with the relatively lower pattern.

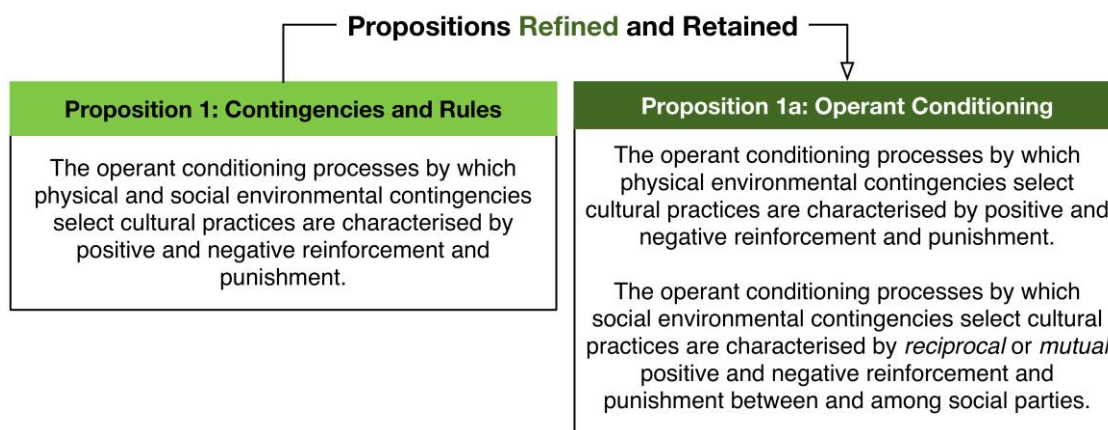
³⁷⁰ Chapter 6, Section 6.4.3 examines this point.

³⁷¹ The evidence suggests that using tricycles and maintaining mutuality-plus-exchange relations with consumers eventually became maladapted and were filtered out by their excessive cost burden on Wall's (punishment). Presumably, unsuccessful products did not generate enough sales to justify keeping them as part of the product portfolio. Hence, a lack of sales and profits (net punishment) filtered out the provision of said products.

exploring all and only those practices existing during the time that may have contributed to the monopoly situation³⁷².

Therefore, although all the propositions are retained for future study, only proposition 1.2 finds strong support. Partial support is found for Proposition 1.1 and 1.3 (Figure 22). In addition, with respect to Proposition 1 and given the earlier arguments with respect to reciprocity, refinements are suggested (Figure 111).

Figure 111 – First Refinement to Proposition 1



The evidence with respect to outlet exclusivity is inconclusive because the narrative in the report does not provide much detail and Vella and Foxall (2011) indicate the re-emergence of the practice.

5.3.5 Social Transmission

In Skinner’s account, socially-mediated reinforcement and punishment contingencies facilitate the transmission of new and existing cultural practices, i.e., practices are replicated and retained through verbal behaviour via rules that describe the contingencies or specify injunctions (e.g., laws) and/or through non-verbal behaviour (Skinner 1966b, 1969, 1971, 1981, 1984b, f, d, 1986, 1989b).

Appendix 5 presents very clear examples of Wall’s practices functioning to shape, maintain, and discontinue aggregate retailer trading and consumer purchase behaviour patterns through positive and negative reinforcement and through positive punishment. As predicted by the Marketing Firm (Foxall

³⁷² Chapter 6, Section 6.4.4 examines this point.

1999b; Vella and Foxall 2011), the behaviour of Wall's functioned through marketing mix configurations that operated to regulate the patterns of reinforcement and punishment maintaining retailer and consumer behaviour and to qualify behaviour setting scope. In so doing Wall's marketing practices deterred or encouraged rival encroachment³⁷³.

Exclusivity increased in relative importance within Wall's marketing repertoire – the feature was positively and negatively reinforced. In replicating the practice across an increasing number of traditional trade retail outlets, social transmission seems to have proceeded through a process of reinforcing and punishing retail trading behaviour by Wall's. This increased the proliferation (retail penetration and brand take up among consumers) of Wall's brands and of the practice of exclusivity among the existing retailer population. Therefore, the increase in the relative importance of exclusivity within the existing population of traditional trade retailers was shaped and maintained and, ultimately, overshadowed other contractual forms within the segment³⁷⁴.

The increase in market share of Wall's brands among consumers demonstrates similar processes occurring at the purchase and consumption level of analysis with brands (as reflections of consumer habits) increasing in popularity among consumers at the expense of others. Exclusivity, on the other hand, did not replicate extensively within the grocery trade³⁷⁵.

Social transmission in this case did involve reinforcement and punishment supporting Skinner's view.

³⁷³ Appendix 5, Section A5.4.5C provides an example of these points through a description of the contractual relations of Wall's. See also Section 5.2.1 of this chapter.

³⁷⁴ Besides data relating to sales, profits and market shares, there is little quantitative evidence to show the growth in and the magnitude of the proliferation of manufacturer supplied freezer cabinets to retailers. According to the Ice Cream report, (a) in 1976 there were 85,000 small retail outlets out of a total of 150,000 (Appendix 5, Section A5.2.5), (b) in that year Glacier supplied 55,000 of total outlets while Wall's supplied 57,760 (Table 13 in Appendix 5, Section A5.2.5 on page 521), (c) Wall's supplied an estimated total of 23,000 outlets in 1939 (Table 13 in Appendix 5, Section A5.2.5 on page 521), (d) 26 manufacturers supplied nearly 126,000 freezers by 1978 (Appendix 5, Section A5.6.2), and, (e) Glacier and Wall's had an installed freezer cabinet base of 56,750 and 59,000 respectively by 1978 (Appendix 5, Section A5.6.2). These accounted for 45% and 47% of total for Glacier and Wall's respectively.

³⁷⁵ See Appendix 5, Section A5.4.3 in conjunction with Section A5.4.4.

A. Imitation and Observation

The original expectation during research design was that no evidence on modelling, observation, and imitation would be found³⁷⁶.

Surprisingly, the report has several explicit and implicit examples of these phenomena. For example, there is evidence of Wall's observing the performance of others and of the physical contingencies comprising its behaviour setting to the extent that organisation engaged in intelligence gathering to measure market performance, identify market opportunities, acquire technological skills, and, mitigate against the risks of the weather³⁷⁷.

Given this evidence, it is important to refine the definition of informational reinforcement (Figure 112).

Figure 112 – Refined Operational Definition of Informational Reinforcement

Informational Reinforcement

Informational reinforcement and punishment is the process regulating the rate of future emissions by the firm through positive and negative feedback on the performance, the level of achievement, and the appropriateness and accuracy of such performance of the firm (Foxall 1996, 1997, 2005, 2010a; Vella and Foxall 2011, 2013) and on prevailing physical and social contingencies

³⁷⁶ Refer to footnote 146 in Chapter 3, Section 3.3.1 on page 117.

³⁷⁷ The history of Glacier records similar behaviour. Imitation by secondary manufacturers of Wall's successful products also implies observation. For an account on imitation by Glacier and the secondary manufacturers see Appendix 5, Section A5.4.3. Observation and imitation is also implied with respect to the origins of exclusivity at retail – the evidence tentatively suggests that Wall's originally acquired the behaviour through imitating Glacier. Some imitation may have occurred throughout the retail channel as outlets observed the behaviour of similar organizations aiding to some unmeasured extent the proliferation of exclusivity. Rival manufacturers also seem to have observed and imitated successful exclusivity practices to the extent that the relative importance of the strategy among the manufacturer population grew until 26 organizations engaged in exclusivity at retail by 1977. One social transmission mechanism involved seems to be observation and imitation. The importance of the strategy remained and grew with the larger organizations (including Treats) being unable to compete effectively on a nationwide scale without exclusivity in their repertoire (Vella and Foxall 2011). Unfortunately in these last respects there is insufficient evidence to provide a deeper analysis beyond the statement that imitation of Wall's successful products by rivals and of exclusivity seems to have been successfully positively reinforced. The case of Glacier and its close following of Wall's (see especially Appendix 5, Section A5.2.1 on the case of MO) is another particular case of imitation. And, imitation would appear to imply the modelling of Glacier's behaviour by its management to copy and replicate the success of Wall's.

Redefinition begins to recognize the importance awarded to information flows (especially in respect to replication and social transmission) within evolutionary economics (e.g., Metcalfe 2005; Hodgson and Knudsen 2010) and to incorporate Skinnerian views on observation, modelling, imitation, rule creation and problem solving more deeply.

The evidence, therefore, also leads to a second refinement to Proposition 1 (Figure 22) to account for the acquisition of behaviour through imitation and observation (Figure 113).

Figure 113 – Second Refinement to Proposition 1

Proposition 1.4: Imitation and Observation
Behaviour is also acquired through shaping, observation, imitation, and modelling processes.

5.4 An Operant Analysis of Problem Solving in Natural Settings

The previous sections have demonstrated the viability and the usefulness of deriving an interpretation of the evolutionary history of marketing practices cast in the language used by behaviourist researchers and in terms of the functional relations discovered in the EAB. The degree of complexity, as a fundamental characteristic of the selective environment, emerges supreme (c.f. Skinner 1971). This supports continued use of the BPM as interpretive aid to understand real world behaviour.

The third part of the analysis and interpretation investigates problem solving as a facet of Skinner's (1981) analogy and examines the adequacy of the characterisation provided by the SMC framework.

The process of natural selection is frequently likened to problem solving or trial and error learning. In addressing this dimension, Skinner casts the selective environment in terms of physical and social contingencies and the problem in terms of either the appearance novel contingencies or changes in existing contingencies both rendering previously acquired repertoires

significantly less effective in navigating the environment to generate reinforcement³⁷⁸. Novelty or changes in the contingencies occasion the emission of a series of variations. These variations may or may not be more effective to resolving prevailing contingencies. Skinner’s characterisation of variation as non-prescient exploratory behaviour was considered adequate as a first approximation for exploring the natural selection-operant conditioning analogy (Figure 114)³⁷⁹.

Figure 114 – Research Proposition 6 as Originally Defined in Chapter 4 (Section 4.3.1B)

Proposition 6: Variation in the Practices of the Firm
<p>Variation in the practices of the firm is operationalized as ranging from slight to substantial departures from recurring and stable practice and recognisable as:</p> <ul style="list-style-type: none"> (1) increases or decreases, appearance or disappearance of marketing practices and related features • (2) Changes in the topography of the various marketing practices emitted by the firm and related features • (3) Changes in the apparent function of the various marketing practices • (4) Search or exploratory behaviour (including conducting research and maintaining market intelligence) followed by other instances of variation.

Consequences, described in terms of producing environmental effects that contribute to the effective resolution of the prevailing contingencies, reward behaviour while other consequences (those which do not effectively resolve the contingencies) penalise the behaviour that generated them (Skinner 1981) or, as is the case of differential reinforcement, do not produce reward.

Following the same route, the SMC defines the market as a particular behaviour setting summarised as a particular set of physical and social environmental contingencies (Foxall 1999b). Social contingencies involve reciprocity and the mutual reinforcement and punishment of the parties (Foxall 1999b; Vella and Foxall 2011) as distinct from physical contingencies. The SMC further recognises that selection is transient “groping toward its temporary

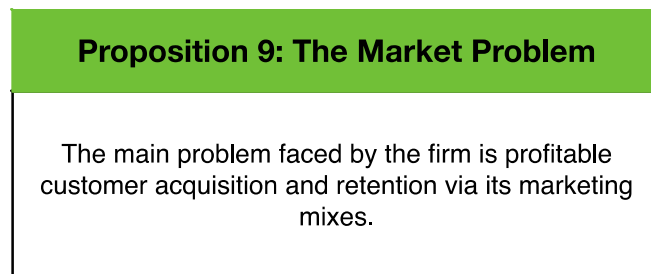
³⁷⁸ In Skinner (1981) there is no particular distinction with respect to the nature of the problem – improving a tool (clearly related to a physical contingency) seems to be the same as educating a child (clearly a social contingency).

³⁷⁹ See Chapters 3, Section 3.3 especially Section 3.3.2.

target” and “posing new and unfamiliar problems to firms” so that practices are “always maladapted” to prevailing environmental conditions – “for example, out of date because of learning and adjustment lags, or “unstable” because of ongoing experimentation and trial-and-error learning” (Nelson and Winter 2002, p. 26). Appendix 5 and the interpretation so far attest the transient nature of selection processes, which arise because the causal sequence underlying the processes is dynamic and non-linear.

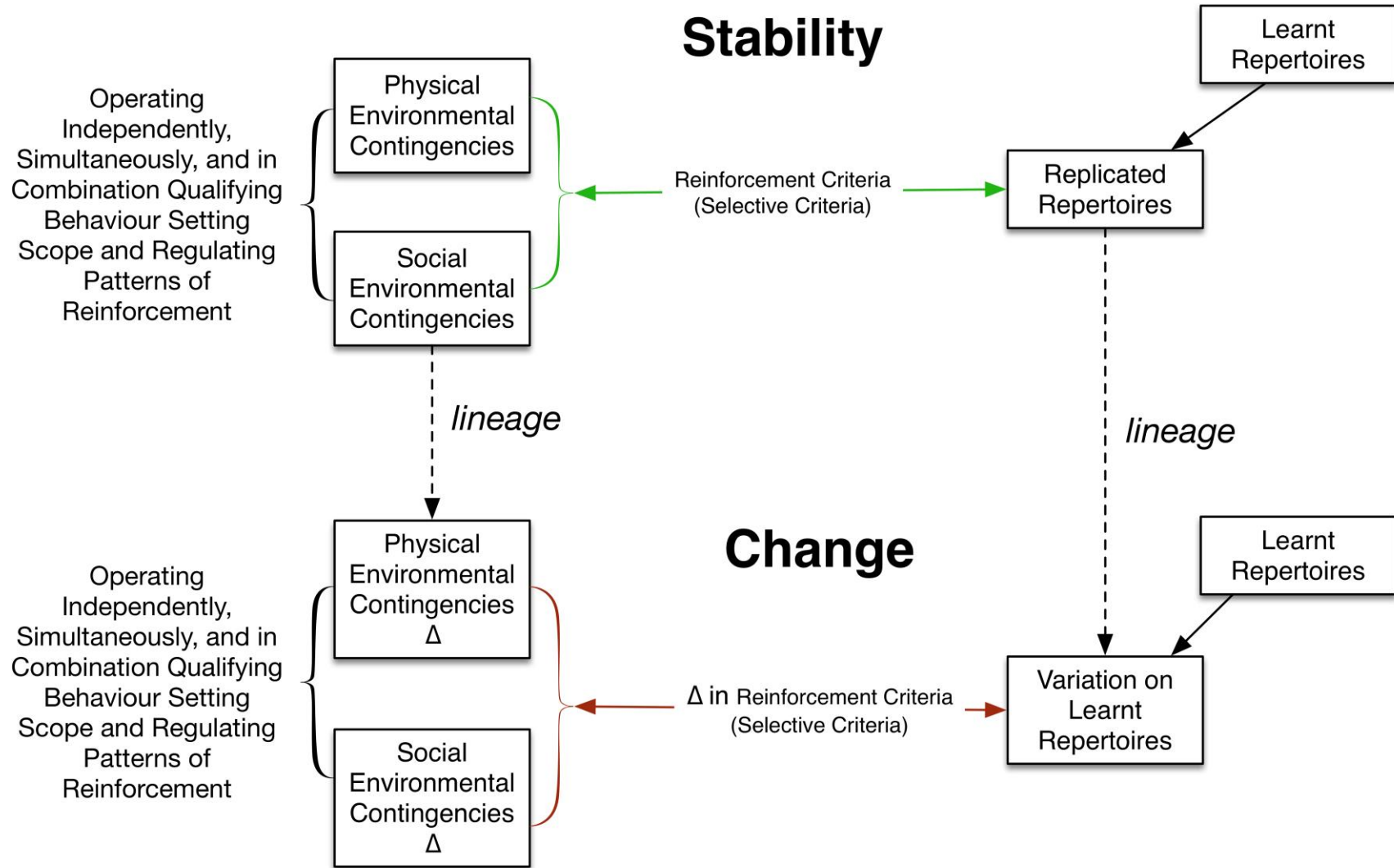
Figure 115 recalls the research proposition defined by the SMC with respect to the problem posed by the market.

Figure 115 – Research Proposition 9 as Originally Defined in Chapter 4 (Section 4.3.2C)



The proposition was derived from Foxall’s (1999b) assumption that firms exist to market and from the non-trivial problem of acquiring and retaining customers profitably in a situation where the major cost to the firm is “discovering the rules under which it is operating” (Foxall 1999b, p. 228) given the moving selection target. The SMC interprets the effectiveness of learnt behaviour in resolving prevailing contingencies in terms of the analogy between criteria of reinforcement and the selective criterion, which may have been implicit in Skinner’s cultural evolutionary analogy (Figure 116).

Figure 116 – Conceptualising Stability and Change in Problem Solving



Section 5.4.1 discusses the changing nature of the unique market problems faced by Wall's and its history of resolving these problems to provide a redefinition of the market and to challenge the central assumption of the function of the firm within the Marketing Firm. Section 5.4.2 discusses variation in terms of extended problem solving and the Accomplishment contingency category as found in the BPM literature.

5.4.1 Characterising Problem Solving in the Market

A. The Problem Faced by Wall's

Appendix 5 highlights two unique inter-related *generations* within the history of Wall's and the ice cream industry. Both generations are unique due to the central market problems the firm tackled in its impressive rise to dominance. The first generation or distinct *marketer situation* comprises events running between the early 1920s until circa 1969³⁸⁰. The second *generation-situation* relates to events between 1970 and ca.1978³⁸¹.

During the first generation-situation, the primary problem faced by Wall's may be described as one of constructing a nationwide refrigerated storage and transportation infrastructure that generated and sustained large-scale volumes of retailer and consumer exchange transactions in ice cream given the conditions outlined in Figure 117. Simply put, the primary problem was to generate large-scale downstream push and upstream pull.

³⁸⁰ Section A5.3 of Appendix 5 covers the first generation-situation. Single generations were distinguished due to the theoretical requirement inherent to the production of evolutionary explanations: the need to distinguish between what occurs during the lifetime of an individual and in a history that transcends a single lifetime. The concept of a marketer situation followed the distinction within the BPM to delineate a specific empirical episode of the interaction of the firm and elements within its environment. A series of two concatenated situations were conceptualised to characterise developments within and evolution across generations. The cut-off dates were arbitrary and roughly coincided with the changing nature of the market problem faced by Wall's. As discussed in Section 5.2.1, the stages of the PLC were helpful in refining these dates.

³⁸¹ Section A5.4 of Appendix 5 covers the second generation-situation.

Figure 117 – Conditions Prevailing in the First Generation-Situation

Prevailing Conditions: Personal Variables
<ul style="list-style-type: none"> • The particular requirements of a large-scale manufacturing business model with nationwide coverage in contrast to manufacturing business models oriented around regional or local coverage • Related growth objectives that included emphasis on economies of scale in production, distribution, retailing, and marketing to consumers
Prevailing Conditions: Physical Contingencies
<ul style="list-style-type: none"> • The seasonality of ice cream trade lasting for only a 6-month period of frantic activity in any year • The vagaries of British weather that rendered volatile the demand for ice cream and, thus, created an intense vulnerability to wild fluctuations in sales and profits during any given season • The nature of manufacturing, storing, transporting, and serving ice cream at relatively low temperatures • The gradual development of domestic and commercial refrigeration technology
Prevailing Conditions: Social Contingencies
<p>A fragmented retail trade comprised of a very large number of small retailers dispersed geographically all over the country and each ordering small amounts of ice cream at any time</p> <ul style="list-style-type: none"> • A non-existent frozen food distribution channel • A growing demand for increasingly more sophisticated ice cream products and an intensifying demand for variety among consumers • Rivalry largely unfelt with the exclusion of the mounting encroachment by Glacier and its merger and acquisition strategy <ul style="list-style-type: none"> • The need to deploy a storage and distribution infrastructure for maintaining ice cream at a consistently low temperature from the time the ice cream leaves the manufacturer to the point of purchase by consumers • The gradual proliferation of domestic and commercial refrigeration

Source: Appendix 5, Section A5.3

Exclusivity appeared early in the history of the mass production of ice cream³⁸². During the earlier period of the first generation-situation, exclusivity seems to have been a reasonable strategy given the absence of a nationwide *refrigerated and independently owned* retail channel infrastructure as a network of different routes to the expected net rewards contingent upon engendering mass purchase and consumption of ice cream. Without adequate storage at and transport to retail, nationwide mass consumption was not possible. By the end of the period, Wall's emerged a market leader with substantial investment in the market³⁸³.

In the 1970s, the second generation-situation, the market problem faced by Wall's and rivals was significantly different. Several environmental conditions changed to begin eroding the relatively large market share of Wall's and diluting its value proposition. The first signals of erosion appeared in the

³⁸² The earliest recorded date of Glacier being engaged in the practice in 1926.

³⁸³ Glacier was a relatively close second. The more conservative of the Commission's estimates suggests that by 1972 Wall's and Glacier held a 38.7% and 32.6% market share respectively. See Appendix 5, Section A5.7.1E.

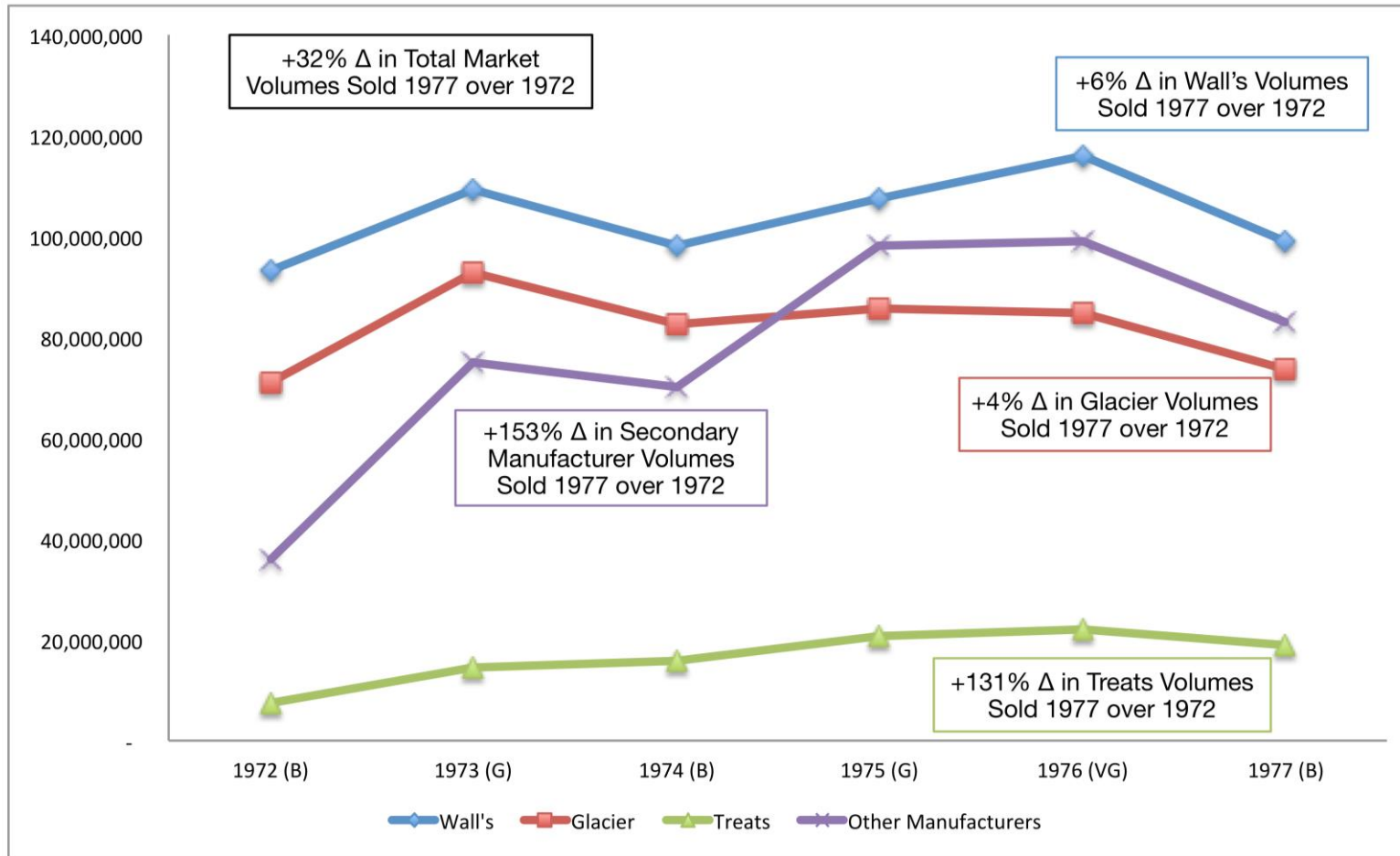
early 1960s when demand suffered a decline due to the imposition of a purchase tax in 1962 and a succession of bad weather years.

These changes included changes in patterns of consumer behaviour moving away from smaller neighbourhood stores towards supermarkets, the emergence of frozen food wholesalers, the rise of a relatively homogenous grocery retail segment governed by different reinforcement criteria with respect to ice cream (e.g., sensitivity to price rather than to brands), the decline of the historically more prominent and lucrative retail sector, stagnation in certain important market segments, and, more intense and effective encroachment from smaller-sized competitors. Imitation of Wall's successful products and Glacier's tailgating became significant problems. When the fluctuations in sales volumes due to differences in the weather from one season to the next were factored out, Wall's experienced very little growth in the volumes of ice cream sold between 1971 and 1977 (Figure 118).

Thus, the major problem faced during the 1970s was related to: (1) maintaining existing large volumes and shares despite the negative downturns in its traditional segments, the increasing rival encroachment in an emerging market, and, relatively incommensurable reinforcement criteria in each segment which threatened the business; (2) generating variety and novelty to fuel real growth; and (3) further expanding the volumes of ice cream sold to sustain the significant investments of the past.

During the 1970s, exclusivity appears to have become a means for defending against significant pressures by competing manufacturers, and, for retaining a relatively predictable stream of revenue and profits to finance further development and to avoid the punishing consequences of maintaining hefty investments in production, distribution, and retailing infrastructure by reducing per unit cost incidence on the scale of operations and on return of capital employed.

Figure 118 – Sales Volumes of Ice Cream Sold (1972 to 1977)



Source: Appendix 5, Section A5.7.1B

B. The Market and the Problem Faced by the Firm

The empirically-based description of the two distinct but inter-related market problems faced by Wall's and its history of resolving these problem suggests reconsidering a refined definition of the market and a refinement in the central assumption of the function of firm within the Marketing Firm.

In an evolutionary analysis of markets, Loasby (2000) cites Ménard (1995) to propose the following definition: "A *market* is a specific institutional arrangement consisting of rules and conventions that make possible a large number of voluntary transfers of property rights on a regular basis, these reversible transfers being implemented and enforced through a specific mechanism of regulation, the competitive price system" Ménard (1995, p. 170)³⁸⁴.

Foxall (1999b) defines a market in terms of contingencies. Firms emerge to satisfy these contingencies through their various mixes, which engender and deter relative strengths in rates of customer approach and escape-avoidance respectively to result in some measure of profitable literal exchange while naturally attending to competition (Foxall 1999b; Vella and Foxall 2011, 2013)³⁸⁵.

With respect to the issue of profitable literal exchange, one of the most significant costs faced by the firm in using the market is "discovering the rules under which it is operating" (Foxall 1999b, p. 228). In operant terms, the discovery of such rules entails the non-trivial endeavour of understanding consumer, customer, and rival contingencies of reinforcement, extracting descriptions and injunctions in an attempt to summarise them, and programming and refining marketing stimuli to present them in the marketplace in a way as to engender continual flows of approach behaviours with increasing

³⁸⁴ Loasby (2000, p. 297) does not utilise the entire definition of Ménard (1995) and omits the latter phrase, i.e., "these reversible transfers being implemented and enforced through a specific mechanism of regulation, the competitive price system" Ménard (1995, p. 170). Here, the full definition is applied to drive home the point that the competitive system does not simply rely on price but on the entire marketing mix.

³⁸⁵ Foxall (1999b) notes literal exchange as being a product of one of the institutional rules that characterise markets.

likelihoods of purchase behaviour given other prevailing contingencies³⁸⁶. Ménard's (1995) definitional emphasis on capturing a *large* number of literal exchange transactions on a regular basis implies the associated problem and costs of defining marketing mixes that generate a critical mass of new and repeat customers that also guarantee a satisfactory profit *and* return on investment (Loasby 2000).

These dimensions summarise the essence of the environmental problem that marketing mixes are designed to address. And, therefore, the extent to which designed marketing mixes *actually* generate profitable literal exchange within a given market becomes the environmental consequence *par excellence* for which mixes are selected.

The definition of Foxall (1999b) and the view he presents of the firm suggests one necessary entrepreneurial dimension of the firm in uncovering *existing* rules that govern consumer and channel behaviour, following *these* rules, and modifying marketing mixes to approximate prevailing consumer and channel contingencies. However, what of rule creation? What of novelty? What of the delivering customer value by creating needs and wants (Drucker 2007; Kotler *et al.* 2013)? What of the creation of customers (Loasby 2000; Drucker 2007) and markets (Loasby 2000; Drucker 2007; Pitelis and Teece 2009) to broaden the scope of the market and benefit from novel opportunities for customer acquisition and retention (Loasby 2000, p. 302)?³⁸⁷ These latter dimensions are readily apparent in the behaviour of Wall's.

Loasby (2000) emphasises the entrepreneurial role of firms in market creation, i.e., making substantial investments in both creating and then administering a system of rules and conventions that function to overcome the significant barriers to trading and reducing the transaction costs of

³⁸⁶ These difficulties are generated as a corollary of Foxall's generic discussion on the complexity of identifying and interpreting the situational determinants of economic behaviour within affluent markets (see, for example, Foxall 1996b, 2010b).

³⁸⁷ Pitelis and Teece (2009) and Loasby (2000) concur that the revolutionary characterisation of Coase (1937) in *The Nature of the Firm* appears to assume, albeit implicitly, the pre-existence of markets. This interpretation probably emerges from Coase's (1937) claim that the firm supersedes the market. Arguably, Foxall (1999b) seems to make a similar assumption when he argues that firms emerge to circumscribe some of the contingencies of the market rather than circumvent or suppress them (cf. Coase 1937, 1988b).

consumers³⁸⁸. He builds a compelling case for regarding the process of market creation as a process of the acquisition and the retention of new customer relationships. These market relationships are mutually beneficial and reciprocal: on the one hand, they reduce the transaction costs of the firm and increase return on investment (especially as a large volume of transactions becomes possible), and, on the other, satisfy customer problem solving behaviours via the attributes of the product and other elements of the marketing mix through routinization of certain purchase and consumption patterns. Variations in consumer behaviour encourage firms to vary their offerings and introduce novelty. Firms also introduce variations, which may not necessarily be in response to variations among consumers. Innovations may emerge from these dynamic reciprocal interactions. Therefore, the entrepreneurial role of market creation is a central mechanism for generating variation and novelty (Loasby 2000)³⁸⁹.

As it stands, the Marketing Firm neglects the entrepreneurial role of the firm in creating markets.

Drucker (2007) provides a more apt description that, when considered in the light of the evidence, of Loasby's (2000) arguments, and the idea of economising on market transaction costs (Foxall 1999b; Vella and Foxall 2011, 2013), leads to a more complete description of the reason why firms emerge³⁹⁰.

³⁸⁸ Loasby (2000) uses the example of two barriers to trade, namely, marketers not knowing the needs and wants of consumers, or an absence of contact and communication between buyers and sellers. Transaction costs to consumers are significantly higher when these barriers are present and markets are absent. Loasby (2000) provides an apt description of a situation characterised by the absence of markets or "initial obstacles to trade": there is "no contact between buyer and seller, no knowledge of reciprocal wants, no agreement over price, the need to exchange custody of goods, no confidence that goods correspond to specification, and no confidence about restitution in case of default. The combined effect of all these obstacles interposes substantial transaction costs between the potential benefits to the purchaser and the direct costs of production; and the creation of a market within which these transaction costs will be greatly reduced is identified ... as a crucial entrepreneurial function" (p. 301). The ice cream market during the early stages of the PLC shared some of these characteristics.

³⁸⁹ As Appendix 5 demonstrates, the evidence on Wall's repertoires suggests a very long history characterised significant investments and recurring emissions in market creation and development, technical and technological progressiveness, rationalisation and consolidation orientated around constructing scale economies in all spheres of activity, continual replenishment, continuous product development, and the generation of novelty to acquire and retain a significant volume of retail customers and consumers.

³⁹⁰ The suggested reconsideration of the function of the firm, in terms of Drucker's (2007) assumptions with respect to the reason why firms emerge, renders the Marketing Firm less prone to the criticism of being tautological (see Foxall 1999b, p. 211; see Foxall 2011, p. 8)

Drucker (2007) argues that firms, as profit making organisations, exist “to create a customer” and the only two entrepreneurial function of firms are marketing and innovation (p. 33). Drucker’s understanding of marketing is defined in terms of a customer-centric philosophy that permeates the entire organisation. Innovation is cast in similar terms: Not confined to any particular department, firms introduce improvements and generate novelty continuously by creating new markets (e.g., introducing new products), introducing enhancements to their current product and service offerings (e.g., improved product designs), and by providing more cost effective solutions to the problems encountered by customers (e.g., through lower prices derived from improved managerial, production, and distribution techniques) (Drucker 2007)³⁹¹.

Marketing practices may be thus construed as empirical examples of problem-solving socio-economic practices evolving as imperfect resolutions to the relatively indeterminate problems posed by dynamic market environments. In this light, proposition 9 (Figure 115), the main problem faced by firms in the environment is creating, acquiring, and maintaining customers profitably, becomes less tautological, and is therefore retained.

C. Reinforcement Criteria

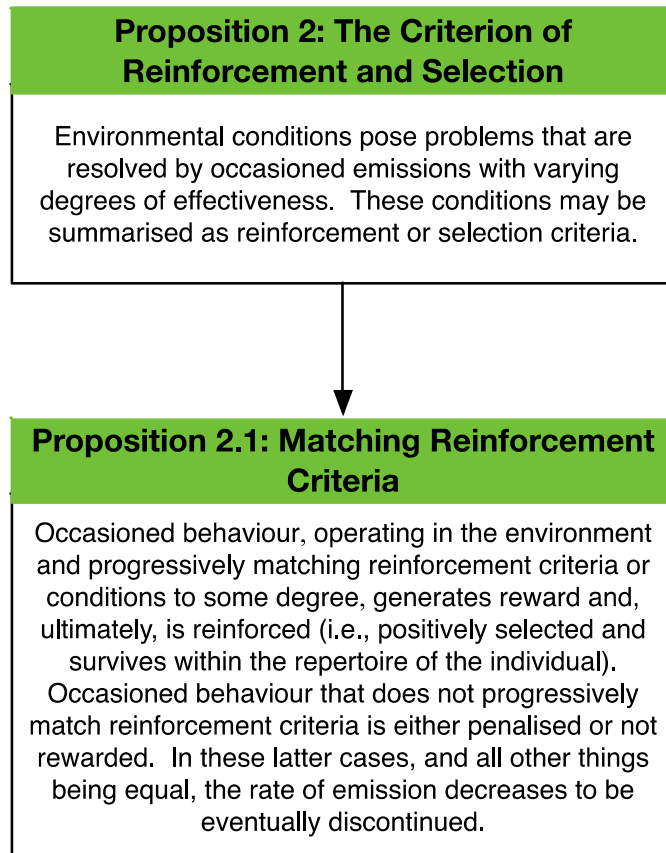
The *criterion for reinforcement* was defined as the set of environmentally-imposed conditions or requirements that behaviour must satisfy, to some degree, to generate reinforcement. The criterion is a standard against which performance is evaluated³⁹². Behaviour that roughly matches the reinforcement criterion is rewarded (i.e., positively selected and survive within the repertoire of the individual). Behaviour, therefore, is either relatively adapted or maladapted to satisfying environmentally imposed conditions. An analogy was drawn

³⁹¹ This theoretical characterisation fits the empirical description of Wall’s behaviour especially when its entire history is contrasted to that of its main rival. Glacier appeared to follow Wall’s lead rather than be pro-actively involved in successfully commercialising improvement and novelty (i.e., innovation). The organisation failed to respond more quickly to the emergence of the grocery sector and was relatively sluggish in devising a marketing mix specifically geared around the conditions particular to this market segment (contrast Appendix 5, Section A5.4 and A5.11).

³⁹² With respect to the evolution of human practices this point implies the importance of feedback and further supports the bifurcation of reinforcement to recognize informational as distinct from utilitarian reinforcers and punishers.

between reinforcement criteria and selection criteria³⁹³. Figure 119 highlights the propositions derived.

Figure 119 – Research Proposition 2 as Originally Defined in Chapter 3 (Section 3.3.2C)



The analogy between reinforcement criteria and selective criteria was very useful. A number of different criteria were unearthed (Figure 120). Although some of these criteria waxed and waned in their priority, *profitable literal exchange* remained the necessary (and generic) criterion that firms had to satisfy in order to produce patterns of reinforcement. The evidence supports both research propositions in Proposition 2.

³⁹³ The selective criterion is an integral part of socio-cultural evolution and refers to the requirements that the entity being selected must satisfy in varying degrees to be retained and, hence, continue and survive (Campbell 1969; Aldrich 1979; Van Parijs 1981; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). "Variations are the raw material from which the selection process culls those structures or behaviours that are most suitable, given the selection criterion" (Aldrich 1979, p. 34; Aldrich and Ruef 2006): a cold (the criterion) environment is hypothesised to result in an increased proportion of furrer and fatter mammals (Hodgson and Knudsen 2010, p. 35). With respect to socio-cultural evolution, however, such criteria are very difficult to identify (Campbell 1969, p. 75). The operation of competitive and market forces are among the possible candidates for external selective criteria (Aldrich and Ruef 2006; Hodgson and Knudsen 2010). (See Chapter 3, Section 3.2.8A and Section 3.3. See also Appendix 3, Section A3.3.1B and A3.5).

Figure 120 – Three Empirical Examples of Reinforcement and Selective Criteria

The Averseness of the Traditional Trade to the High Cost and Risk of Carrying Ice Cream and Exclusivity (Appendix A5.2 and A5.3)

The criteria related to the traditional trade resulted in the emergence and the increasing use of freezer and outlet exclusivity to gain the business of outlets therein to the extent that eventually Wall's and Glacier jointly held 90% share of the sector • The more important criteria included the persistent averseness of CTNs to trading ice cream due to a combination of the costs involved in owning and running a freezer and the unpredictability of the weather • These criteria operated in combination with three other criteria: the nature of the product and the need to store and transport ice cream under conditions of relatively low temperatures, the absence of refrigerated and independent wholesale distribution to retailers (therefore, to succeed Wall's and Glacier had to build their own infrastructure), and the extensive degree of fragmentation of the retail channel during the earlier years of the industry • Exclusivity “matched” the reinforcement criterion by opening the behaviour setting scope and offering an retailers an opportunity to escape-avoid the punishing consequences of owning a freezer and the full exposure to sales fluctuations and shortages due to the weather.

The Importance of Discounting Among the Grocery Trade (Appendix A5.4.5)

The criteria governing the Grocery Trade were substantially different from those governing the Traditional Trade: Supermarkets and home freezer centres emphasised relatively low pricing, the sale of take home products away from confectionery items towards offering a range of dessert and bulk products, own label brands, and, did not require a relatively higher quality product (as with the impulse trade) or freezer cabinets because they usually invested in their own refrigerating equipment (supermarkets and home freezer centres carried several types of frozen or cold foods as distinct from CTNs) • Wall's matched these criteria through rationalisation of its operations with a greater emphasis on economies of scale, the development of new bulk products, the introduction of discounting (and greater emphasis on a differential reward system) orientated around the grocery trade and a unique selling proposition that did not emphasise exclusivity.

Criteria with Respect to Refrigeration (Appendix A5.2.5)

The persistent condition that ice cream is stored and transported under low temperature conditions resulted in increasing proportions of cold storage at manufacturing, distribution, and retail. To the extent that with the developments in the frozen food industry that “matched” these criteria, secondary manufacturers could start competing more effectively when an independent third-party refrigerated value chain appeared. Offering freezers to retailers was a very successful way of addressing the low temperature requirement.

With respect to the loose coupling, the evidence suggests that variation and selection are only weakly connected and do vary independently (Aldrich 1979) because of (1) on average, an individual stakeholder to a given market does not have sufficient power on her own to effect any appreciable changes (Foxall 1999b); (2) a lack of precise and comprehensive information among firms on the prevailing the individual social and physical contingencies and their components, on how these contingencies combine to effect present emissions, and, on how these contingencies may change in the future; (3) a difficulty in collecting this information; (4) uncertainty about the future and lack of foresight: (5) causal ambiguity; (6) firm heterogeneity on absorptive capacity and entrepreneurial drive; (7) a lack of technology to deal with physical and social

contingencies³⁹⁴; and, (8) at any point, the firm is faced by multiple dynamic selection criteria for each class of stakeholder comprising the selective environment (channel customers, final consumers, rivals). Even though Wall's dominated the ice cream industry the evidence shows that it could not extend its control more completely given the actions of a large number of competitors, an extensive range of channel customers with differing conditions for doing business, and highly variable consumer behaviour patterns (cf. Vella and Foxall 2011). As a key finding from the evidence, therefore, all these elements intensify complexity and selection dynamics making the connection between the direction of firm-emitted variations and the selection criterion tenuous.

5.4.2 Variation: Extended Problem Solving

Insight on the nature of Wall's problem solving variations may be drawn from the contingency categories and the way Foxall (1990) uses these categories to distinguish between extended problem solving (Accomplishment) and routine behaviour of consumers (Maintenance)³⁹⁵. Focussing on extended problem solving, Accomplishment is a response class shaped and maintained by consequences resulting in patterns of relatively high utilitarian and informational reinforcement and punishment in relatively open and closed settings. These behaviours are hypothesised as being shaped and maintained by relatively variable ratio schedules (Foxall 1990, 1996b, 2010b).

The evidence suggests that Wall's practices may be described as Accomplishment and Extended Problem Solving. The learning history of Wall's

³⁹⁴ *Technology* is understood broadly within this research as "a human-constructed means for achieving a particular end, such as the movement of goods and people, the transmission of information or the cure of a disease" (Dosi and Grazzi 2010, p. 173).

³⁹⁵ See Chapter 4, Section 4.4.2 on the four equifinal consumer behaviour response classes, arbitrarily called, *Accomplishment* (a response class of behaviour shaped by and maintained on patterns of relatively high utilitarian and informational reinforcement), *Hedonism* (a response class of behaviour shaped by and maintained on patterns of relatively high utilitarian reinforcement and patterns of relatively low informational reinforcement), *Accumulation* (a response class of behaviour shaped by and maintained on patterns of relatively low utilitarian reinforcement and patterns of relatively high informational reinforcement), and, *Maintenance* (a response class of behaviour shaped by and maintained on patterns of relatively low utilitarian and informational reinforcement). In consumer behaviour, accomplishment refers to behaviour defined in terms of economic and social achievement including the acquisition of status symbols, personal fulfilment in terms of accumulating ostensible measures of achievement such as products or certificates marking progress, innovative consumer behaviour and early adoption of products, and the extensive, regular, and systematic search and evaluation of alternatives (Foxall 1990, 1996b, 2010b).

indicates that its practices were shaped by and maintained on patterns of relatively high utilitarian and informational reinforcement irrespective of the extent of setting scope stricture and in contrast to its rivals. The firm regularly and persistently achieved the highest levels of sales, profits, return on capital employed, and market share. Wall's repertoire of technological and technical progressiveness was characterised by strong expenditure in Research and Development, market research, product development, and the generation of innovation. It was a recognised market innovator and leader (status) to the extent that competitive encroachment achieved motivational rather than discriminative function when its leadership position was threatened³⁹⁶. Wall's retained this behaviour throughout. Its practices developed a decreased sensitivity to delays in reinforcement (a lesser sensitivity to variable interval schedules) in contrast to other firms: The practices of secondary manufacturers were reinforced by the patterns of reinforcement contingent upon extreme discounting and intense price competition, strategies typically associated with the short run acquisition of market share³⁹⁷. In contrast, Wall's behaviour was maintained on a longer *interval schedule* and on the relatively higher patterns contingent upon product development and on efficiency gains³⁹⁸. Given these considerations and the history of Wall's, its personal variables should predispose towards practices that can be described as "economic achievement", i.e., activities that involve higher risk (e.g., market creation), higher levels of customer search or acquisition activities including market research for locating opportunities for new products and increasing the level of sophistication in weather forecasting and modelling. Rivals appeared following and imitating Wall's success. In contrast to Glacier and the other secondary manufacturers, Wall's was far more likely to create rules under conditions of

³⁹⁶ See Appendix 5, Section A5.4.2C. There are also several episodes in the evidence narrating the product and technological innovations brought about by Wall's. In contrast, secondary manufacturers tended to imitate and did not introduce such innovations whereas there is only a single instance of Glacier's innovations (see Appendix 5, Section A5.4.3A).

³⁹⁷ Refer to the Ice Cream Report (1979, §36, 329) wherein smaller manufacturers are reported to have engaged in aggressive discounting even in colder weather to increase sales.

³⁹⁸ The benefits of product development, for example, accrue over a longer term than the heavy discounting practices of secondary manufacturers. Thus, reinforcement was delayed in the case of Wall's and its product development efforts. Further, the firm protested the cost and risks associated with being "the market innovator" and the relatively short lead time it had for reaping the returns from its efforts in developing, manufacturing, launching, and marketing new and successful product lines (Monopolies and Mergers Commission 1979, p. 120). In addition, product development, when successful yields relatively higher returns than price slashing (see also Appendix 5, Section A5.4.3, and examples on Soft Scoop ice cream and Cornetto).

change, the hallmark of problem solving (Skinner 1966b, 1969, 1984d), than to follow them³⁹⁹.

Loasby (2000) emphasises that the entrepreneurial function of the firm should facilitate market creation to the extent that those who expect to be most active in the new market will invest the most. The 'most active' is defined in terms of "those who expect to be large scale transactors on one or both sides of that market" (Loasby 2000, p. 301). On the basis of the case study Vella and Foxall (2011) and the evidence presented herein, Wall's appears to have had a significant stake in the market with a very deep investment by the firm in creating market opportunities. This market creation effort is most obvious in attempts by Wall's to generate a large volume of market transactions to gain return on its substantial market investments. Wall's seems to have been crucial to the creation of both the traditional trade in the 1920s and the grocery segment in the 1960s. Indeed the Commission argues that the "modern history of the industry" was inexorably tied to the early entrepreneurial drives of Wall's and that "the business developed on the basis largely of Wall's *own designed production and distribution equipment*" (Monopolies and Mergers Commission 1979, p. 26). It is in this sense that Wall's practices may be understood in terms of Accomplishment.

5.5 The Unit and Outcome of Selection

5.5.1 *What is being Selected and Why?*

So far the discussion has identified recurring and eliminated practices, the characteristic morphological features (topography, structure, and form) of these practices, and the selection processes involved. Skinner's natural selection-operant conditioning analogy provided a means for interpreting the behaviour of Wall's and the selection dynamics involved.

Evolutionary theory suggests further investigation into selection dynamics by orienting the discussion around identifying **the advantage conferring properties (the selecting consequences)** for which these cultural

³⁹⁹ Glacier, on the other hand, closely observed Wall's and attempted to imitate and *model* its success.

practices (and their characteristic features) have been selected given specific selective criteria – that is, the advantage such properties confer to an individual in relation to the selective criteria.

Why is a particular feature selected? What are its advantage conferring properties? The theoretical answer is suggested by the conceptual distinction between *selection of objects* and *selection for properties*. *Selection of* reflects the effects of the selection process whereas *selection for* describes the causes of selection: when it is said that there has been selection for a given property what is meant is that having the particular property causes survival and reproductive success – the property confers an advantage in relation to some criterion of selection (Sober 1984).

The key finding from the evidence supports the distinction drawn from Sober (1984) as necessary to clarify and strengthen Skinner’s cultural analogy. Thus, Proposition 4 is supported and retained for future research (Figure 121).

Figure 121 – Research Proposition 4 as Originally Defined in Chapter 3 (Section 3.4.3B)

Proposition 4: The Units of Selection

There is selection *of* the marketing repertoire of firms and selection *for* (directly) its marketing practices (the entire phenotype) including the characteristic properties of the mix (phenotypic characteristics) and *for* (indirectly) the learning history (rules) that has contributed to such practices and properties (the genotype).

The evidence on the *direct* selective retention and elimination of practices by environmental factors also implies the indirect selective retention of the rules that govern such behaviour⁴⁰⁰.

Section 5.5.1 provides warrant to these claims by investigating whether exclusivity, as a characteristic feature of Wall’s retail practices, had properties that conferred selective advantage (in relation to the selective criteria) and why. The examination also regards the impact of the grocery trade on Wall’s during

⁴⁰⁰ The selective retention of rules is clear from Section 5.2 of this chapter.

the 1970s especially since the properties that conferred selective advantage until then were those adapted to the selective criteria defined by the traditional trade.

The section answers the following questions: *What are the advantage-conferring properties of exclusivity of supply by Wall's to retailers? Are there any other advantage-conferring properties of other dimensions of the marketing mix?* Section 5.5.2 tackles the question: *How and to what extent have the various successive changes in environment-behaviour interactions resulted in above average differential rates of economic fitness of Wall's brands due to freezer and outlet exclusivity?*

In the context of Wall's history, the *consequences* which *select the repertoire* (selection of) directly *for* the marketing practices (the entire phenotype including the characteristic properties of the mix) and *indirectly for* the rules summarising learning history (and other personal variables representing the regulating genotype) are the actual effects that these practices generate in the environment and in relation to the relevant selection criteria. According to the evidence, the selecting consequences relate to the recurring effects produced by the marketing mix (and its characteristic traits) on profitable and cost effective customer acquisition and retention because of the capacity of the mix to progressively match (or exceed) environmental selective criteria to some degree. The point being made here is that it is not enough to simply state that the behaviour of the firm functions to generate customer acquisition and retention while economising on the transaction costs involved in the creation and/or in the use of the market. Rather, the consequences of these behaviours must be linked to and causally related to the relevant environmental selective criteria.

Four conclusions may be drawn from the evidence as presented and discussed so far:

(1) *Some practices and their characteristic traits have properties in relation to the selective criteria that are more suited (adapted) to conferring advantage and contributing to the survival of the repertoire because in*

interaction with prevailing contingencies, the practices and their traits are more effective in producing these consequences: As a characteristic feature of Wall's place strategies, freezer exclusivity conferred advantage because the *legally enforceable contractual* feature generated a significantly large rate of retailer approach and business volumes by (a) reducing the punishing consequences of trading in ice cream to traditional trade retailers, namely, the costs and risks of owning and running a freezer (negative reinforcement of retailer behaviour); (b) increasing the net rewarding consequences of trading ice cream to these retailers through some reward system (positive reinforcement) that also included reducing the delay to break even; (c) broadening the consumer behaviour setting scope by continually expanding and replenishing the total number of places wherein the patterns of reinforcement related to ice cream may be produced through purchase and consumption behaviours⁴⁰¹; (d) restricting consumer choice in each outlet to a single set of brands while, in parallel, providing variety in the patterns of consumer reinforcement via a comprehensive and continually replenished product range⁴⁰²; and (e) reducing the punishing consequences of competitive encroachment by barricading any access to the patterns of reinforcement contingent upon trading with its existing customers through legal means. It is these consequences that seem to have generally matched or exceeded the combined selective criteria of retailers and consumers in relation to rival offers. In other words, these consequences were *causally involved* in the selection for freezer exclusivity.

Similarly, as a characteristic feature of the pricing policy of Wall's, the differential reward scheme conferred advantage because progressively higher levels of retailer and wholesaler trade volumes (a) positively reinforced intermediary efforts aimed at increasing consumer exchange transactions within a particular store, and, (b) negatively reinforced these efforts by reducing and delaying the cost incidence of trading ice cream on the business (bonus schemes and discounts functioned as negative reinforcers) and quickening

⁴⁰¹ For example, by expanding geographical coverage according to the distribution of the population within the UK and by tapping into different types of retail outlets (ranging from beach concessions to home freezer centres, from restaurants to supermarkets, from CTNs to cinemas, from static outlets to mobile vans) Wall's enhanced locational convenience to its prospective customers and created more opportunities for situations for ice cream purchase and consumption to be created.

⁴⁰² Variety is a primary reinforcer of human behaviour (Foxall 1990, p. 42). See also Appendix A5.10.3.

breakeven (thereby reducing the state of deprivation). Given the advantages vis-à-vis the price consciousness criterion characterising the grocery trade, differential reward schemes were selectively retained right until 1998 (Vella and Foxall 2011). To the extent, that by 1977, Wall's had a substantial portion of its business tied with these larger volume retailers and wholesalers⁴⁰³.

(2) *The advantage conferring properties of a particular behavioural trait operates relative to other traits* (Dahlbom 1984): Wall's business model seems to have conferred advantage because the rules featuring therein prescribed and proscribed a range of behaviours evoking only those large-scale operation practices characteristically producing relatively high patterns of utilitarian and informational reinforcement. When practiced on a large-scale, freezer exclusivity resulted in significant sales volumes, revenues, retail penetration, and market share. In combination with the advantage conferring properties of rationalisation, consolidation, modernisation, and technical progressiveness (the reduction of the punishing consequences of large scale operations, i.e., the per unit incidence of costs on a relatively low value product, as the selecting consequences of the practices), freezer exclusivity was conducive to profitability. The other characteristics that operated together with freezer exclusivity included advertising, branding, product development and the generation of variety and novelty. Unfortunately, there is insufficient evidence to provide an empirical description of the selective advantage that such promotional and product practices as advertising and branding might have produced besides bringing consumers into indirect contact with the patterns of reinforcement and punishment contingent upon purchasing and consuming the distinctive offerings of manufacturers. Although good quality and a strong or a leadership reputation both seem to have formed part of the selective criteria of consumers, no evidence is available with respect to why the advertising efforts of Wall's were more effective than those of Glacier⁴⁰⁴.

(3) *Other practices and traits are less suited to contributing to the survival of the repertoire because, in interaction with prevailing contingencies, are less effective in producing these consequences:* Appendix 5.10.3 highlights the

⁴⁰³ See Appendix 5, Section A5.4.5C.

⁴⁰⁴ All that is known is that advertising was important.

characteristics and selecting consequences related to the consumer marketing mix employed by Wall's and provides the reasons why serving customers directly in mutuality plus exchange relations (practice) via tricycles between 1922 and 1939 and via mobile vans (as characteristic traits of Wall's place strategies) until 1963 was selectively eliminated as a practice in favour of mutuality only relations because of the expense involved in maintaining mutuality plus exchange relations and of increased span of coverage awarded by retailers⁴⁰⁵.

(4) *Some acquired practices and their characteristic traits are suitable for a particular environment and may not be necessarily suitable for a similar environment due to respective differences in the selective criteria governing the environments:* This conclusion arises from major differences between the traditional and the grocery trade where the feature of exclusivity did not confer any advantage to Wall's in pitching its business to the larger grocery outlets and chains. In contrast to the traditional trade, the grocery segment favoured competitive and differential pricing⁴⁰⁶. The discussion thus suggests a refinement to Proposition 4 (Figure 122).

Figure 122 – Additional Research Proposition 4.1 for Future Research

Proposition 4.1: The Selecting Consequences
The properties for which the phenotype and genotype are selected for are causally involved in the selective process because they confer differential advantage in addressing selective criteria. Free riders have no such causal involvement.

Although the case has contributed much to clarifying the issue of units of selection within Skinner's evolutionary analogy, the conclusions drawn with

⁴⁰⁵ Although the evidence on outlet exclusivity is sketchy, it may be argued that the practice was suppressed by Wall's in 1975 as a result of the significant increase in intensity of encroachment by secondary manufacturers in combination with reduced revenue streams. By not offering outlet exclusivity, retailers may have been less averse to trading in Wall's brands than before given that Glacier still retained outlet exclusivity and the products of other secondary manufacturers did not have the same quality or depth of range as those of Wall's. After all the practice did reappear in later years (Vella and Foxall 2011).

⁴⁰⁶ See Appendix 5, Section A5.4.5.

respect to the properties conferring advantage are based on qualitative evidence and the combined results of all properties. There was insufficient evidence to provide a more exacting investigation. Future research ought to be directed towards identifying and examining a single or a small set of related properties through quantitative methods.

5.5.2 Fitness and the Outcomes of Selection

Figure 123 highlights the proposition made in Chapter 3 with respect to selection outcomes.

Figure 123 – Research Proposition 3 as Originally Defined in Chapter 3 (Section 3.3.2C)

Proposition 3: The Outcomes of Selection

The outcomes of selection are the differential retention and replication of cultural practices. Those behaviours/practices that are functionally effective to the individual in his or her interaction with the environment will recur and increase in frequency (they are retained) over space and time. Those that are less effective decrease in frequency. Within a single generation behaviours/practices exhibit fitness differences.

The discussion has shown that within a single generation, environmental conditions selectively retain those marketing mixes (including components and properties thereof) of a given manufacturer to generate differing rates and strengths of channel and consumer approach and profitable literal exchange terminal behaviours. This is because these mixes constitute a relative closer match to environmental selective criteria and, therefore, on the balance, are instrumentally and informationally reinforced. Within a single generation, environmental conditions selectively eliminate those marketing mixes (including components and properties thereof) of a given manufacturer to generate differing rates and strengths of channel and consumer escape-avoidance and defection. This is because these mixes do not constitute a relative closer match to environmental selective criteria and, therefore, on the balance, are instrumentally and informationally punished (or not reinforced). The selected *for* mixes (including components and properties thereof) and rules that have

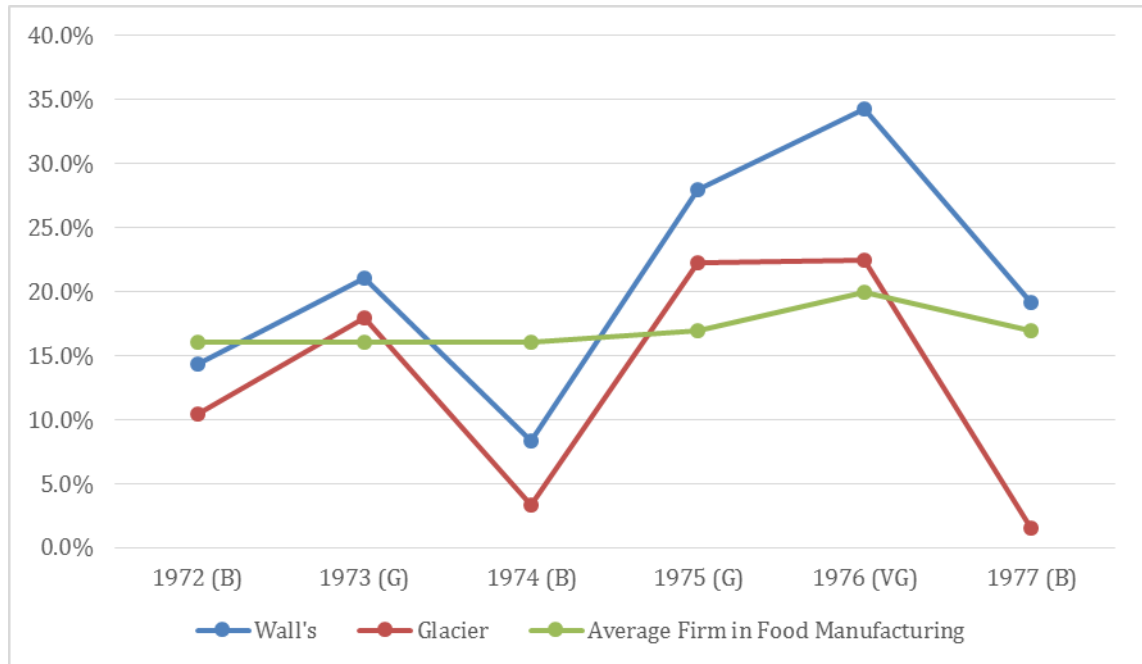
contributed to exclusivity being favoured are carried forward to the subsequent generation.

If the three necessary conditions of natural selection (variation, selective retention and elimination, and, inheritance-replication) are met for any trait, then outcome of selection automatically follows, namely, a change in the distribution of the proportion or frequency of traits in the population where those traits exhibiting higher fitness appear more frequently in the population (Campbell 1969; Endler 1986; Ridley 2004). The proposed measure of fitness was established as the 'relative importance of individual brand shares in relation to the share of an average member of the entire manufacturer population' for a particular trait. Economic fitness demonstrates the result of the processes of evolutionary patterns of economic change (Metcalf 1998, 2005).

Given the lack of quantitative evidence in relation to the total number of competitors within the ice cream market, it is not possible to establish the share of an average member of the entire manufacturer population. Also due to a lack of evidence it is not possible to isolate the separate effects of exclusivity with respect to brand share. Fitness, thus, cannot be established (Figure 124)⁴⁰⁷. However, when the entire marketing mix of Wall's is considered, the discussion demonstrates that the three conditions for natural selection are met. Further, the market share of Wall's is significantly higher in relation to the other manufacturers suggesting some degree of fitness. Given the importance of exclusivity in Wall's place strategies and the extent of market dominance and power of the company, it would seem that exclusivity demonstrated a degree of fitness.

⁴⁰⁷ The Ice Cream Report (1979) emphasises the focus of the national manufacturers on return on average capital employed as one of the informational beacons guiding market behaviour. If this were considered as a possible measure of fitness, then the evidence does indicate that, overall and through time, the market behaviour of Wall's was more adapted to environmental factors than that of Glacier. In Figure 124, for example, note that the return on capital employed experienced by Glacier is below the level of the average manufacturing company suggesting that Glacier's path towards its demise was already evident by 1975, a good weather year.

Figure 124 – Return of Capital Employed of Wall’s and Glacier as Candidate Indicator of Fitness (Comparison to Average Firm in Food Manufacturing)



Source: Appendix 5, Section A5.7.11

5.6 Conclusions

The chapter discussed the elements and the relations outlined by the SMC and underlying theory in relation to the main findings emerging from an operant interpretation of the qualitative evidence found in the Ice Cream Report.

The discussion suggested refinements to existing operational definitions including attention to such dimensions as absorptive capacity, relations between the firm and its owners, and loose coupling. The chapter also discussed the extent of support for a number of research propositions outlining changes and proposing additional working hypotheses for future research.

In conclusion and given the suggested refinements, the process of operant conditioning *is* applicable in analogy to qualitatively explain the environmental dynamics of selective retention and elimination of marketing repertoires *for* recurring marketing practices and characteristic traits in these practices of Wall's in the UK.

Appendix 5 and Sections 5.2 to 5.4 have shown how and the extent to which lineages of marketing practices of Wall's in interaction with the

environment changed successively between 1922 and 1979 allowing these traits to emerge and become recurring and stable features of the market. Such traits included exclusivity, a differential reward scheme, and the generation of novelty and variety. The discussion also demonstrated indirect selection for the rules that supported these practices and characteristic traits. Section 5.5 discussed the advantage-conferring properties of exclusivity of supply by Wall's to retailers. Due to a lack of evidence the discussion could not demonstrate how and the extent to which various successive changes in environment-behaviour interactions resulted in above average differential rates of economic fitness of Wall's brands due to exclusivity.

Chapter Six

Conclusions, Reflections, and Future
Research

6.1 Introduction

The purpose of this concluding chapter is to evaluate the entire research: Section 6.2 reconsiders the research objectives summarising the steps taken to construct the project and key arguments suggested along the way. Section 6.3 sums up the interpretation providing a concluding commentary on the SMC, the Marketing Firm, and the use of the BPM. Section 6.4 evaluates the research method and case design. Section 6.5 provides a statement of the original contribution of this research while Section 6.6 highlights the main managerial implications.

6.2 Reviewing the Research

Selection by Consequences refers to a meta-principle introduced by Skinner (1981) and through which he draws the explicit analogy between the evolutionary processes involved in biological natural selection and trial-and-error learning processes as explained by operant conditioning.

The scope of the research is delineated by Skinner's fundamental claim: the evolution of cultural practices proceeds as a special application of operant conditioning and the processes underlying operant conditioning are sufficient to explain the evolution of cultural practices (Skinner 1961b, 1981, 1984b, f, h). These processes refer to the experimental procedures of reinforcement and punishment through which behaviour is acquired (shaped), maintained, or discontinued via changes in its environmental influences.

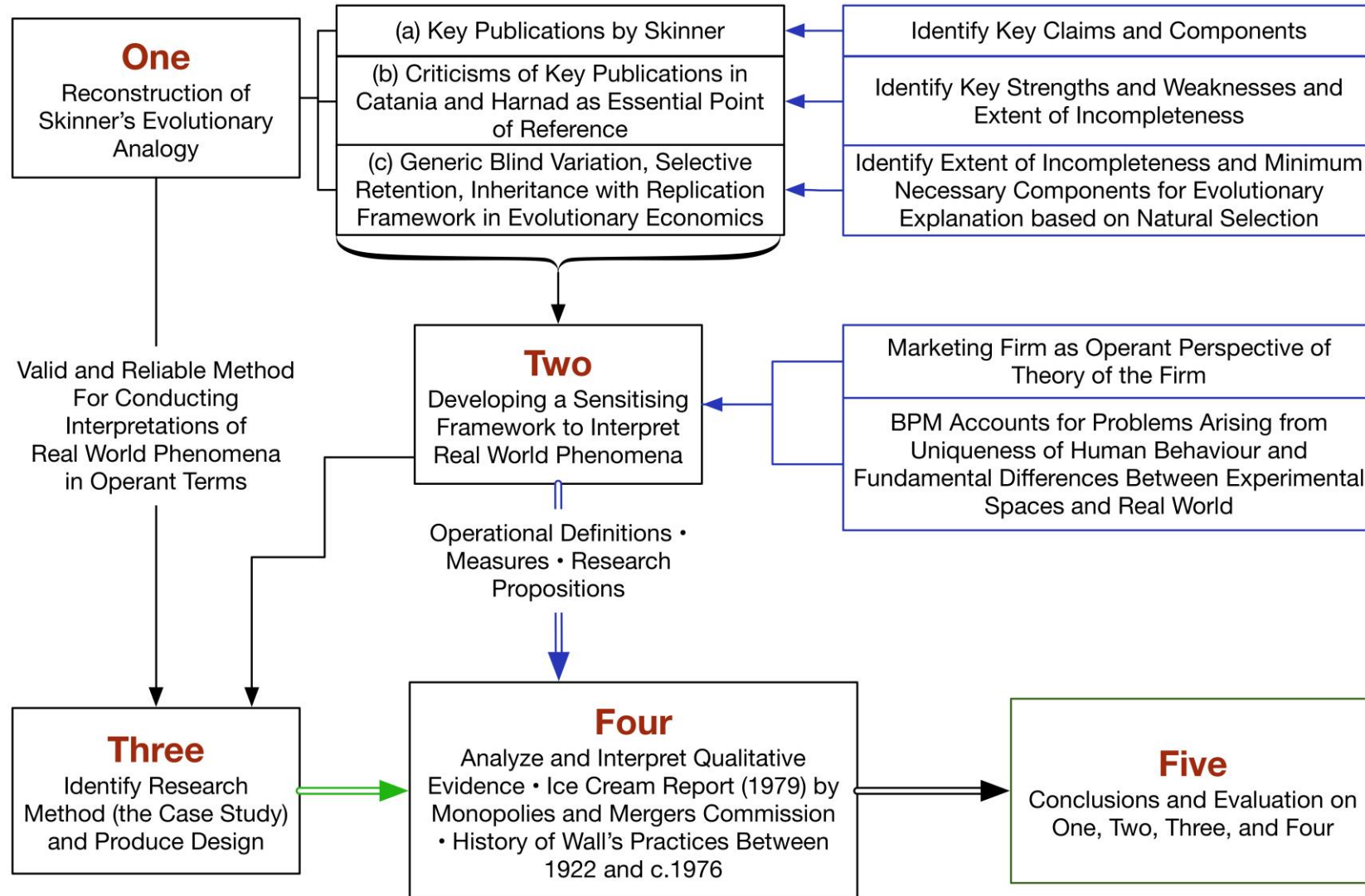
The central objective of the research was defined as conducting qualitative case study research to assess and evaluate Skinner's analogy and key claim as it applies to characterise the evolution of firm marketing practices. The key deliverables entailed, first, uncovering the substantive dimensions of the analogy across Skinner's primary publications to assess its completeness, strengths, and weaknesses and identifying necessary but missing concepts. Second, overcoming the methodological obstacles in applying the principles and results uncovered in controlled experimental spaces using human and non-human individuals to the marketing practices of firms as these have been

observed to occur in actual market settings. Third, conducting a systematic and rigorous case study investigation based on these two dimensions and the knowledge derived within the EAB to construct an operant understanding of the natural selection dynamics operating on firm practices described in real world observations.

The *Marketing Firm* was identified as providing the theoretical underpinning of the evaluation since it represents an operant perspective to the economic theory of the firm and accounts for a number of methodological obstacles via the use of the BPM. This latter interpretative device elaborates on the three term contingency to account for a range of problems arising when applying operant principles as developed within laboratories through an experimental analysis of human and non-human behaviour to human behaviour in natural settings. The research was designed to serve two additional purposes: developing the Marketing Firm perspective and extending it into evolutionary economics by providing empirical insights on the dynamics of the selection mechanism; and, testing and evaluating the use of the BPM in further developing an operant perspective on firm behaviour.

The research involved five steps (Figure 125).

Figure 125 – Steps Covered in Conducting the Assessment and Evaluation of Selection by Consequences

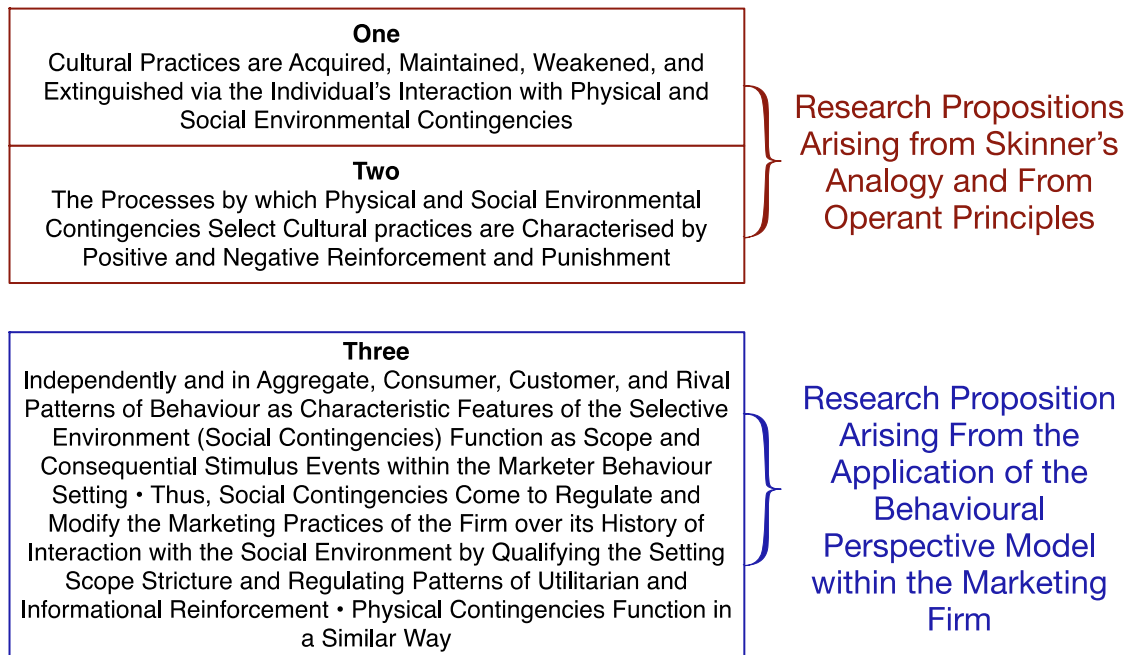


The first step involved reconstructing Skinner's cultural evolutionary analogy from his canonical publications. The analogy was critically appraised in relation to the key theoretical concerns raised by several researchers commenting directly on it and to the basic generic VSI framework of socio-cultural evolution used in evolutionary economics to characterise economic change through the natural selection analogy. The critical appraisal allowed extracting the necessary components required for a first approximation or baseline framework for future research⁴⁰⁸.

The primary concern was the incompleteness of Skinner's application of the Darwinian analogy. The literature review contributes by identifying *all* the necessary components for a baseline evolutionary framework based on Skinner's analogy and by suggesting ways in which to incorporate them: First, problems posed by the environment were framed in terms of selective criteria. An analogy was drawn between reinforcement criterion, a concept implicit in Skinner's argument by virtue of his experimental research, and the selective criterion as it appears in socio-evolutionary accounts: Selective environments impose a set of imperfectly known conditions or requirements that behaviour must satisfy to some degree to produce reinforcement. Second, the research appealed to Sober (1984) to clarify what is being selected (*selection of*) and the reasons for which the object is being selected (*selection for*). Third, the review drew more explicit attention to learning history: the construct plays a role analogous to the replicating genotype because it holds regulatory dimension implied in the extent of the continuity of behaviour over time (Foxall 1993b, 1997b; 2010b, cf. Baum 2000). In short, the review proposed that cultural repertoires are directly selected for their component practices (and their characteristic properties) and indirectly selected for the rules that have given rise to such configurations and component properties. These rules or instruction sets are explicit or implicit (retrospective) characterisations of several distinct facets of the firm's history of reinforcement and punishment. A core set of research propositions was identified as a means to evaluate the analogy through research (Figure 126).

⁴⁰⁸ The research sacrificed an appeal to a relatively comprehensive review of evolutionary economic literature on the subject of natural selection in favour of generating a very deep operant analysis of selection dynamics. What the process may have lost in oversimplifying certain conceptual dimensions was offset by a more comprehensive account of and greater focus on the theoretical variables of interest (Nelson and Winter 1973).

Figure 126 – Key Research Propositions Emerging from the Literature



The second step involved devising an appropriate sensitizing framework, the SMC, to operationalize and elaborate the relevant aspects of the BPM as it applies to marketing practices within the perspective of the Marketing Firm. In conjunction with the critical appraisal of Skinner's analogy this provided an additional source for deriving research propositions. The aim of the SMC was to render a yardstick against which to evaluate the methodological and conceptual contribution of the BPM to the research objectives and the appropriateness of the analogy drawn by Skinner. The two main contributions of the SMC were (1) an explicit formulation of the BPM in application to marketing practices, and, (2) working hypotheses, in the guise of research propositions, to guide the present and future research. The third critical proposition required for demonstrating processes of selective retention and elimination emerged from the SMC (Figure 126).

The third step involved identifying and adapting an appropriate research method and design to generate valid and reliable qualitative research within radical behaviourist philosophy. The case study method as developed in Vella

and Foxall (2011, 2013) was adopted and refined to account for limitations and for the particular objectives of this research⁴⁰⁹.

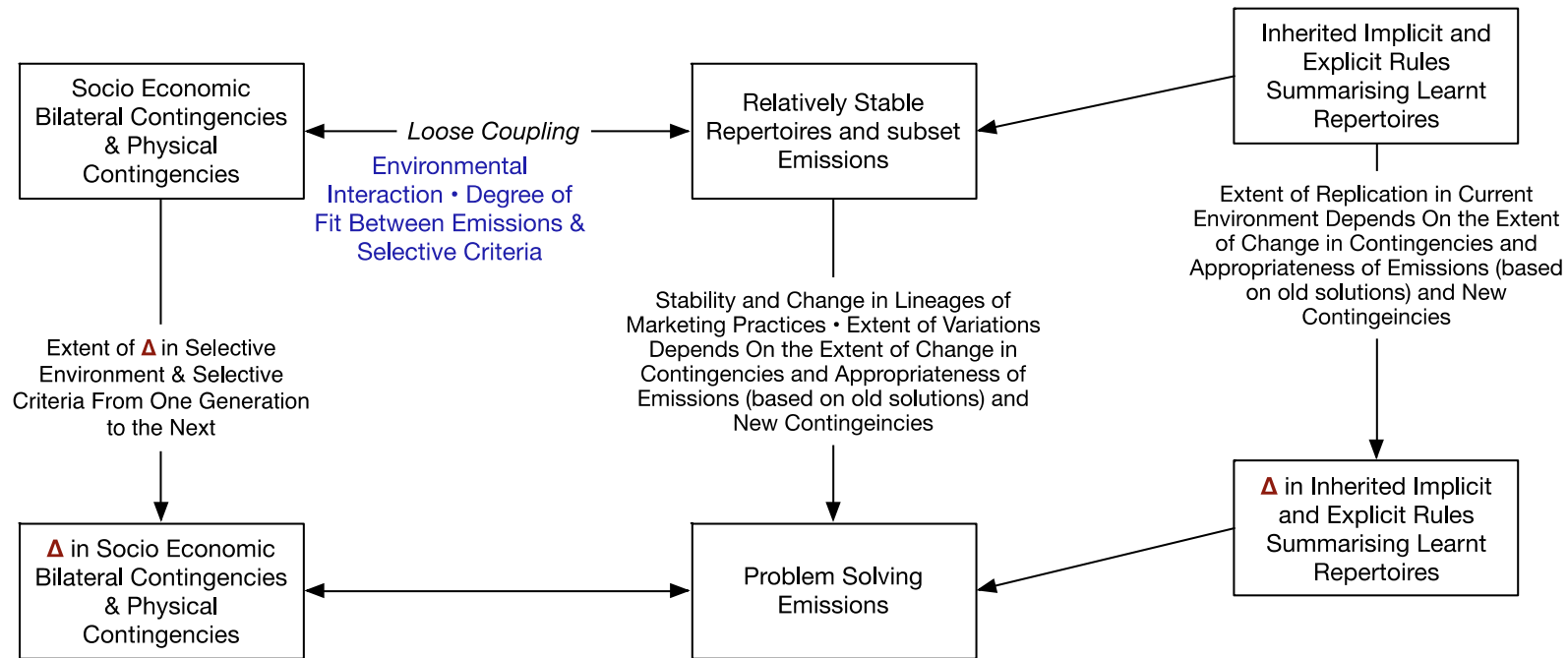
The fourth step applied the SMC to analyse and interpret a full market investigation of monopolistic practices in the ice cream market conducted by the Monopolies and Mergers Commission published in 1979. The operant interpretation of the qualitative longitudinal evidence sought to understand whether Skinner's analogy is useful and appropriate by constructing an empirical example of how socio-cultural evolution through operant conditioning 'actually' works (Figure 127). The operational definitions, measures, and research propositions guided the interpretation. Sufficient support was found for the propositions to acknowledge operant conditioning as a good analogy in describing the selection dynamics involved in the marketing practices of Wall's between 1922 and ca.1978⁴¹⁰. Adopting and developing the analogy in future research is recommended. Despite the strength of the operant conditioning analogy, supplementary considerations shored Skinner's analogy. The research also uncovered a significant degree of complexity and highlighted the flawed characterisation by Skinner because it understates and oversimplifies the nature of socio-cultural evolution. The research also contributed by demonstrating the usefulness in continuing investigations based on the perspective delineated by the *Marketing Firm*. Framing the marketing behaviour of firms in terms of the BPM is crucial to the endeavour.

The fifth step involves an evaluation of the process (this and the preceding chapter).

⁴⁰⁹ The research method is a significant departure from the non-rigorous narrative interpretation that Skinner and other behaviourist researchers engage in when applying operant principles outside the laboratory.

⁴¹⁰ Generalizability of the findings outside the case is not implied.

Figure 127 – The Selection by Marketing Consequences Framework in terms of the Variation, Selective Retention-Elimination, Inheritance-Replication Model



(1) Environmental Interaction brings about changes in the contingencies due to emissions of the individual: social transmission of marketing practices via individual reinforcement and punishment of socio-economic parties to the market and via observation, imitation, and modelling.

(2) Environmental Interaction brings about the Selective Retention of the individual's emissions via negative and positive reinforcement • Selective Elimination of the individual's emissions via positive punishment • Selective Retention and Elimination of Certain Inherited Rules.

(3) Increase in the relative importance of certain practices in the individual's repertoire (e.g., intensified emission of exclusivity practices) • Increase in the relative importance of certain practices within the entire population (e.g., freezer exclusivity a must to operate successfully within the traditional trade; increase in market share of own brands relative to those of rivals).

(4) Selection of the marketing repertoire of Wall's and selection for (directly) its marketing practices and characteristic properties of the mix (the phenotypic characteristics) and for (indirectly) the rules (summarising learnt repertoires) that have contributed to such practices and properties (the genotype).

6.3 Research Propositions, Conclusions, and Directions for Future Research

Chapter 5 and its accompanying appendix provide an extensive evaluation of the usefulness of the Marketing Firm, bilateral contingencies of reinforcement, the BPM, and the SMC, as analytical and interpretive devices. Refinements to operational definitions and research propositions were suggested therein.

This section summarises the conclusions drawn in relation to each of the research propositions and identifies future research directions. The case study and the adopted evolutionary perspective contribute to understanding how the characteristic features of the marketing practices of Wall's narrated in the report were selectively retained and why these persisted. Thus, in conclusion, the research finds in favour of continued adoption of the perspective rendered by the Marketing Firm and associated devices.

Figure 128 – Research Proposition 1: Operant Conditioning and Processes

Complete Support for the Proposition	
Proposition 1: Operant Conditioning	
Cultural practices are acquired, maintained, weakened, and extinguished by the individual via behavioural interaction with physical and social environmental contingencies either through direct exposure to the contingencies or through rules.	<i>Source:</i> Chapter 3, Section 3.3.1

The evidence provides strong support in favour of the characterisation described in **Proposition 1** (Figure 128) including, for example, the regulatory dimension of the business model activated by and priming the behaviour setting and, the gradual changes of these rules through direct exposure to the actual contingencies⁴¹¹. A particularly strong example that demonstrates the differences between rules and the actual behaviour is the case wherein the business model evolved around the conditions regulating the traditional trade

⁴¹¹ In what follows partial or complete “support for the proposition” means the extent to which the characterization embodied in the proposition is applicable in interpreting the history and marketing practices of Wall's.

segment and the purchase and consumption of impulse confectionery items. The second generation-situation was characterised by the rise of the grocery trade and the different selective criteria within that segment strained the rules and negatively effected performance. The practices of Wall's were differentially reinforced and repertoires more suited to the grocery trade appeared.

The research also assumed a characterisation of brands representing rules designed and implemented by firms to govern and routinize consumer behaviour thereby increasing the likelihood of literal exchange. Future research ought to direct attention towards the importance of brands as representing rules that govern consumer behaviour and the nature and proliferation of these rules via processes analogous to operant conditioning.

The second part of the proposition (Figure 129) was refined to make clear the distinction between physical and social contingencies and emphasise the reciprocal nature of the latter.

Figure 129 – Research Proposition 1: Contingencies and Rules

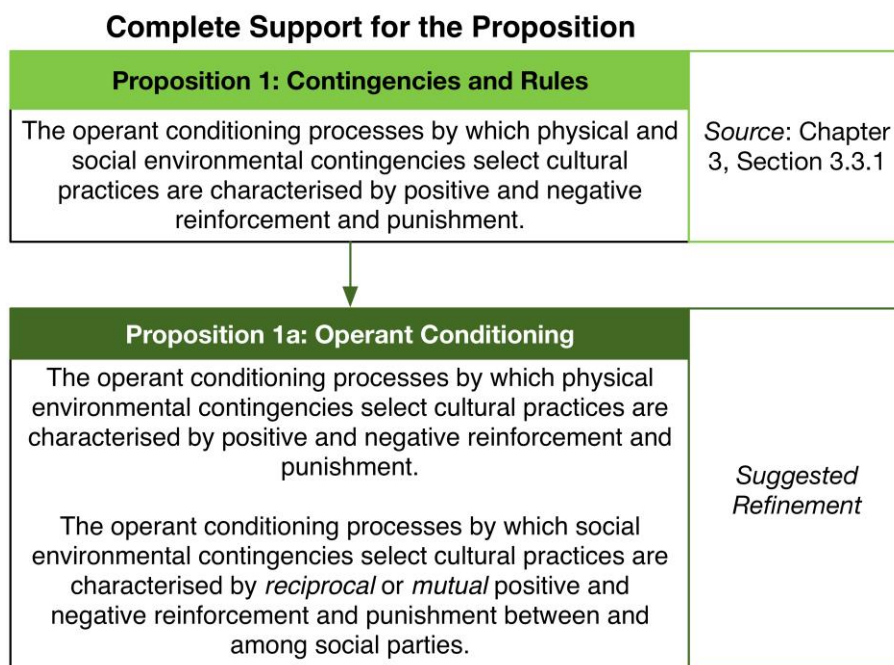
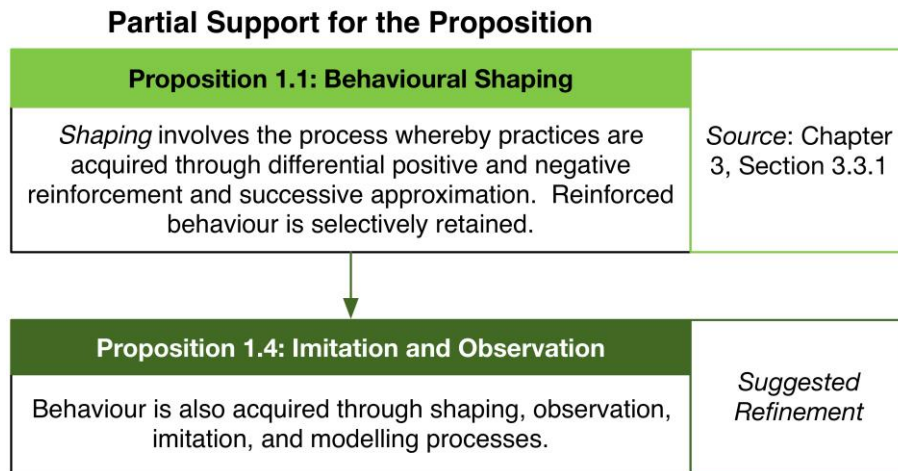


Figure 130 – Research Proposition 1.1



Evidence was found with respect to environmental contingencies shaping the behaviour of Wall's via differential positive and negative reinforcement.

The interpretation traced the growing sensitivity of Wall's practices to the reinforcement patterns contingent upon generating commercially successful novelty from the early 1920s to well into the late 1970s. To the extent that in the presence of market opportunities and threats, Wall's was regularly found emitting novelty. Such behaviour was reinforced gradually by, among others, changing consumer behaviour and the various alterations of rival marketing mixes. This indicates shaping. A second instance of shaping was the evidence of the changes in Wall's practices brought about by the emergence of the grocery trade, which the firm pioneered to escape-avoid the aversive consequences of operating in the traditional trade under conditions of stagnating and highly variable demand. Evidence was also found with respect to Wall's differentially reinforcing (positive and negative) its retailers via the differential reward scheme and the various contractual clauses favouring higher levels of retailer approach and business volumes. However, the data was insufficient to provide a deeper interpretation of the gradual acquisition of behaviour through successive approximation. Hence, **Proposition 1.1** (Figure 130) was only partially supported. Future research ought to focus on exploring

selective retention through differential reinforcement to understand its nature in greater detail⁴¹².

Importantly, behaviour may also be acquired through observation, imitation, and modelling (Skinner 1966c, 1981, 1984b, f, 1986, 1989b). The distinction was disregarded in the first approximation (c.f. Vella and Foxall 2011) because a lack of evidence was expected. Surprisingly, good examples of imitation and observation were found: Wall's engagement in observing the effects of its own performances in the market in relation to others and of the marketing practices of others was an informationally reinforced repertoire⁴¹³. Originally, Wall's might have imitated the practice of freezer and outlet exclusivity by observing Glacier's channel endeavours. Glacier and secondary manufacturers imitated the successful products of Wall's and ignored its poor performers.

The evidence thus supports Skinner's (1966c, 1981, 1984b, f, 1986, 1989b) claim that social transmission processes or the replication of practices across members of the population involves behavioural shaping, observation, and imitation. Firms only imitated *successful* products, brands, and marketing mixes; i.e., those which were relatively better suited to satisfying or exceeding the relevant selection criteria. Thus, the process of selection resulted in an increase in the relative importance of the more successful products, brands, and marketing mixes within the entire population of practices. The evidence also indicates social transmission through the creation of self-rules.

There is a significant empirical literature within the EAB on imitation (Cooper *et al.* 2007) and future research ought to be directed to exploring these phenomena further by developing an operant interpretation of the imitative

⁴¹² As shall be discussed in Section 6.4, one of the limitations of the research is the absence of certain data. Triangulation across multiple sources may have alleviated this problem. However, the continued use of secondary archival evidence may limit the extent to which processes analogous to differential reinforcement (and successive approximation) may be uncovered. Demonstrating the phenomenon requires a sequence of gradual and successive changes. Secondary qualitative evidence may not contain these sequences due to the differing research objectives. Vella and Foxall (2011) had a similar problem and suggest that researchers should consider populating their case studies with primary data if warranted by the potential mismatch between data contained in archival evidence and theory.

⁴¹³ To the extent that this warranted a refinement in the operational definition of informational reinforcement (see Chapter 5, Section 5.3.5A and Section 5.2.1).

behaviour of firms. Glacier provides an interesting starting point. Research on Selection by Consequences needs to also include imitation as a process of learning by the individual and a process of social transmission and replication.

Figure 131 – Research Proposition 1.2

Complete Support for the Proposition

Proposition 1.2: Behavioural Continuity	<i>Source:</i> Chapter 3, Section 3.3.1
<i>Maintenance</i> involves reinforcement to regulate the recurrence of past emissions. Reinforced behaviour is selectively retained, strengthened, and replicated.	

Extensive evidence of positive and negative reinforcement was found to completely support **Proposition 1.2** (Figure 131).

Figure 132 – Research Proposition 1.3

Partial Support for the Proposition

Proposition 1.3: Behavioural Discontinuity	<i>Source:</i> Chapter 3, Section 3.3.1
<i>Weakening</i> involves a process whereby some practices are positively or negatively punished to reduce the rate of emissions of such repertoires. <i>Extinction</i> involves the discontinuation of previously reinforced practices through environmental arrangements that function to withhold such reinforcement. Both weakening and extinction processes regulate the discontinuation of practices. Punished behaviour is selectively weakened or eliminated. Non-reinforced behaviour is selectively eliminated.	

Evidence was found partially supporting **Proposition 1.3** (Figure 132): for example, behavioural discontinuity through positive punishment was identified in the case of Wall’s mutuality-plus-exchange relations with consumers eventually becoming maladapted and being filtered out by their excessive cost burden on Wall’s. However, a more detailed analysis was not possible because there was insufficient narrative extensively describing the reasons why such practices were stopped. This absence was felt strongly when trying to reconstruct the reason why Wall’s removed outlet exclusivity from its contractual offering to retailers. The lack of evidence probably arises because the Commission focused on continued practices rather than discontinued ones given the scope of its investigation into monopolistic behaviour. Future research specifically investigate more closely the processes involved in behavioural discontinuity through punishment.

Figure 133 – Research Proposition 2

Complete Support for the Proposition	
Proposition 2: The Criterion of Reinforcement and Selection	
Environmental conditions pose problems that are resolved by occasioned emissions with varying degrees of effectiveness. These conditions may be summarised as reinforcement or selection criteria.	<i>Source: Chapter 3, Section 3.3.2C</i>

The analogy between reinforcement criteria and selective criteria was very useful and a number of different criteria were unearthed. Thus, **Proposition 2** (Figure 133) finds complete support. With respect to socio-cultural evolution, however, such criteria are very difficult to identify from beforehand (Campbell 1969)⁴¹⁴. It would appear that identifying actual selective criteria in socio-economic is an empirical matter.

Figure 134 – Research Proposition 2.1

Complete Support for the Proposition	
Proposition 2.1: Matching Reinforcement Criteria	
Occasioned behaviour, operating in the environment and progressively matching reinforcement criteria or conditions to some degree, generates reward and, ultimately, is reinforced (i.e., positively selected and survives within the repertoire of the individual). Occasioned behaviour that does not progressively match reinforcement criteria is either penalised or not rewarded. In these latter cases, and all other things being equal, the rate of emission decreases to be eventually discontinued.	<i>Source: Chapter 3, Section 3.3.2C</i>

The evidence supports Proposition 2.1 (Figure 134) and provides empirical insights into loose coupling (Van Parijs 1981), i.e., behavioural variations and selection criteria varying independently and only being weakly connected (Campbell 1969; Aldrich 1979). Loose coupling arose because (1) generally, no individual incumbent holds sufficient market power to effect any appreciable changes (Foxall 1999b)⁴¹⁵; (2) lack of precise and comprehensive

⁴¹⁴ Campbell (1969) argues: “we know the physics of air, water, and light to which the swimming, flying, and seeing apparatuses of the lower animals must conform. For the study of social evolution, we have no such semi-independent descriptions of the selective criteria” (p. 75).

⁴¹⁵ Even though Wall’s dominated the ice cream industry, the evidence shows that it could not extend its control more completely given the actions of a large number of competitors, an extensive range of channel customers, and consumer behaviour patterns (cf. Vella and Foxall 2011).

information on the prevailing social and physical contingencies (including the components of these contingencies), on how these contingencies combine together to create new or alter existing conditions, on the effects of contingencies (independently, simultaneously, and in combination) on practices (and the rules summarising learnt repertoires), and, on how these contingencies may change in the future; (3) a difficulty in collecting this information; (4) uncertainty about the future and lack of foresight; (5) causal ambiguity (Ambrosini 2001; Ambrosini and Bowman 2010); (6) firm heterogeneity on absorptive capacity and entrepreneurial drive; (7) a lack of technology to deal with physical and social contingencies; and, (8) the selective environment is characterised by multiple dynamic selection criteria operating independently, simultaneously, and in combination on the behaviour of the firm. These elements intensify complexity and selection dynamics making the connection between the direction of firm-emitted variations and the selection criterion tenuous.

Future research ought to be directed towards exploring the degree of responsiveness of an organisation's behaviour (on a range from relative flexibility to relative inertia) to environmental selective criteria with special attention to lock-in arising from path dependence, the extent of environmental ambiguity and complexity, and absorptive capacity. The case of Glacier provides an interesting starting point and its history raises several questions especially since the Commission's second investigation narrates its demise in the 1990s (Monopolies and Mergers Commission 1994).

Figure 135 – Research Proposition 3

Complete Support for the Proposition

Proposition 3a: The Outcomes of Selection	
The outcomes of selection are the differential retention and replication of cultural practices. Those behaviours/practices that are functionally effective to the individual in his or her interaction with the environment will recur and increase in frequency (they are retained) over space and time. Those that are less effective decrease in frequency.	Source: Chapter 3, Section 3.3.2C

No Support for the Proposition

Proposition 3b: The Outcomes of Selection	
Within a single generation behaviours/practices exhibit fitness differences.	Source: Chapter 3, Section 3.3.2C

With respect to **Proposition 3a** (Figure 135), the evidence finds that certain practices were retained while others were discarded, and, some practices (such as freezer exclusivity) were replicated by Wall’s over the entire history covered in the report. In addition, through social transmission several practices (ranging from freezer exclusivity to successful products) increased in their frequency and relative importance within the population⁴¹⁶.

Given the lack of quantitative evidence in relation to the total number of competitors within the ice cream market and to the individual effects of each mix component on relative brand shares, it was not possible to establish fitness as operationally defined (**Proposition 3b**, Figure 135). There are, however, strong qualitative indications that make fitness differences most likely (Figure 124). Future research ought to investigate this dimension with the necessary quantitative data.

⁴¹⁶ Evidence illustrating an increase in the relative importance of practices within the population includes, increased retailer take up of exclusivity contracts within the traditional trade in relation to those retailers with their own cabinets, increases in the number of retailers trading in ice cream in contrast to those not, the proliferation of domestic refrigeration, increases in ice cream purchase and consumption in relation to imperfect substitutes, and, increases in the different number of situations to buy and eat ice cream to the extent that take-home and dessert ice creams appeared and grew. It is important to note that all these phenomena changed continually and gradually.

Figure 136 – Research Proposition 4

Complete Support for the Proposition

Proposition 4: The Units of Selection	
<p>There is selection <i>of</i> the marketing repertoire of firms and selection <i>for</i> (directly) its marketing practices (the entire phenotype) including the characteristic properties of the mix (phenotypic characteristics) and <i>for</i> (indirectly) the learning history (rules) that has contributed to such practices and properties (the genotype).</p>	<p>Source: Chapter 3, Section 3.4.3B</p>
Proposition 4.1: The Selecting Consequences	
<p>The properties for which the phenotype and genotype are selected for are causally involved in the selective process because they confer differential advantage in addressing selective criteria. Free riders have no such causal involvement.</p>	<p><i>Suggested Refinement</i></p>

The key findings with respect to **Proposition 4** (Figure 136) strongly indicate the need for retaining Sober’s (1984) distinction to clarify and strengthen Skinner’s cultural analogy. It forces the examination of the properties of marketing practices indicating why these properties conferred advantage. These are the *selecting* consequences, i.e., the consequences of practices that were causally involved in selection and not others. Through the distinction, for example, Chapter 5 hypothesises the reasons why retail marketing practices offering exclusivity agreements were selected for and retained in Wall’s repertoire⁴¹⁷.

The discussion also provides additional support for rejecting the claim of the circularity of reinforcement: not all consequences of behaviour are reinforcing (response strengthening) or punishing (response weakening), and

⁴¹⁷ Marketing mixes that offered exclusivity to retailers (intermediation practices with a particular feature) within the traditional trade had consequences that satisfied retailer reinforcement criteria better than others mixes that did not contain the feature (exclusivity contracts removed and reduced the aversive consequences of owning and operating a freezer cabinet, reduced managerial decision making effort considering that most rival brands were functionally equivalent to retailers, and so on). Mixes offering exclusivity thus resulted in increases in sales, profits, market share, and rate of return on average capital employed. Within the traditional trade, there were no nationwide manufacturers not offering freezer exclusivity. This underscores the point that selection always occurs in relation to a particular environment (Hodgson 1994; Hodgson and Knudsen 2010) – indeed, exclusivity was not a successful unique selling proposition among supermarkets and home freezer centres within the grocery trade because these retailers owned their own refrigerating equipment. In addition, the business model of secondary manufacturers seems to have diluted the need to rely on exclusivity (see also Chapter 5, Section 5.5). Thus, the *internal selective environment* (Knudsen 2002) may have selected against offering exclusivity.

that some consequences do not produce changes in the future rates of response while others do (e.g., Zeiler 1978; Foxall 1990; Catania 1998; Cooper *et al.* 2007; Moore 2008; Tonneau 2008).

The interpretation also suggests several important working hypotheses for future research: (1) Some practices and their characteristic traits have properties or consequences in relation to some selective criterion that are more adapted to conferring advantage as opposed to those practices that do not have the same consequences. The practices with the advantage conferring properties contribute to repertoire survival and, more importantly, to the ability of the firm to reproduce literal exchange transactional behaviour among its customers because, in interaction with prevailing environmental contingencies, they are more effective in producing these consequences than others⁴¹⁸. (2) The advantage conferring properties of a particular behavioural trait operates relative to other traits (Dahlbom 1984). (3) Other practices and traits are less suited to contributing to the survival of the repertoire because, in interaction with prevailing contingencies, are less effective in producing these consequences. (4) Some acquired practices and their characteristic traits that are suitable for a particular environment may not be necessarily suitable for a similar environment due to respective idiosyncratic differences in the selective criteria governing the environments.

Although the case has contributed to clarifying the issue of units of selection within Skinner's evolutionary analogy, the conclusions drawn with respect to the properties conferring advantage are based on qualitative evidence and the combined results of all properties. There was insufficient evidence to provide a more exacting investigation. Future research ought to be directed towards identifying and examining a single or a small set of related properties through quantitative methods.

⁴¹⁸ Recall: (a) practices and their characteristic traits relates to exclusivity contracts providing freezer cabinets at a nominal fee of £1 and Wall's assuming the burden of maintained costs. (b) Properties or consequences of these practices in relation to some selective criterion relates to the removal and reduction of the averseness of traditional retailers to owning and maintaining a freezer. (c) Exclusivity conferred advantage because the practice increased retailer profitability and reduced of utilitarian and informational costs associated with uncertainty at better rates than those practices that did not offer a free freezer and waiver of maintenance costs. (See also Chapter 5, Section 5.5).

Figure 137 – Research Proposition 5

Partial Support for the Proposition

Proposition 5: The Personal Variables Relating to the Firm	
The individual firm is represented within the BPM by managerial deliberation and planning, states of deprivation and satiation, learning history, and the business model.	<i>Source: Chapter 4, Section 4.3.1A</i>
Proposition 5a: The Personal Variables Relating to the Firm	
The individual firm is represented within the BPM by managerial deliberation, planning and absorptive capacity, states of deprivation and satiation, rules derived from the bilateral contingency relationship between the firm and its shareholders (as separate legal entities), learning history, and the business model.	<i>Suggested Refinement</i>

The analysis and discussion provides sufficient evidence to support characterising the firm via a number of personal variables within the BPM (**Proposition 5**, Figure 137). Chapter 5 demonstrated the explanatory power of business model, deprivation, and learning history. However, the evidence suggests a number of other dimensions that need consideration in future research, namely, absorptive capacity and the rules emerging from the behavioural interactions within the bilateral contingency between the firm and its owners. The interpretation and discussion suggested additional refinements including an improved operational definition of deprivation.

Future research within the Marketing Firm ought to adopt and further develop these refinements when using the BPM to characterise the behaviour of firms. With respect to absorptive capacity, for example, future research ought to investigate the phenomenon especially in the light of (a) the characterisation of entrepreneurship and strategy formulation emerging from such works as Minkes and Nuttall (1985), Foxall and Minkes (1996), and Mintzberg (2007), (b) the distinction between exploration and exploitation behaviour of firms made by March (1991), and, (c) the relation between absorptive capacity and the entrepreneurial dimension of firms and links to firm

performance (see, Zahra and George 2002; Zahra 2008; Wales *et al.* 2013; Engelen *et al.* 2014)⁴¹⁹.

In addition, research should be directed towards designing case studies that analyse the parallel developments of parent, child, and sibling organizations to understand the nature of the bilateral contingencies and on selective replication of characteristics across conglomerate organizations. The evidence was extremely limited in this respect. However, both histories of Wall's and Glacier indicate possible avenues for further investigations.

Future research within the Marketing Firm perspective is also directed towards developing operant interpretations and research on such dimensions as business models as rival explanations to cognitive approaches.

Figure 138 – Research Proposition 5.1

Complete Support for the Proposition

Proposition 5.1: The Behaviour Setting Faced by the Firm	
<p>Operating simultaneously, independently, and in combination, these variables are activated by the external environment and <i>function to prime the setting</i>. The behaviour setting activates the personal variables and the salience, presence, and absence of stimulation is established. The personal variables determine which stimuli achieve <i>discriminative</i> function (which elements are reinforcers and punishers) and which stimuli achieve <i>motivational</i> function (i.e., the salience and effectiveness of the stimuli or the degree to which a consequence is reinforcing or punishing within the particular situation).</p>	<p>Source: Chapter 4, Section 4.3.1A</p>

Personal variables were also essential in elucidating (a) the activation of factors responsible in determining the salience, presence, and absence of stimulation, and, (b) the priming of extra-personal variables to distinguish between S^Ds and MOs (**Proposition 5.1**, Figure 138). The evidence on MOs, for example, was particularly compelling and the continued use of the concept and its distinctive characteristics is suggested. Only evidence for establishing operations has been found. However, this does not mean that abolishing

⁴¹⁹ Refer to Lane *et al.* (2006), Todorova and Durisin (2007), Volberda *et al.* (2010), and Lewin *et al.* (2011) for more information on absorptive capacity. Lavie *et al.* (2010) provide a strong review of the literature on exploration and exploitation. These issues also relate to how the firm captures value for its stakeholders to the extent that Pitelis and Teece (2009) emphasise the importance of addressing the issue of value creation and capture as an additional explanandum in the theory of the firm.

operations is not a useful sensitising concept. Future research ought to focus on instances of both across different industries to further investigate the phenomenon and to establish whether the applicability of the construct transcends the ice cream industry.

Figure 139 – Research Proposition 5.2

Partial Support for the Proposition

Proposition 5.2: The Regulatory Dimension – Continuity, Heritability, and Replication	
<p>The personal variables hold <i>regulatory dimension</i> since these signify the potential for the continuity of already acquired behaviour within sufficiently similar behaviour settings. Thus, if practices continue these personal variables signify <i>replication and heritability</i> of the rules summarising the contingencies expressed by the variables. (Given the personal variables summarising the individual firm sufficiently similar settings occasion behavioural continuity.)</p>	<p>Source: Chapter 4, Section 4.3.1A</p>
Proposition 5.2a: The Regulatory Dimension – Continuity, Heritability, and Replication	
<p>Learning history, managerial deliberation and planning, and the business model hold <i>regulatory dimension</i> since these signify the potential for the continuity of already acquired behaviour within sufficiently similar behaviour settings. Thus, if practices continue these personal variables signify <i>replication and heritability</i> of the rules summarising the contingencies expressed by the variables.</p>	<p><i>Suggested Refinement</i></p>

The business model, learning history, and managerial deliberation were all found to be causally involved in the continuity, replication, and the heritability of marketing practices. The rules summarising these dimensions provide a strong basis for characterising the genotype (quasi-stable properties) and the evidence demonstrates selection for some of these rules. Deprivation, on the other hand, did not hold regulatory function. The evidence demonstrates that the factor was involved in determining the salience, presence, and absence of environmental stimulation. The findings thus suggested a refinement to **Proposition 5.2** (Figure 139).

Figure 140 – Research Proposition 6

Complete Support for the Proposition	
Proposition 6: Variation in the Practices of the Firm	
Variation in the practices of the firm is operationalized as ranging from slight to substantial departures from recurring and stable practice and recognisable as: (1) increases or decreases, appearance or disappearance of marketing practices and related features • (2) Changes in the topography of the various marketing practices emitted by the firm and related features • (3) Changes in the apparent function of the various marketing practices • (4) Search or exploratory behaviour (including conducting research and maintaining market intelligence) followed by other instances of variation.	Source: Chapter 4, Section 4.3.1B

Given the focus on selection dynamics, characterising variation in the manner stated in **Proposition 6** (Figure 140) sufficed. The evidence supported the definition and the employed operant interpretation in terms of problem solving. Given Wall's recurring efforts towards generating novelty, variety, and commercially successful innovations and its efforts towards technological progressiveness, the discussion draws additional insights from the BPM to hypothesise Wall's behaviour as falling within the Accomplishment (Extended Problem Solving) contingency category. Future research should explore the applicability of contingencies categories to firm behaviour in greater detail. For example, the response classes in the contingency category matrix may be operationalized and examined in terms of whether learning history predisposes rule creation rather than rule following behaviour among successful firms in contrast to less successful firms.

Given advancements in operant research on human creativity and behavioural variability (e.g., Dewitte and Verguts 1999; Neuringer 2002, 2003; De Souza Barba 2012; Neuringer 2012), future research is directed to construct a more robust characterisation of variation and its relationship with such dimensions as observation and rule creation.

Characterising the marketing practices of firms through the elements of the marketing mix was also useful. The inherent limitation of this approach is that *all* firm behaviour was interpreted through a marketing lens. The case of Glacier's growth via acquisition and the formation of a complex web of holding

and trading companies apparently to limit its liability to market risks and uncertainty cracks the lens since the perspective ignores these *legal* dimensions. Future research is directed to the operant-cum-economic analysis of such legal instruments as limited liability companies and contracts to explore these issues further⁴²⁰.

Figure 141 – Research Proposition 7

Complete Support for the Proposition	
Proposition 7: Utilitarian and Informational Reinforcement	
The emissions of the firm are reinforced and punished by the relatively high to relatively low patterns of positive and negative utilitarian and informational outcomes of behaviour-environment interactions.	<i>Source:</i> Chapter 4, Section 4.3.1C

Proposition 7 (Figure 141) finds support in the evidence interpreted to demonstrate the utilitarian and informational reinforcers shaping and maintaining firm behaviour (selective retention) and the punishers involved in selective elimination. The dimension also strengthens the characterisation of the function of the firm being the acquisition and retention of customers while economising on transaction costs, i.e., the costs of using the market mechanism (Foxall 1999b).

Informational reinforcement was redefined to recognise feedback collected by the firm on its own performance, on that of others, and on prevailing environmental contingencies. The redefinition recognises the importance placed within evolutionary economics on information flows (e.g., Metcalfe 2005; Hodgson and Knudsen 2010) and incorporates Skinner’s descriptions of rule creation and problem solving (e.g., Skinner 1966b, 1969). As redefined, informational reinforcement also provides a basis for developing an operant interpretation of knowledge, a concept of central to evolutionary economics (e.g., Nelson and Winter 1982; Foster and Metcalfe 2001; Nelson and Winter 2002; Metcalfe 2005; Dosi and Marengo 2007; Foster and Metcalfe 2012; Dosi 2013). Knowledge has an important role to play in the explanation of the generation of innovation and, as seen from the evidence, in part

⁴²⁰ After all, the firm is conferred with a personality at law distinct from its shareholders and employed members (with rights and obligations). Hodgson (2006) and Hodgson and Knudsen (2010) are among the few who have explicitly considered the firm as a legal institution within evolutionary economics and who recognise the special status the legal dimension confers to firms.

explaining the escape-avoidance repertoires Wall's emitted in the presence of uncertainty.

Figure 142 – Research Proposition 8

Complete Support for the Proposition

Proposition 8: Behavioural Interaction within Bilateral Contingencies	<i>Source: Chapter 4, Section 4.3.2B</i>
Independently and in aggregate, consumer, customer, and rival patterns of behaviour function as scope and consequential stimulus events within the marketer behaviour setting and, thus, come to regulate and modify the marketing practices of the firm over its history of interactions with the social environment. Physical contingencies function in a similar way.	
Proposition 8.3: Scope Qualification and Reinforcement Regulation Within and Across Generations	<i>Suggested Refinement</i>
The selective environment functions to qualify behaviour setting scope and regulate patterns of reinforcement within any single generation and across two or more generations.	

The evidence supports characterising the marketer behaviour setting, i.e., the external selective agent, in terms of physical and social contingencies (**Proposition 8**, Figure 142).

The main social contingencies included relations with consumers, rivals, and retailers. The interpretation notes how these factors regulated and modified the marketing practices of Wall's over its history of interactions with the market environment. The behaviour setting also demonstrated regulatory and temporal dimensions as predicted by the BPM. The notion of bilateral contingencies of reinforcement proved significant in demonstrating the dynamic nature of behaviour-environment relations, the distinction between social and literal exchange, and, most importantly, reciprocity expressed in terms of mutually reinforcing and punishing social and literal exchange interactions. The reciprocal nature of continual behaviour-environment interaction underscores the dynamic and non-linear nature of the causal sequences underlying natural selection (Plotkin and Odling-Smee 1981; Dahlbom 1984; Metcalfe 2005). In addition, the non-linear interactive process also highlights the significant role that coordination efforts play in socio-economic evolution (Metcalfe 2005). Coordination manifested itself in efforts that functioned to *circumscribe* and *stabilise* market transactions either to approach the benefits of literal exchange

or to escape-avoid the sanctioning effects of operating more (c.f., Coase 1937, 1988)⁴²¹.

Figure 143 – Research Proposition 8.1

Complete Support for the Proposition

Proposition 8.1: The Selective Environment Functions to Qualify the Setting Scope	
<p>Consumer, customer, and rival patterns of behaviour function as antecedent utilitarian and informational scope stimulus events by virtue of the learning history of the firm to selectively restrict or encourage patterns of marketing practices thereby regulating and modifying particular practices over others. Physical contingencies function in a similar way.</p>	<p>Source: Chapter 4, Section 4.3.2B</p>

As discussed in the previous chapter, the evidence demonstrating the setting scope qualification effects of the selective environment on the behaviour of Wall’s (**Proposition 8.1**, Figure 143) is particularly compelling. The interpretation also supports the continued use of the measure adopted by Vella and Foxall (2011) to determine setting scope stricture.

Figure 144 – Research Proposition 8.2

Complete Support for the Proposition

Proposition 8.2: The Selective Environment Functions to Regulate Patterns of Reinforcement	
<p>Consumer, customer, and rival patterns of behaviour function as utilitarian and informational consequential stimulus events by virtue of the learning history of the firm to selectively restrict or encourage patterns of marketing practices thereby regulating and modifying particular practices over others. Physical contingencies function in a similar way.</p>	<p>Source: Chapter 4, Section 4.3.2B</p>

The evidence also demonstrates the pattern of reinforcement regulation effects of the selective environment on the behaviour of Wall’s (**Proposition 8.2**, Figure 144) and vice versa. The measure established to determine how patterns of reinforcement regulation comes about is upheld. The interpretation

⁴²¹ It is on this basis that Proposition 1 (Figure 129) was amended to explicitly distinguish reciprocity or the *mutual* positive and negative reinforcement and punishment between and among social parties. The findings on the mutually reinforcing nature of behaviour-environment interaction suggest that similar future research should explicitly consider both the potential and actual consequences of behaviour of the firm on the environment and the potential and actual consequences of social actors on the firm when analysing evidence (and where possible). Bilateral contingencies are of considerable use in this respect.

also supports the continued use of the measure adopted by Vella and Foxall (2011) to reinforcement regulation.

Of particular significance is the analogy drawn between the flow of patterns of reinforcement and schedules of reinforcement: The evidence on these schedules point to the usefulness of the analogy in understanding how environmental contingencies function to arrange the flow of reinforcers and punishers in terms of time delay between an emission and its reinforcing or punishing consequences or the amount of effort needed to produce reinforcement. The interpretation of the evidence on the flow of reinforcement arising from particular environmental arrangements as analogous to concurrent schedules, for example, throws light on the nature of complexity inherent to real world behaviour settings and deepens the understanding of behavioural selection via operant conditioning. The findings encourage the continued use of the construct especially because these coincide with the broader findings on concurrent schedules of reinforcement in operant research (Foxall 1990, 1994, 1998b; Foxall and Schrezenmaier 2003; Cooper *et al.* 2007; Foxall 2007a, 2010b). Future research ought to broaden and refine the analogy to include other aspects of schedules of reinforcement from current research to establish and incorporate their usefulness, and further investigate the aspects outlined in the discussion.

Figure 145 – Research Proposition 9

Partial Support for the Proposition

Proposition 9: The Market Problem	
The main problem faced by the firm is profitable customer acquisition and retention via its marketing mixes.	<i>Source:</i> Chapter 4, Section 4.3.2C

The interpretation and the discussion suggests retaining Proposition 9 (Figure 145) by addressing two shortcomings emerging from the SMC as originally described in Chapter 4: (a) a redefinition of the market, and, (b) a reconsideration of the function of the firm. Chapter 5 combines the definition of the market by Ménard (1995) to that of Foxall (1999b) and hypothesises that the function of markets, as contingencies with regulatory dimension, is to enable

significant volumes of literal exchange transactions between buyers and sellers. Within the Marketing Firm, firms emerge to capture some of these transactions through coordination efforts that function to circumscribe exchange relations while economising on transaction costs (Foxall 1999b). This is clear, for example, in the efforts of Wall's. In parallel but separately, Loasby (2000) argues that Ménard's (1995) definitional emphasis on capturing a *large* number of literal exchange transactions on a regular basis implies the associated problem and costs of defining marketing mixes that generate a critical mass of new and repeat customers that guarantee a satisfactory profit *and* return on investment. The pioneering efforts of Wall's in creating the market for mass produced branded ice cream, in spearheading the expansion of a nationwide retail network and technological improvements, and in sowing the seeds of the grocery trade raised questions with respect to whether the Marketing Firm accounts for the entrepreneurial role of market creation. On the basis of the evidence, the discussion in Chapter 5 turns to Loasby (2000) and Drucker (2007) to broaden the assumption made by the Marketing Firm with respect to why firms emerge and their function. Thus, firms, as profit making organisations, exist "to create a customer" and the only two entrepreneurial function of firms are marketing and innovation (Drucker 2007, p. 33).

6.4 Case Study Method and Research Design

Foxall (1994, 1995c, 1998b, 2001, 2010b, 2013) emphasises the importance of conducting operant interpretations systematically and rigorously in a manner that is open to evaluation. His position stands in contrast to Skinner's approach to interpretations – that they are "merely useful, not true or false" (Skinner 1984g, p. 364) – because it renders theory testable and falsifiable. In addition, Foxall's call for going beyond experiments to incorporate a broader methodological arsenal finds resonance among some behaviourists (e.g., Leslie 2000; Leigland 2010; Mace and Critchfield 2010; Poling 2010; De Souza 2012; Vyse 2013)⁴²². Unlike Foxall (see especially 2010b), however,

⁴²² Vyse (2013), for example, urges a reconsideration of the strict behaviourist position vis-à-vis the EAB. Although Vyse does not go as far as Foxall to embrace interpretation as a systematic mode for generating valid and reliable knowledge claims, he concludes "If we choose to define ourselves by a set of methodologies, then I believe we are in trouble. If, on the other hand, we are united by the view that a science of behaviour is possible ... and by the kind of conceptual rigour that has served us so well, then I believe the future is bright" (Vyse 2013, p. 133).

none suggest or devise a proper research method for conducting interpretations more scientifically. Interpretation is awarded little importance: Despite the role it plays when not enough is known about some phenomenon or when an EAB is not possible (Moore 2010), interpretation is regarded as armchair speculation (Staddon 2001), narrative speculation (Mace and Critchfield 2010), conceptual or retrospective analysis (Vyse 2013)⁴²³.

In line with the views on interpretation of Lee (1988) and Foxall (1994, 1995c, 1998b, 2001, 2010b, 2013), the research has taken a more systematic and rigorous approach towards interpretation to accomplish its objectives. The research was conducted using a widely used tried-and-tested method in the social sciences to develop a plausible, useful, objective, valid, and reliable interpretation of the evidence as the basis for the evaluation and, in parallel, to develop and refine theory. The case study research method and its suggested design were found to be robust and adequate to accomplish the objectives of the research. There were no serious flaws that jeopardised the integrity of the project. However, a number of issues and limitations emerged and need to be addressed in future research.

6.4.1 The Steady State Logic Design

The case study followed a replication logic design identifying two distinct situation-generations and using the distinction to construct the analysis as if it were a steady state experiment. The strategy of mapping the marketer situation as a single notional generation proved extremely useful throughout the analysis and the discussion. It was upon this basis that the analogy between operant conditioning and natural selection could be examined and found to be appropriate. Setting a baseline (1929 to 1969) and tracing the nature and extent of change between the baseline and the treatment condition (1970 to

⁴²³ As explained in Chapter 1 and 3 (see also Appendix 3, Section A3.3), Skinner's evolutionary analogy is an exercise in narrative interpretation and revealed inter-related methodological and conceptual weaknesses. Methodological weaknesses included not attending properly to the broader literature, while conceptual weaknesses related to problems of incompleteness. The loose approach through which Skinner developed his interpretation stands in stark contrast to his rigorous approach to experimentation. Approaching the subject with greater rigour might have motivated greater resonance of his ideas among his critics in Catania and Harnad (1984) and a broader audience – “by and large Skinner referred to the analogy merely to point out surface similarities and consequently that he never employed it to any real conceptual advantage” (Plotkin 1987, p. 39).

ca.1978) was instrumental in accomplishing the goals of the research. Future research ought to use the strategy and improve upon it. The main advantage of the steady state strategy is a reduced reliance on inference in demonstrating reinforcement learning.

The only issue with the strategy, however, arose with respect to the adequacy of the arbitrary cut-off dates used to distinguish the two generations. The discussion in Chapter 5 demonstrates that the PLC appears to provide a sounder basis for delineating generations and marketer situations for study. The four distinct stages identified could have easily been used to represent distinct generation-situations. However, rather than risking the validity and reliability of the research by altering the pre-structured design (see Yin 2014) it was decided to remain faithful to the original design logic and retain the two generation-situation distinction instead. This said, delimiting a larger number of distinct stages to represent a notional generation improves the analysis and interpretation by providing more confidence in the result. A greater number of generations distinguished yields more opportunities to trace the extent of replication. Future research is encouraged to consider the stages of the PLC as arbitrary cut-off dates to delineate notional generations.

6.4.2 The Use of a Single Case

The research was a single case study and this allowed a very intensive and in-depth historical study of a particular phenomenon embedded within a very specific and ever-changing context (e.g., George and Bennett 2005; Yin 2014).

Future research ought to consider relinquishing some of this depth in favour of adopting a multiple case study design to overcome the limitations of single cases and to construct comparisons across different organizations within the same industry, and within related and unrelated industries. Using several cases has marked advantages on the richness of the analysis, discussion, and the theoretical conclusions that may be drawn (Yin 2014). Although there is relatively little active comparison between Wall's and Glacier in the analysis, the research has uncovered significant differences between the two organizations that raise interesting questions. For example, in contrast to Wall's, Glacier

appeared to have a tendency towards rule-following. A comparative case study could have explored this dimension in greater depth.

So far, empirical research within the Marketing Firm has only investigated the practices of a single organisation: the activities of Wall's within the ice cream market. Therefore, the processes observed and the support found for the interpreting marketing behaviour from an operant perspective and in terms of Skinner's evolutionary analogy may be particular only to Wall's and to the UK ice cream market. Any support for theoretical claims may be idiosyncratic (Vella and Foxall 2011; Miles *et al.* 2013; Yin 2014) and this case does not meet the criteria of external validity. In addition, there are no comparable behaviourist studies for cross-referencing and this limits the generalizability of the finding outside the confines of the practices of Wall's⁴²⁴. Therefore, only analytic generalisation is invoked (Lee 1999; Vella and Foxall 2011; Miles *et al.* 2013). Future research is directed toward accumulating more evidence from comparisons of multiple cases for further theoretical development⁴²⁵.

Case selection was conducting via purposive extreme sampling with the expectation that Wall's would represent an important outlier. The sampling technique was extremely important in clarifying theoretical points. For example, the size and extent of Wall's dominance was of theoretical interest because while the Marketing Firm presupposes that firms are generally limited in the degree of control they exercise (Foxall 1999b), Vella and Foxall (2011) find otherwise. The question was thus raised: Does this dominance significantly dilute the behaviourist claim of environmental primacy in determining the behaviour of the firm? Or is this dominance a result of operant selection?⁴²⁶ Given the complexity of the immediate selective environment, the selective

⁴²⁴ This said, in the process of constructing the case for Wall's, it does seem that Glacier's behaviour was subject to similar evolutionary dynamics.

⁴²⁵ It should also be noted that the design of the case implicitly followed the structured focused comparative logic to remedy for this problem for future research. The design logic is constructed in a certain way (e.g., the development of an explicit sensitizing framework with operational definitions and measures, conducting data collection through explicit questions, and so on; see also Chapter 2, Section 2.3.5) that allows for consistent treatment of data across different studies to facilitate accumulation and comparison of evidence and interpretation, replication or falsification of results and sensitizing concepts, and the cumulative synthesis of knowledge over time (George and Bennett 2005).

⁴²⁶ See Chapter 2, Section 2.3.4.

pressures from the frozen food industry, and the discussion on reciprocity, it is now clear that behavioural emissions and the selective environment are loosely coupled and perpetually intertwined in co-shaping processes. Therefore, contexts *do* effect marketing practice. Dominance is *only* a *result* of the selection process and indicates a change in the distribution of the proportion or frequency of traits (e.g., number of retailer relationships tied to Wall's relative to the average manufacturer) in the population where those traits exhibiting higher fitness appear more frequently in the population.

6.4.3 The Use of a Single Source of Data and Triangulation

The strength of the case study method in evaluating and developing theory depends on the data that populates it. The integrity of the data is undeniable as exemplified by the lengths to which the Commission went through to establish a valid and reliable calculation of market size and market share⁴²⁷. The time period covered in the report was sufficiently long and relatively continuous to demonstrate the theoretical processes and outcomes over generations and to highlight comprehensive coverage of the historical events experienced by a given population (Aldrich and Ruef 2006). The level of detail was instrumental in demonstrating the selection-operant conditioning analogy and rendering a unique interpretation of the complex influences by the combination of socio-economic relationships, physical parameters, uncertainty, the lack of foresight, and the imperfect market information on marketing practices. The reports also contained sufficient material to refine the SMC, extend the Marketing Firm, and raise questions to be addressed in future research.

However, since a single source of data was used, the research had a finite capacity for producing a broader range of empirically grounded rival explanations (Miles *et al.* 2013) or for generating novel evidence to address emerging themes (Vella and Foxall 2011) . Clearly, relying on a single source limits the capacity to produce rival explanations. To compensate, the analysis and interpretation assumed a critical approach to the evidence to actively

⁴²⁷ See especially Appendix A5, Section A5.6.4.

identify alternative explanations⁴²⁸. One of the limitations of the Commission's report arising from the scope of its investigation was that more prominence was given to the practices of Wall's during the 1960s and 1970s than to its earlier history. Two unexpected themes emerged during the data presentation regarding relatively minor details of Wall's practices at the point of market entry and changes in the frozen foods industry. Additional sources, namely, the Commission's investigation on Frozen Foodstuffs (Monopolies and Mergers Commission 1976) were introduced to explore the themes and limit the reliance on inference⁴²⁹. Although the new data was not catered for within the original design, none of the original research propositions was altered or refined thereby altering the original scope of the research (Yin 2014) and the quality of the Frozen Foodstuffs paralleled that of the Ice Cream Report. The remaining sources were used sparingly. As Vella and Foxall (2011) point out, the depth and richness of Ice Cream report compensates for the identified limitation.

Future research might consider the option of using organisational histories instead of or supplementing regulatory investigations.

The omission of certain data from secondary archival evidence compiled by third parties for different research objectives underscores the importance of triangulation and indicates a more pressing need to use multiple sources of

⁴²⁸ See, for example, Patton (2002) and Yin (2014) on the threats to the quality of research arising from this point. See also Section 6.4.4.

⁴²⁹ For example, one of the themes emerging from the data is the Unilever↔Wall's bilateral contingency (see Chapter 5, Section 5.2), which led to a refinement to the BPM for marketing practices (see Figure 137). Besides the salient punishing effects of seasonality on the existing pork business, during the 1920s, Unilever may have had a selective influence in the choice of business model and the market in which Wall's was to participate. To clarify this point and in a bid to relax an excessive reliance on inference, the analysis makes very brief reference to two additional sources, namely, a quick analysis to Unilever's history and to the Thomas Wall Trust (2014) (see Appendix 5, Section A5.3.1). The Commission also made reference to a number of paragraphs within the Frozen Foodstuffs report (1976). The analysis and interpretation considered these paragraphs and incorporated the details by pointing out an additional factor (missed by the Commission) that encouraged the growth of the market and the emergence of the grocery trade – the development and proliferation of industrial and domestic refrigeration technologies. The quality of the additional report was similar to the Ice Cream Report. Given the limited use of the additional sources and the relatively high quality of the Frozen Foodstuffs Report, the introduction of the additional sources did not taint the validity and reliability of the analysis and enhanced conclusion drawing in some respects. The Ice Cream Report (1994) was also used to see whether relevant quantitative data was available for use. In fact, this report provided figures for market shares of the national manufacturers of the impulse market (see Appendix 5, Section A5.2.6, Figure 176 on page 505).

data in future⁴³⁰. Three other issues highlight the need for triangulation on multiple sources: (1) it was not possible to demonstrate differential reinforcement through successive approximations. For example, the report lacked sufficient historical detail to explore the gradual change from a relatively narrow range of products to a comprehensive, diverse, and relatively broad range of ice creams. Even the changes of emphasis from the traditional to the grocery trade were insufficient to claim complete support for the relevant proposition. In these cases, therefore, the existence of a process analogous to successive approximation was only inferred⁴³¹. (2) There was a lack of details with respect to discarded practices and, consequently, an inability to claim full support for processes analogous to positive punishment even though there are indications of such an analogous process involved in selective elimination. (3) Economic fitness could not be demonstrated due to a lack of quantitative data spanning the entire history covered by the report and an inability to determine a proper estimate of the number of competitors to derive the measure suggested⁴³².

Overall, however, the evidence was highly appropriate and relevant for addressing the research objectives and contained detailed explanations and expositions of the main variables of theoretical interest. Another significant advantage of using secondary data that was not designed, collected generated, and compiled by the present investigator is that enjoys the characteristics of a “*double blind test*” (Hakim 2000) thereby eliminating the risk that the researcher introduces bias in favour or against hypotheses.

⁴³⁰ Thus, Vella and Foxall (2011) are only *partially* correct in arguing that the quality of the case and the extent of triangulation therein compensates for using a single source of evidence and for using archival secondary data rather than primary interview data. This said, it is highly doubtful that any single researcher would be able to generate such a set of deep high quality longitudinal evidence. In addition, no other source of documentary evidence of equal quality and depth was found on the subject. Both Datamonitor and Keynote, for example, published ice-cream industry reports. However, the reports were very brief and did not cover the entire history of the industry. Using organisational histories as a source of data brings with it a new series of challenges including and especially related to matters regarding disparate research objectives and quality of accounts (e.g., Bryman and Bell 2007).

⁴³¹ Thus only partial support was found for the operant process of shaping although there is a strong indication of an analogous process.

⁴³² The Commission included a similar statistic that compared the rate of return of Wall's, Glacier, and secondary manufacturers to the rate of an average member of the food industry. Together with market share, the statistic yields a rough indication of the relative fitness of the combined strategies adopted by the various organizations.

Researchers should continue using these sources of data as long as they remain aware of the possible mismatch between the evidence contained therein and the need to demonstrate some of the finer theoretical points (Vella and Foxall 2011). Researchers should also consider alternative sources including authoritative organisational histories, and, should triangulate on multiple sources.

6.4.4 Strategies for Analysis: Tracing Causal Processes and Rival Explanations

Tracing the causal processes and changes therein was guided by a series of a priori research propositions and accompanying operational definitions and measures⁴³³. In addition, the analytical strategy also entailed attending to rival explanations arising from the evidence where possible. Actively generating empirically grounded rival explanations to counter the possibility of premature and spurious conclusions was implicit throughout the analysis. In most cases the most plausible explanation was provided⁴³⁴. The analysis strategy also emphasised the need to finalise any conclusions only *after* the process was exhausted (Miles *et al.* 2013). This ensured validity and reliability. The approach proved extremely strong and aided in ensuring that the wrong conclusions were not drawn thereby securing validity and reliability.

Two additional steps were taken to minimise the dangers of arriving at the wrong conclusions: (a) additional data was introduced when the evidence raised doubts; and, (b) a critical stance was adopted in relation to evidence and theory to identify weaknesses in the evidence, in the conclusions of the Commission, and in the theoretical constructs adopted⁴³⁵. For example, Chapter 5 notes a possible source of unintended bias in Commission's investigation: no *detailed* evidence on selective elimination was found, the main

⁴³³ For this sub-section see also Appendix A2.6 (especially Section A2.3.6).

⁴³⁴ One such conclusion is an explanation that counters the opinion of the Commission with respect to which factors influencing the development of the ice cream industry during the 1960s and 1970s. It appears that the Commission did not place enough importance of the development and proliferation of industrial and domestic refrigeration technologies as a factor influencing the growth of the ice cream market. More tentative or doubtful conclusions (e.g., the failure to explain why Wall's dropped outlet exclusivity; the factors influencing Wall's original entry into the ice cream market) were flagged. See Appendix 5.

⁴³⁵ To avoid bias, researchers should maintain a critical stance through an explicit awareness that the theoretical perspective chosen is a partial view and that rival explanations are possible and may be poised to better explain the phenomena under study (Dnes 1992; Yin 2014).

problem being related to a lack of narrative evidence describing why such practices as outlet exclusivity were stopped. This is probably due to a bias in favour of investigating only enduring practices current at the time of the investigation. In tracing causal processes, Aldrich and Ruef (2006, p. 32) warn against this form of *selection bias*. They advise to avoid focusing only on the surviving practices thereby neglecting apparently discontinued strategies. Such biases towards apparently adapted rather than maladapted strategies misrepresent selection processes by depicting only part of their evolutionary history. Attention must be directed at both through the use of counterfactual analysis that demonstrates how alternative practices were filtered out (Aldrich and Ruef 2006). In addition, researchers should consider (1) comparing two extreme cases, a relatively successful firm versus a relatively unsuccessful one⁴³⁶. (2) In constructing case studies based on regulatory investigation, the evidence considered must include the outcomes of regulatory intervention and subsequent histories to understand whether any selectively eliminated practices do not reappear (e.g., the case of outlet exclusivity). (3) Using multiple sources of evidence rather than a single one.

6.4.5 Strategies for Interpretation

The explicit strategies for interpretation for conducting a functional analysis of behaviour based on qualitative evidence proved invaluable especially when dealing with ambiguity⁴³⁷. Any inferences and appeals to either the reasonable conduct of business or theoretical distinctions derived from marketing were made explicit in the presentation, analysis, and interpretation of the data⁴³⁸. Drawing reasonable inferences from the data was inevitable.

⁴³⁶ For example, in the case of Glacier there are a greater number of examples of selective elimination within the report.

⁴³⁷ For a description of the strategies refer to Chapter 2, Section 2.3.6 and to Appendix A2.6.

⁴³⁸ For example, the appeal to characteristic strategies used for marketing impulse and FMCG items (Appendix 5, Section A5.3.3A) was made to frame a clearer understanding of the phenomena being described. Also, a number of rules were inferred through an appeal to the reasonable conduct of business including the function of intermediaries within the value chain. Thus, channel structure was defined in terms of stimuli achieving discriminative or motivational function and holding regulatory dimension: the presence or absence of individual members of a channel was interpreted in terms of discriminative stimulus signalling the availability of a possible route to the patterns of reinforcement contingent upon supplying consumers via the channel member. Similarly, the textbook function performed by the channel was interpreted as a discriminative stimulus and posited as a generic business rule within the behaviour setting governing the behaviour of Wall's. Future research ought to account for these rules more explicitly within the framework as part of the regulatory dimension of the behaviour setting faced by any firm.

However, given the objectives of the study, there was lesser reliance on such treatment in contrast to Vella and Foxall (2011) to the extent that in some instances additional evidence was introduced for further clarification.

A. Limitations of Interpretation

When behaviour is emitted in the presence of some particular antecedent event and that behaviour produces a reinforcing or punishing effect, the antecedent events present at the time of the emission may come to serve a signalling function through association or pairing (e.g., Alhadeff 1982; Foxall 1990). Foxall (2007b) alerts to an important assumption underlying this standard explanation of discriminative stimuli: from an operant perspective, both the presence of the stimulus and the pairing *are* assumed and constitute an essential requirement to the explanation of the continuity of behaviour. The concern is further accentuated, when developing operant interpretive accounts of complex human behaviour in natural settings. In addition, the assumption creates problems when it is not possible to identify the various elements of the three-term contingency when behaviour is originally learned and eventually performed (Foxall 2007b).

Within the interpretation there is little basis upon which to claim *when* and *what factors were involved* in the *original* acquisition of stimulus function of certain antecedent events as retailer approach, consumer demand, or the degree of fragmentation in the channel structure. Inevitably, the analysis relied on inference (e.g., reasonable conduct of business) and assumed association. Thus, Foxall's (2007b) arguments seem to weaken the degree of continuity of behaviour claimed in this research. However, several considerations significantly reduce the threat and render the analysis based on these inferences and assumptions relatively *valid and reliable*: (1) reasonable conduct of business and personal experiences in marketing suggest that the organisation of a network of retailers during the entire history of Wall's was a logical response to the extent of fragmentation existing prior to the 1960s and to the need to gain relatively quick access to as many consumers as was possible given a business model based on mass consumption. (2) The evidence clearly shows that *changes* in the rate of retailer approach and in the degree of fragmentation were consistently and persistently positively (qualitatively)

correlated with changes in such repertoires as intermediation, personal selling, and freezer exclusivity. (3) The study of Vella and Foxall (2011) shows that these consumer, channel, and rival behaviour retained stimulus function. (4) In the presence of the emergence of the grocery trade (a stimulus event), Wall's emitted those practices that in the past functioned to shape, maintain, and increase the rate of retailer approach within the traditional segment. This is analogous to *stimulus generalisation* where an individual responds in similar ways to stimulus events that are similar to the original discriminative stimulus (Moore 2008). Arguably, therefore, at some point, retailer approach must have acquired stimulus function.

Future research should retain an awareness of this assumption and employ multiple sources of evidence in an attempt to reduce reliance on inferences. Future research could also be directed to understand the factors involved at the point of Wall's market entry based on the hypothesis that such factors as retail channel fragmentation had already achieved stimulus control. This said, however, the assumption does introduce a limit on the scope of operant interpretations.

6.4.6 Criteria for Evaluation

Considerable time was awarded to data analysis, interpretation, and discussion and the data was revisited on several occasions to ensure that no evidence was omitted, misrepresented, or misinterpreted (Vella and Foxall 2011). For example, through a series of footnotes, the analysis provides readers with direct references to the original paragraphs within the report. This was intended to encourage (and facilitate) comparisons of the analysis and interpretation with the original text. In addition, the notations demonstrate that no evidence was fabricated or treated unfairly and that no relevant evidence was omitted. This demonstrates the manner in which the analysis and interpretation have been constructed thereby enhancing the validity and reliability of the research (Mason 2002).

Although the offered operant interpretation is not definitive (other alternatives are conceivable), the research sought to produce relatively credible and persuasive conclusions that were logically consistent with operant

principles, marketing, and selectionist arguments in evolutionary economics. All deviations from and suggested refinements to orthodox principles were noted and explained.

The SMC framework was explicitly constructed through reference to operant principles and to the neo-Skinnerian approach predicated by the BPM. The framework was purposely designed with the objectives of operationalization and of generating propositions to guide research and to link empirical observations back to theory. These factors enhance plausibility and reliability.

The central emphasis was on constructing a first approximation, a baseline or starting point, as a way to evaluate the applicability of the operant conditioning-selection analogy. Theoretical saturation, as understood in case study research using grounded theory (Eisenhardt 1989), was sacrificed in favour of an in-depth discussion of the wealth of findings in relation to the Skinner's analogy and operant principles. Thus, instead of introducing supporting and conflicting opinions from research on selection dynamics, the research focused on the basic foundational *operant* elements. Attending to such foundations now will allow future research in similar vein to proceed on a stronger basis. It would be interesting, for example, to examine the key findings in relation to relevant research in evolutionary economics in an effort to extend the perspective being predicated herein and generate interest in the application of Selection by Consequences by the wider community of evolutionary economists. Therefore, it is in this sense that the research was useful.

The research was attentive to issues pertaining to construct validity, internal validity, and reliability. The use of sensitizing concepts attended to construct validity, for example, (1) by carrying forward operational definitions and measures from earlier work and refining these on the basis of the performance in the earlier application to research and of their presumed appropriateness to the current investigation; and, (2) by imposing the burden of conducting an explicit critical and empirical evaluation (and falsification) of each construct used. In so doing, several additions and refinements emerged to feed into future research while identifying variables (e.g., informational reinforcement) requiring significant attention. The procedure pointed out where

the SMC was weak in capturing and reflecting the theoretical concepts of interest. As already indicated, a limited range of new sources of data were introduced to clarify the conclusions of the Commission and to point out where inferences and assumptions had to be drawn and made. This strategy underscores the power of case studies as facilitating the search for empirically grounded alternative rival explanations and as promoting a tendency towards falsification rather than verification (Flyvbjerg 2011; Yin 2014).

Internal validity was attended to via the analytic strategies already discussed. Reliability has been secured by creating an audit trail tracing and justifying all the methodological steps and choices increases the potential of the research being repeated and later investigators arriving to similar (rather than identical) conclusions. Where pertinent, the analysis also exposed inconclusive evidence offering explicitly tentative explanations.

In conclusion, the research demonstrates the strength of the case study method in drawing valid and reliable conclusions especially when populated with strong qualitative historical evidence. The main limitation with respect to the study related to the failure of the data to address some of the finer theoretical points and of the research propositions as indicated in the previous sections.

The key findings with respect to method point towards: the continued use of case studies, the significance of systematic and rigorous interpretations in contrast to narrative speculation, refinements in the steady state logic which was exceptionally useful in qualitatively demonstrating operant conditioning, the use of several rather than single cases for the purposes of comparison, and the need for triangulation.

6.5 Original Contribution

The research is the first detailed empirical example of the application of Selection by Consequences to generate an operant interpretation of the

evolutionary selection of marketing practices through a process analogous to operant conditioning. This is the primary original contribution of the project.

The critical literature review contributes by reconstructing Skinner's cultural evolution analogy (excluding his prescriptions for cultural design) from his primary publications on the subject and by elaborating on this view through an appeal to the criticisms of the theoretical dimensions of Selection by Consequences and to the basic selectionist framework in evolutionary economics. The most important contributions of the review relate to suggesting one possible answer to the question of the units of selection through an appeal to Sober (1984) and to the analogy between reinforcement and selective criteria. The theoretical distinction greatly enhanced the interpretation.

The third original contribution relates to the extension of the Marketing Firm perspective by broadening the scope of its application to issues typically examined within evolutionary economics, and, by specifying the elements of the BPM for marketing practices more explicitly and in greater detail than previous work. In so doing, the project may be understood as an operant theory of marketer behaviour akin to the earlier works on consumer behaviour within the BPM research programme (see, for example, Foxall 1990, 1997b). The study also contributes by testing the scope and the limits of the BPM, as an interpretive device, extending its relevance to furthering an operant approach to important socio-economic phenomena. A detailed research agenda is also proposed.

The research also makes a methodological contribution: it provides a more systematic and rigorous way to designing case study research to qualitatively demonstrate and trace processes analogous to operant conditioning.

6.6 Managerial Implications

The main managerial implication of the research derives from the nature of evolutionary investigations and explanation. The approach emphasises historicity and the retrospective examination turns attention to isolating the

advantage conferring properties (the *selecting consequences*) actually produced by strategies and their component features within the selective environment in relation to prevailing selective criteria. The topographical content of strategic behaviour rests secondary to an emphasis on function.

Evolutionary and operant interpretations have much to contribute strategic management⁴³⁹. Evolutionary interpretation equips managers with a deep analytical toolset that forces extended reflection on the history of their respective organisations to pinpoint (1) individual features that have conferred advantage in the past, (2) how these features combine, (3) the reasons why these features, independently and in combination, have conferred advantage, and (4) the possible implications of environmental change on the business and on advantage conferring practices and features. Operant functional analyses and interpretations direct the investigative task to examine the *causal* relation between practices and the actual and empirical *selecting consequences* (i.e., the outcomes that matter) within the environment wherein strategies are implemented. These deep investigations have the ability to answer such questions as *Why has the organisation been so successful in the past? How can the organisation maintain, defend, and build on that success? And, importantly, why have certain practices failed so miserably? Are the marketing practices of the organisation relatively inert? What factors in the learning history of the organisation have contributed to this inertia?*

6.7 Conclusion

The EAB provides researchers with a potentially useful set of principles and concepts appropriate for constructing a precise, systematic, and rigorous investigation of the environmental influences on the strategic practices of firms. However, real world settings are complex and comprise an imperfectly known *mélange* of environmental variables that operate independently, simultaneously,

⁴³⁹ Foxall and Minkes (1996) distinguish three managerial functions, namely, *administrative* (the day-to-day operational decision processes in various functional areas of the firm and related to making sure the organisation is being efficiently run at the present), *directive* (decision processes that involve the control and corrective aspects of firm performance at an intermediate strategy level), and *strategic/entrepreneurial* (decision processes related to the future aspects of the firms survival, expansion and growth). Pitelis and Teece (2009) make a similar distinction between running a business or the operational aspects and strategic decisions. The potential contributions of evolutionary and operant interpretations here relate to the more strategic dimensions of the business.

and in combination. The principles and tools uncovered and developed in experimental laboratories require tuning to account for these differences and for the differences between human and non-human animals to generate an useful, valid, and reliable operant account of the marketing behaviour of firms. In addition, the extent to which these principles are applicable to the behaviour of firms is a falsifiable hypothesis (Foxall 1998b) to be subjected to what Winter (1986) describes as a “protracted investment and sustained interaction between theory and empirical inquiry” (p. 183). The evidence presented in this research generated a compelling glimpse into the possible contributions of an operant perspective on organisational practices and their evolution (c.f., Felin and Foss 2011; Winter 2011).

While radical behaviourism may be rejected outright in favour of the prevailing cognitive paradigm in evolutionary economics, the research maintains its integrity by demonstrating how the *Selection by Consequences* analogy may be applied usefully within case study research to understand selection dynamics. As David Sloan Wilson (2012) puts it “the fundamental insight of B.F. Skinner, ... ‘selection by consequences,’ ... remains valid, however flawed the tradition of behaviourism was in other respects” (p.21).

Concluding Synthesis

Concluding Synthesis

The research was motivated by a concern to understand why the marketing practices of Wall's, a dominant manufacturer of ice cream in the UK, exhibited a marked degree of stability and continuity for several decades. The finding emerges from a case study by Vella and Foxall (2011) who apply the principles of operant psychology to develop an understanding of the situational influences on firm practices.

Evolutionary approaches on strategy have the capacity to generate an understanding of the distal causes of this stability in Wall's practices and of the persistence of certain features such as exclusivity. Within operant psychology, Skinner (1981) authors *Selection by Consequences* wherein he elaborates an analogy between the biological processes of natural selection and the experimental procedures of human operant conditioning to characterise the evolution of socio-cultural practices. The purpose of this research was to evaluate the applicability of Skinner's analogy in characterising the selection dynamics operating on the strategic behaviour of Wall's by developing an empirical investigation based on Selection by Consequences and on operant principles.

Since the analogy has never been applied to generate an evolutionary understanding of marketing practices, the research stands as a first approximation for future endeavours. The project focused exclusively on addressing three critical issues in developing this first approximation and conducting the evaluation:

First, the substantive dimensions of Skinner's analogy were established through a comprehensive reconstruction based on his primary publications.

Second, an assessment was conducted to address principal conceptual and methodological obstacles that would hinder the research. Skinner's analogy was examined for completeness in the light of a number of key criticisms offered in open peer commentary on Selection by Consequences

(Catania and Harnad 1984); and, the necessary components for developing a generic natural selection interpretation as contemplated in evolutionary economics. The *Marketing Firm* (Foxall 1999b; Vella and Foxall 2011) provided the theoretical underpinning since it represents an operant perspective on the theory of the firm. By adopting the *Behavioural Perspective Model* (Foxall 1990, 1996b, 2010b) as an interpretive device, the Marketing Firm also accounts for some of the major methodological obstacles arising from the application of the operant principles, as derived in experimental laboratories through research on human and non-human animal behaviour, to the market practices of organisations.

Third, having addressed these points, the research delineated an appropriate sensitizing framework. The project adopted the behaviourist case study (Vella and Foxall 2011) as a valid and reliable research method, and an appropriate longitudinal design was formulated to account for the research objectives. The sensitizing framework was applied to interpret the qualitative evidence populating the research – a market investigation, published in 1979, on the UK ice cream industry conducted by the Monopoly and Mergers Commission.

The research contributed by demonstrating the usefulness of adopting, retaining, and further refining Skinner's analogy in future research and in continuing investigations based on the *Marketing Firm*.

Appendices

Appendix 1

A1.1 Treatment of the Firm and the Level of Analysis

In modelling the firm to gain more realistic insights into behavioural interactions within complex marketplaces, the initial step requires establishing the appropriate level of analysis and making explicit assumptions on how to suitably treat the firm at this chosen level. For the purpose of focusing on and carefully analysing the selection dynamics operating on marketing practices within the ice-cream market, the firm may be characterised as a ‘behaving individual,’ the emissions of which fall under the control of its internal members and of external stakeholders (e.g., rivals, customers, government and so on). The sole focus of the research is on the latter.

Such treatment is assumed as a necessary abstraction for analytical purposes, rather than as a strict definition of the firm or “fixed principle” (Hodgson 2006, p. 10). Admittedly this is an oversimplification and, for example, fails to capture the intricacies of organisational life including the internal processes and dynamics of the firm, conflicting goals among its members, changing priorities among management, and inter-departmental coalition formation (e.g., Cyert and March 1963). The abstraction should not give the mistaken impression that the research assumes the firm as a *unified* whole (Hodgson 2006) or black box.

Treating the firm as a behaving individual is only a methodologically convenient assumption that does not neglect these complexities. Rather, such an analytic abstraction is thought necessary to focus on and build a more elaborate understanding of complex environmental interactions among different firms (Elster 1989) and other selection agents acting in the market (Nelson and Winter 1973). Both Foxall (1999b) and Vella and Foxall (2011) treat the firm as an individual although they are not explicit in their assumption. Recognising the firm as an abstraction for a “coalition of individuals” (Cyert and March 1963) and distinguishing an external from an internal level of analysis carries an important implication: marketing behaviour at the product market level of analysis should be conceived as a special instance of cultural practices rather than behaviour of an individual “organism”. Therefore, a distinction is made between individual behaviour and practices at the group level in very much the same way as the distinction made between individual habit and organisational routines in evolutionary economic literature (Becker 2001; Hodgson 2003; Becker 2004, 2005, 2007; Hodgson 2008, 2009a, b; Hodgson and Knudsen 2010)⁴⁴⁰.

Radical behaviourism, through its focus on single subject research, implies methodological individualism (Foxall 1990, p. 32). Therefore, the philosophy inevitably treats levels of analysis purely as levels of aggregation (Johnston and Pennypacker 2009; Delgado 2012). Skinner (1957) emphasises, for example, the point – nothing “emerges” from social interactions that is more than the “combined behaviour” of those involved (p. 2; cf. Metcalfe 2005; Dosi and Marengo 2007; Hodgson and Knudsen 2010; Dosi 2013). Therefore, the view of *properties* (1) emerging from a hierarchically arranged system with relations between and among different levels, and (2) at the one level not reducible to lower levels would be ontologically rejected or possibly accepted, at the

⁴⁴⁰ See also Chapter 3, Section 3.3.2B.

methodological level, only if directly observable and measurable⁴⁴¹. For the sake of simplicity and parsimony, aggregate rather than emergent properties are assumed throughout.

A1.2 The Meaning of Qualitative and Interpretative in the Research

The research defines the difference between “qualitative” and “quantitative” in the neutral sense rather than in the broader sense that refers to particular philosophies of science (Guba and Lincoln 1994; Vella and Foxall 2011, 2013). The term qualitative, within this research, simply means empirical work that employs and relies on methods that do not emphasize quantification (Symon and Cassell 2004; Vella and Foxall 2011; 2013; cf. Hammersley 1992; Lee 1999; Stebbins 2001). Such methods incorporate both qualitative data generation instruments and techniques that analyse the qualitative dimensions (i.e., through narrative) of phenomena of interest rather than rely on descriptive and inferential statistics (Symon and Cassell 2004; Gerring 2012). So narrowly defined, qualitative research may be informed by the entire spectrum of epistemologies and is therefore also appropriate for a behaviourist worldview (Vella and Foxall 2011, 2013). Relying on such a definition allows attention to turn to more important issues including examining the actual epistemological differences between positivist and non-positivist works (Symon and Cassell 2004; Gerring 2012) and evaluating the appropriateness of the selected method given the specific goals of the research and its circumstances (Hammersley 1992)⁴⁴².

In contrast, Morgan and Smircich (1980), Mason (2002), Gephart (2004), Bryman and Bell (2007), and Creswell (2009), for example, use the term “qualitative” synonymously to a range of interpretivist worldviews. For example, Morgan and Smircich (1980) state: “Qualitative research is an approach rather than a particular set of techniques, and its appropriateness derives from the nature of the social phenomena to be explored” (p. 491). The key differences identified and emphasised by such authors with respect to qualitative research arise from a rejection of realist worldviews and concomitant positivist (and post-positivist) claims emanating from the assumption the social world may be known through a natural science perspective. Instead, qualitative researchers (in the broad sense of the word) rely on interpretivist/constructivist epistemology/ontology: (a) defining the purpose of inquiry in terms of

⁴⁴¹ Emergent properties are defined as “novel features that arise when elements come into combination where such properties are not found in those elements on their own” (Hodgson 2004, p. 10), i.e., “the whole is more than the sum of its parts” (Simon 1962, p. 468).

⁴⁴² The characterisation given here is a very generic one and should not be misconstrued as implying that qualitative researchers (in the philosophical definition of the term) form a unified front bound by shared assumptions (Stake 1995; Denzin and Lincoln 2011). It is only meant as a simplified marker and rudimentary point of reference to highlight what is meant by the term qualitative in this research and what it could mean within radical behaviourism. Gerring (2012, pp. xxi, 362) details a relatively long list of sources that discuss the distinction between qualitative and quantitative. Denzin and Lincoln (2011) provide a good background through a historical review of the field of qualitative research highlighting the resistance to qualitative studies and definitional issues. Lee (1999) provides a similar discussion on the qualitative-quantitative dichotomy. Hammersley (1992) challenges the qualitative-quantitative methodological dichotomy and presents a study of the dangers associated with such.

understanding the uniqueness of complex human experiences in situ rather than seeking regularities for prediction and control that are generalizable across contexts; (b) generating such understanding from the point of view of participants; (c) emphasising subjectivity and promoting the interpretive role of the researcher rather than eliminating or minimizing it; (d) studying behaviour in real world contexts rather than in contrived settings; (e) establishing different criteria but equally rigorous criteria for evaluating quality; and (f) approaching theory through a predominantly inductive logic (Morgan and Smircich 1980; Hammersley 1992; Guba and Lincoln 1994; Stake 1995; Lee 1999; Mason 2002; Gephart 2004; Bryman and Bell 2007; Creswell 2009; Denzin and Lincoln 2011).

The meaning of the term “interpretivist” here is understood very broadly as representing a set of subjectivist approaches to social reality that treat the social world as “an emergent process which is created by the individuals concerned” (Burrell and Morgan 1979, p. 28). This subjectivist view rejects positivist claims to knowledge to assume instead a perspective that focuses on understanding the modes through which individuals construct social reality and their relationship to the social world: thus, premium is placed upon individual experiences and consciousness (Burrell and Morgan 1979; Morgan and Smircich 1980; Guba and Lincoln 1994). Interpretivism with its subjectivist and phenomenological epistemology stands at polar extreme to the logical positivism of radical behaviourism (Burrell and Morgan 1979; Morgan and Smircich 1980) and the post-positivistic elaborations (e.g., falsification) that are found within the present research. The use of terms “interpretative” within this research aims to facilitate the distinction between the way interpretation is used here and the broader meanings of Interpretivism and qualitative research.

Interpretation is, therefore, defined narrowly: (a) As a *reconstruction* or “a form of translation, a process of rendering what is observed in terms of another system of plausibility [or meaning], one that is distinct from the descriptive terms in which the observation is recorded. ... Interpretation cannot proceed in isolation from a template in terms of which the interpretation is to take place” (Foxall 1998a; 2010b, pp. 17-18). (b) As a working *hypothesis* that is “presented on a background of accepted conventions and ontological assumption” (Faye 2011, p. 279). Both definitions imply the importance of evaluating *Selection by Consequences* from within radical behaviourism and emphasise the theoretical nature of the endeavour. However, the interpretation is not treated as mere narrative or pure speculation. It is established as a hypothesis for testing, rejecting, refining, and retesting.

The more compelling reasons for selecting the qualitative route lie in this form of research being particularly suitable for: (a) attending to the multifaceted and rich nature of complexity as it occurs in real world settings; (b) promoting a contextualised microscopic form of analysis where such is necessary; (c) bringing to the fore a detailed perspective of how things actually work in certain contexts (Guba and Lincoln 1994; Miles and Huberman 1994; Mason 2002; Gephart 2004; Bryman and Bell 2007; Miles *et al.* 2013); (d) focusing attention on the historical and chronological dimensions of the causal process and dynamics of qualitative change (Miles and Huberman 1994; Bryman and Bell 2007; Miles *et al.* 2013); and, (e) aiding in the generation and the development

of theory (Guba and Lincoln 1994; Miles and Huberman 1994; Mason 2002; Gephart 2004; Bryman and Bell 2007; Miles *et al.* 2013).

There are two important weaknesses particular to all qualitative research, namely, (a) threats to internal validity, generalizability, and overall quality of the research (Miles and Huberman 1994; Miles *et al.* 2013): and, (b) overload due to copious data and lack of structure that can create serious problems with respect to project completion times (Miles and Huberman 1994; Vella and Foxall 2011; Miles *et al.* 2013) and focus. These weaknesses further emphasise the need to have a systematic and rigorous approach that is explicit and open to evaluation (Miles and Huberman 1994; Miles *et al.* 2013) and, therefore, are attended to as comprehensively as possible in Chapter 2. In addition, the adoption of a methodological strategy is assumed to mitigate these weaknesses (see Chapter 1, Section 1.3; Appendix 1, Section A1.3).

A1.3 The Research Strategy

In developing operant interpretations, the first step involves employing a parsimonious model of situational influences on behaviour (Foxall 1984, 1999c, 2005, 2010c) that relies on a minimum set of explicitly stated assumptions and is embedded within radical behaviourist principles (Foxall 2010b)⁴⁴³.

Although the three-term contingency is *the* parsimonious framework used in operant analysis, the BPM is the only interpretive device available that provides the opportunity to generate a rigorous and systematic analysis of behaviour in complex real-world settings. The BPM emerges as an empirically-grounded critical evaluation of the behaviourist paradigm that rests upon an additional and relevant set of assumptions above and beyond those embodied in the three-term contingency: the bifurcation of reinforcement to differentiate between the reinforcing or punishing effects of utilitarian (value in use) and informational (roughly, exchange value and, primarily, social feedback) consequences of behaviour and reflect essential differences between human and non-human animal behaviour. A scope or continuum of settings from relatively closed to relatively open which, theoretically, reflect the degree to which behaviour may be said to come under environmental control within the experimental laboratory in contrast to the real world⁴⁴⁴. Otherwise, the BPM remains relatively consistent with behaviourist principles (Foxall 1990, 1996b, 2001, 2005, 2010b). Economic behaviour is assumed instrumental, that is, its positive and negative consequences *may* effect the likelihood of its recurrence in sufficiently similar settings (Alhadeff 1982; Foxall 1990; Staddon 2001; Vella and Foxall 2011). The literature streams of greatest relevance to the research are two: (1) the domain defined by the BPM research programme particularly the theoretical foundations of the BPM and the methodological concerns it raises and addresses in applying principles developed within an EAB to elucidate purchase, consumption, and marketing behaviour. (2) Operant psychology provides appropriate operational definitions for application to the analysis and interpretation of the evidence. This literature forms an essential backdrop to understanding and appreciating Skinner's evolutionary analogy.

⁴⁴³ Dnes (1992) also highlights the need in starting from a basic coherent theoretical position.

⁴⁴⁴ For a detailed explanation, refer to Chapter 4, Section 4.2.

Second, organizations are characterised through an appeal to the *Marketing Firm* (Foxall 1999b; Vella and Foxall 2011) since (1) it represents an operant perspective to the theory of the firm, (2) the research studies the market behaviour of firms, and, (3) utilises the BPM to conceptualise, model, and interpret the marketing practices of firms within real world market settings. In so doing, this theoretical perspective of the firm accounts for the some of the conceptual and methodological obstacles as already explained⁴⁴⁵.

Third, conceptual obstacles in relation to the completeness of *Selection by Consequences* are overcome by appealing to two sets of literatures: (1) the primary publications wherein Skinner developed his cultural evolution analogy. As discussed in Chapter 3, Skinner's cultural analogy is irregularly dispersed across several of his publications (namely in Skinner 1953, 1961b, 1966a, 1969, 1971, 1973, 1974, 1978, 1981, 1984b, h, i, f, a, e, 1986, 1989a, b). Skinner's view, as is relevant to the research purpose, is reconstructed in a single locus. Skinner rarely responded to his critics (Catania and Harnad 1988) and neglected the more important dimensions of such criticisms (Dahlbom 1984). However, there exists a unique set of publications in *Behavioural and Brain Sciences* wherein several renowned researchers commented on various aspects of *Selection by Consequences* and other canonical publications of his⁴⁴⁶. In turn, Skinner responded to each commentary with varying degrees of depth and attention to criticisms to render the particular issue a unique and essential reference point on operant conditioning and *Selection by Consequences*. Therefore, the research directs the greatest emphasis to this corpus given the significance to the subject matter. (2) *Selection by Consequences* is also examined through the generic framework of socio-

⁴⁴⁵ The exploratory work of Vella and Foxall (2011) provides the most directly relevant source of empirical research on firm behaviour from an operant perspective. It forms the basis for clarifying and adding topographical detail to the different elements of the BPM as they apply to the marketing practices of firms. In addition, the research will be instrumental in refining existing operational definitions and measures and introducing new ones. See also Chapter 1 (Section 1.2 and Section 1.3) and Chapter 2 (Section 2.3.6).

⁴⁴⁶ The issue was published in Issue 4 (December, 1984) Volume 7 pages 473 to 724. The papers, commentaries, and replies were later published in a single edited volume by Catania and Harnad (1988) as *The Selection of Behaviour: The Operant Behaviourism of B F Skinner – Comments and Consequences*.

cultural evolution, based largely on the work of Campbell (1965, 1969)⁴⁴⁷. The framework provides an essential reference point to characterise the necessary components of what constitutes an evolutionary rather than a developmental or a historical explanation. Campbell (1956, 1969), like Skinner, explicitly drew the analogy between reinforcement of exploratory behaviour and socio-cultural selection. These two literatures are utilised to identify necessary components that Skinner may have omitted in his analogy.

Fourth, these dimensions provide the minimum set of assumptions and theoretical perspective to carry the research forward. In other words, the BPM in application within the *Marketing Firm* is combined with the basic VSI evolutionary framework to apply Skinner's evolutionary analogy to interpret the evolution of firm marketing practices. This is the essence of the sensitizing framework that needs to be developed and operationalized to apply in research. Chapter 4 identifies this framework as the Selection by Marketing Consequences (SMC) framework.

As a first approximation or baseline framework, the SMC is based on a relatively broad and generic conceptualisation. Refinements and elaboration form the basis of successive stages of future research (Foxall 1984, 1999c; Churchill and Iacobucci 2005; George and Bennett 2005; Foxall 2010b) and complexity is introduced gradually and according to the nature of the phenomenon under study (Foxall 2005, 2010c, b) or as dictated by empirical work (Foxall 1984, 1999c) to improve explanatory and predictive power of the (Foxall 2005, 2010b). What the process may lose in oversimplifying certain aspects of conceptual development should be offset by a more comprehensive account of and greater focus on the theoretical variables of interest (Nelson and Winter 1973). The first approximation provides the necessary basis for

⁴⁴⁷ Campbell's model remains highly influential (Aldrich 1979; Nelson and Winter 1982, p. 43; McKelvey and Baum 1999; Hodgson 2001b; Knudsen 2002; Baum and Rowley 2005; Metcalfe 2005; Aldrich and Ruef 2006; Aldrich *et al.* 2008). Witt (2003) takes issue with Campbell's model as being too abstract and lacking in detail and, more importantly, when applied to socio-cultural evolution, susceptible to a reliance on "the biological metaphor." Witt's statement underscores his on-going arguments that such a metaphor is not suited to engender a comprehensive understanding of the specifics of economic evolution (Vromen 2012, p. 746). While recognizing these possible limitations, it is beyond the scope of the research to discuss alternative evolutionary models and their full implications. Campbell's elements are recognized as being necessary dimensions but not sufficient in detail (Aldrich *et al.* 2008). What matters is establishing a point of reference within the otherwise vast literature of evolutionary economics to allow the development and the accomplishment of the research objectives. In addition, Campbell (1969) and Skinner (1981) appear to share the view that socio-cultural evolution is not an instance of biological evolution. Rather they are instances of a single meta-principle, which Skinner called Selection by Consequences. Similarly, although routines are accepted as an unit of analysis in evolutionary economics (e.g., Winter 1990; Metcalfe 1998; Becker 2001; Hodgson 2002; Knudsen 2002; Becker 2007, 2008; Knudsen 2008; Becker and Knudsen 2012), the study focuses on the operationalization and the application of the BPM and the Marketing Firm. Future research is also directed towards examining the findings from this research with organisational routines literature because there appear to be several overlaps. (In addition, a relatively narrow and non-comprehensive selection of literature from evolutionary economics is also called upon to expand certain elements of this basic model.)

identifying refinements and future research directions thereby forming a foundation for developing a research agenda for the Marketing Firm⁴⁴⁸.

Fifth, testing requires the proposition of researchable statements (Foxall 1995b; Vella and Foxall 2011, 2013). The manner in which the variables and the relationships postulated by the framework will be specified through operational definitions and measures before conducting the interpretation (Foxall 2010b). These definitions and measure determine the correspondence rules that permit empirical testing of theoretical constructs and linking empirical findings back to theory (Foxall 1992b; Foxall and Schrezenmaier 2003; Foxall 2010b). Chapters 3 and 4 include these dimensions.

Sixth, the research follows Vella and Foxall (2011) in adopting the case study as the more appropriate research method for generating valid and reliable operant interpretations of qualitative evidence.

Seventh, the analysis, interpretation, and discussion of the findings are presented in Chapter 5 whereas Chapter 6 concludes on the extent to which the research purpose has been accomplished and identifying strengths, limitations, and areas for future study.

⁴⁴⁸ Underlying the process of successive elaboration and refinement requires 'destructive testing' (Foxall 1999c, 2005, 2007a, 2010b) that involves the interaction of framework with empirical research, particularly, to test its explanatory and predictive capacity (Foxall 2005, 2010b). The process is therefore characterised by revisiting and critically evaluating the framework and its assumptions (Dnes 1992; Foxall 1996a; Mason 2002; George and Bennett 2005; Gerring 2012). Gerring's (2012) suggested strategy in conducting social science research also involves parsimony, clearly stated and explicit assumptions, and subjecting these assumptions to continual testing and critical evaluation.) The logic underlying the design employed by this research (see Chapter 2, Section 2.3) reflects this structured, sequential and cumulative of process of theory building and critical (re)evaluation.

Appendix 2

A2.1 Shortcomings of Alternative Research Methods

In contrast to case studies, neither of the two most popular methods used in the social sciences (survey and experimental methods) provide a method to support real world data that spans a considerable portion of history of the ice-cream industry (Vella and Foxall 2011, 2013). Archival analysis (datasets populated by quantitative evidence spanning several years of history) was also disregarded because no appropriate quantitative dataset on the ice-cream industry was found.

Evolutionary economics features a wide variety of methods including the econometric analysis of archival quantitative datasets, real (formal mathematical) analysis particularly game theory, historical case studies, illustrative historical narratives, appreciative theorising (Nelson and Winter 1982, pp. 45-48; Nelson 1994), and surveys (Silva and Teixeira 2008). Assessing the individual strengths and weakness of these methods is beyond the scope of this research. However, three points need to be made: The rationale for using case studies outweighs that of weaving an illustrative historical narrative. Such narratives typically do not incorporate an explicitly formulated research design and are thus susceptible to challenges on the validity and reliability of the findings and generated insights. Econometric modelling was not possible due to the lack of availability of a proper dataset. A formalised approach was rejected particularly because the method fails to capture important qualitative properties of certain economic concepts, processes (Dnes 1992; Vella and Foxall 2011, 2013), and the dynamics of evolutionary change (Hodgson and Huang 2012, p. 352). A shared fundamental interest among evolutionary theorists is on the dynamics of *qualitative* change (Marengo and Willinger 1997; Klaes 2004; Dosi and Marengo 2007; Hodgson and Huang 2012, p. 352) where historical analysis plays a significant role (Aldrich and Pfeffer 1976; Dosi and Marengo 2007). For a detailed criticism of formalism in economics vide Hodgson (2009c).

The position being argued in favour of qualitative methods does not reflect a position against quantitative research. Rather the point that is being made is that experimental design alone does not “exhaust the realm of useful methods and techniques” through which to come to understand human behaviour (O’Shaughnessy 1992, p. 268). In any case, case study research shares characteristics of experimental research in that it focuses on answering *how* and *why* questions (Lee 1999, p. 58).

A2.2 To What Extent is it Possible to Generate Causal Explanations through Qualitative Evidence?

Causation may be examined in great detail through case studies populated by qualitative empirical evidence for a variety of reasons: the richness of the empirical evidence, the complexity captured therein, and the contextualised particularity that provides a microscopic view into the dynamic real world

interactions among the phenomena of interest over time (Stake 1995; Lee 1999; Hammersley and Gomm 2000; George and Bennett 2005; Gerring 2007; Gibbert *et al.* 2008; Yin 2009, 2014).

Whether qualitative evidence can be used to construct accounts *describing* causation is not put into question. The issue lies in whether and the extent to which qualitative evidence can be utilised to generate causal *explanations*.

From a strictly behaviourist perspective, causal explanation is not possible through qualitative means since the association between independent and dependent variables must be established through probabilistic association (see Chapter 1). Quantification is absolutely necessary. In addition, testing hypotheses is also only possible through analysing quantitative data via inferential statistics (Vella and Foxall 2011; 2013; cf. Miles and Huberman 1994; Stebbins 2001; Mintzberg 2005; Miles *et al.* 2013). Operant interpretations provide a basis through which hypotheses are generated for *testing* through more rigorous positivist methods (Foxall 2001, p. 184; 2010b, p. 16). In addition, the implication is that evaluation of a particular theoretical claim through qualitative evidence is conducted through propositions rather than *precise* hypotheses (Vella and Foxall 2011, 2013)⁴⁴⁹.

The conclusion is consistent with the narrow view of explanation within the natural science perspective to behaviour claimed by behaviourism.

A broader understanding of explanation is taken by Miles *et al.* (2013), for example, who reject the 'scientific' view as the *only* means through which to establish causal explanations *and* "underline the strong potential" of qualitative research in testing hypotheses (Miles *et al.* 2013, p. 12). Mintzberg (2005) takes a similar expansive (perhaps more practical) view of explanation as being on-going and developing along a continuum from rudimentary categorisation of empirically based constructs, on one end, which are continually refined until full scale causation models may be drawn. Across this continuum, constructs and relations may be examined inductively and deductively depending upon research purposes and on the degree of knowledge accumulated around phenomena (Mintzberg 2005)⁴⁵⁰. Most importantly, Miles *et al.* (2013) emphasise the importance of "showing an empirical basis for the claim that Y is explained or caused/influenced by X" (Miles *et al.* 2013, p. 222). Causal relations within qualitative case studies should not only be identified within the case analysis but also through the comparison across cases – the practical corollary is that several different cases would be required to establish and to test the identified and proposed causal relations (Hammersley *et al.* 2000; Vella and Foxall 2011, 2013)⁴⁵¹.

⁴⁴⁹ Vella and Foxall (2011, 2013) point out that even if the testing of hypotheses were possible through qualitative research, several cases would be needed to accomplish such testing in a valid and reliable way. Being a single case study (see Chapter 2), the research would be unable to test hypotheses.

⁴⁵⁰ Stebbins (2001) represents the exploration and confirmation processes in similar terms highlighting inductive approaches as characterising exploratory research toward deductive approaches in confirmatory research.

⁴⁵¹ Ultimately, the problem, however, reverts to addressing the epistemological issue of what is meant by explanation and the extent to which researchers are prepared to assume that law-like regularities governing human behaviour may indeed be uncovered (Hammersley *et al.* 2000).

This research retains the narrow view of Vella and Foxall (2011, 2013) to preserve consistency with radical behaviourism. However, the type of the qualitative explanation elucidated by Miles *et al.* (2013) and other methodologists, their emphasis on attending to empirical evidence fairly, and the signal effort placed on justifying uncovered or hypothesised causal relations through concrete empirical examples cannot be easily dismissed. While such explanations fall short of behaviourist requirement of scientific explanations, they lead to a significantly more systematic and rigorous operant interpretation than Narrative Interpretations. Chapter 1 referred to the speculative nature of the conclusions drawn within such narratives. In contrast, qualitative case studies rely on a number of within-case and cross-case analytical techniques to investigate “causal complexity” and, specifically to draw strong inferences and conclusions in a valid and reliable manner (Miles and Huberman 1994; George and Bennett 2005, p. 12; Gerring 2007; Yin 2009; Miles *et al.* 2013; Yin 2014)⁴⁵². The approach allows interpretations drawn through case studies to go beyond the provisional status of Narrative Interpretation and to present conclusions as empirically grounded causal hypotheses either for further qualitative refinement or for a quantitative study.

A2.3 Multiple Cases Considered

At the early stages of development three variants of a multiple case design were considered. The first variant involved studying all the investigations of the ice cream industry performed by the Commission between 1979 and 2000. The second involved selecting the two premium ice-cream manufacturers that at the start of the Commission investigations were dominant and compare their fate over the history of the market. The 1979 report demonstrates how Lyons Maid shared dominance with Wall's. Over the years, however, the market share of Lyons Maid declined and eventually Nestlé acquired the organisation. A third variant involved utilising a completely different industry, the beer market, and comparing Wall's to the dominant firm for the same time period. In all variants, the main rationale would be to compare selective processes and establish whether the firms are subject to similar selection dynamics, i.e., the processes were similar to operant conditioning procedures in both cases. The comparison would have been more meaningful in the third variant since the beer market was declining while the ice-cream market was expanding and the main incumbents of the two industries used exclusivity contracts. The Commission had completed a number of full market and anti-trust investigations into the beer market that were supplemented by additional investigations conducted by the Trade and Industry Committee of the House of Commons (a total of 15 reports).

Despite the significant analytical advantages of multiple case studies, however, a single case study design was chosen. The single most important deterrent to multiple case studies in application to the research problem is the significant complexity and volume of historical qualitative data that would have needed consideration, analysis, interpretation, and reporting. Future research, however, is directed towards replicating the present project using the SMC as defined in Chapter 4. Hence, the necessary theoretical groundwork is already complete for such a project.

⁴⁵² These analytical techniques are discussed in Chapter 2 (Section 2.3.6) and in Appendix A2.6.

It should also be noted that since the research did not make use of primary data involving human participation (e.g., focus groups, surveys, workplace observation and so on), Cardiff University does not require the need to gain ethical approval. Besides, the data is within the public domain and relates to events that occurred several decades ago. In addition, the Commission omitted any information that might have been confidential or commercially sensitive at the time.

A2.3.1 Case Selection Criteria

The selection criteria were based on five theoretical considerations:

1. The evidence had to be a full market investigation of real world behaviour narrating events over a sufficiently long period in the history on the particular industry;
2. The report had to contain an extensive description of marketing behaviour of the major participants within the market. This would allow tracking the developmental history of at least one firm within a particular over time;
3. The narrative had to include behaviour within at least one form of customer relationship. This would allow tracking the development of at least one relationship form within a particular market over time;
4. The report had to contain a set of continuous quantitative data of at least five years to allow comparisons of such variables as sales, profitability, and market share; and,
5. The report had to generated and compiled through a single source (preferably market regulators) to avoid differences in the varying research objectives and associated risks (Bryman and Bell 2007).

Ultimately, however, the case was discarded because it failed on criterion (5). The Beer Cases also constituted excellent material. However, the Ice Cream case was selected because of familiarity with the 2000 investigation.

A2.4 Theory Led Design and the Logic for Linking Theory to Data

An essential feature of designing case studies involves determining the *extent* to which the entire research process should be driven by theory (Vella and Foxall 2011, 2013)⁴⁵³. The methodological problem generally considered as

⁴⁵³ Most methodologists surveyed (e.g. Eisenhardt 1989; Dyer Jr and Wilkins 1991; Hammersley 1992; Stebbins 2001) acknowledge that it is difficult if not impossible to enter a research site *tabula rasa*. The issue therefore is not whether theory plays a role in research but the extent to which researchers utilise theory prior to accomplishing their research project and the extent to which theory influences the design of the research. Indeed (Yin 2014) concedes that the starting theory need not be highly elaborate.

underpinning this decision relates to the approach in which the linking of theory and evidence proceeds, i.e., whether deductively or inductively.

Theory Driven Research and Deductive Logic

Radical behaviourism prescribes an inductive strategy involving the intensive study of single subjects within experimental laboratories (Foxall 1995c, 1998b, 2010b; Catania 2012; Leslie 2012; Vyse 2013)⁴⁵⁴. However, the position taken within this research favours the stance that the choice between following deductive or inductive logic depends more upon the purposes of the research rather than any strict adherence to a particular paradigm (Hammersley 1992; Foxall 1998b; Stebbins 2001). All research, and in particular case research, may be classified as being primarily exploratory (including theory building and development), descriptive, or confirmatory (or theory testing, prediction) (e.g., Eisenhardt 1989; Hammersley 1992; Stebbins 2001; Yin 2014). Research that is aimed primarily at theory generation is usually associated with an *inductive analytical approach* (Gummesson 2005; Mintzberg 2005) that relies on grounded theory and an emphasis on qualitative real world data (e.g., Eisenhardt 1989; Layder 1993, p. 4; Stebbins 2001; Patton 2002; George and Bennett 2005; Gummesson 2005; Bryman and Bell 2007)⁴⁵⁵. Research that is confirmatory and that evaluates the usefulness of theoretical claims typically follows a deductive approach. In addition, the exclusive reliance on an inductive approach has impeded the development of a systematic and rigorous approach to operant interpretations (Foxall 1998b)⁴⁵⁶.

Following Vella and Foxall (2011), the research is theory driven. The research involves evaluating the selection-operant conditioning analogy against the empirical evidence through the development and application of a sensitizing framework. The framework itself also rests exclusively upon additional theoretical claims (the BPM) that are applied to interpret the evidence to

⁴⁵⁴ See especially Foxall (1995c, 2010b).

⁴⁵⁵ For example, Mintzberg (2005) is emphatic in his arguments equating theory creation and development to inductive approaches and the testing of such theories to deductive approaches. Eisenhardt (1989) argues a fairly inductive approach to theory building: "most importantly, theory building case study is begun as close as possible to the ideal of no theory under consideration and no hypotheses to test. Admittedly, it is impossible to achieve this ideal of a clean theoretical slate. Nonetheless, attempting to approach this ideal is important because preordained theoretical perspectives or propositions may bias and limit the findings. Thus, investigators should formulate a research problem and possibly specify some potentially important variables, with some reference to extant literature. However, they should avoid thinking about specific relationships between variables and theories as much as possible, especially at the outset of the process" (p. 536). Dyer Jr and Wilkins (1991) take direct issue with Eisenhardt's suggestion for starting out with *some* theoretical focus arguing for a more inductive approach. Langley (1999), however, draws a cautionary note "Rigid adherence to purely deductive or purely inductive strategies seems unnecessarily stultifying" (p. 694).

⁴⁵⁶ Foxall (1998b) draws attention to the potential problems of proceeding inductively and generalising from experimental settings to the complexities of real world situations: The usefulness of operant principles is clear and established within operant laboratories due to the extent of control exercised by the researcher therein. However, these principles may not necessarily apply in the real world (e.g. Foxall 1990, 2010b) and, hence, evidence must be accumulated to demonstrate their usefulness in application to the real world – the hypothetico-deductive model is one possible avenue that may accomplish this within a significantly more pluralist methodology (Foxall 1998b). Vyse (2013), a behaviourist, emphasises the need for expanding the behaviourist methodological repertoire but argues "behaviour analysts have been wise to avoid the pitfalls of the hypothetic-deductive model" (p. 129).

conduct the evaluation and elaborate on the *Marketing Firm*. Such a theoretical endeavour is sufficient to warrant a design that rests on existing theory (Dnes 1992). Theory played a crucial part in deriving the steady state design, and, in turn, the logic of replication that is being followed dictates the need for a theory driven approach: does theory adequately predict, in qualitative terms, the patterns found in the evidence? Conducting operant interpretations seems to favour a deductive and, therefore, theory-led approach as a methodological requirement in conducting evaluations (Foxall 1998b, p. 344) of this kind. Furthermore, to generate an operant understanding of behaviour in real world contexts, interpretations must be conducted systematically and rigorously and derived in a manner that is consistent with operant principles and research (Foxall 1996b, 2010b; Foxall and Sigurdsson 2013).

In addition, several other related factors warrant a theory-led design. Theory keeps the research directed and focused, organised and bound around the research problem and objectives (Eisenhardt 1989; Miles and Huberman 1994; Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013; Yin 2014) even when the research is aimed at generating theory (Eisenhardt 1989, cf. Dyer Jr, 1991). Starting with theory serves in identifying and extracting important concepts and interrelationships among these concepts for subsequent refinement through empirical analysis and discussion. These, in turn, are organised within a framework (however rudimentary or elaborate), which serves to generate specific guiding sensitizing propositions and research questions through which to probe the evidence and guide the analysis and interpretation (Yin 2014). “The more a case study contains specific questions and propositions, the more it will stay within feasible limits” (Yin 2014, p. 31). Even in the more inductive approaches towards building theory from case studies, a defined research question is seen by some (e.g., Eisenhardt 1989) to provide greater focus⁴⁵⁷. Furthermore, theory serves as the central source of generating more accurate (Eisenhardt 1989) and valid and reliable operational measures and definitions (Churchill 1979; Vella and Foxall 2011, 2013) to be applied and evaluated through the analysis and discussion of evidence.

Theory provides the criteria and logic for selecting the most appropriate data, for screening among alternative sources, for determining the data collection instruments, for identifying units and sub-units of analysis and for linking the findings back to the issues of theoretical interest (Yin 2014). It is therefore in this sense that theory acts as a “blueprint” for the entire research design (Vella and Foxall 2011, 2013; Yin 2014).

Iterative Strategy

In developing sensitizing frameworks Miles *et al.* (2013) prescribe being highly selective in identifying the most important concepts and relationships in relation to the research problem. Within economic psychology, one mode in which behaviourist researchers develop understanding is through a process of adopting concepts from economic theory and reinterpreting these concepts

⁴⁵⁷ Eisenhardt (1989), however, argues for a significant degree of flexibility to the extent that she accepts that research questions may change *during* the research. However, the re-evaluation of aspects of design since certain changes may be fundamental and alter the scope of the research (Yin 2014).

according to operant principles especially when the latter are judged insufficient on their own to explain behaviour (Hursh 1980)⁴⁵⁸. In the case of this research, evolutionary economics is thus critical. However, difficulty arose in identifying and selecting the most relevant theoretical constructs and relations therein appropriate to accomplishing the research objectives. The associated problem of how much complexity to build in the framework was also encountered.

Within evolutionary economics there is relatively greater incidence of theoretical elaboration over empirical research (Silva and Teixeira 2008). Theoretical richness and complexity thus created a significant danger of diffuseness, overload Miles *et al.* (2013) and a loss of focus that could have jeopardised the completion of the research in a manageable and timely fashion. Therefore, the research follows Mintzberg (2005), Nelson (2007) and others who pay “close attention to the empirical phenomena one is theorizing about, and the actual processes that seem to be at work, and develop one’s theory around one’s understanding of these” (Nelson 2007, p. 352; cf. Hodgson and Knudsen 2007)⁴⁵⁹.

The research also follows the iterative strategy adopted by Vella and Foxall (2011, 2013). The strategy involves both reading and conducting a brief preliminary analysis of the data very early in the research process and moving between theory and data in these preliminary stages to determine the most useful constructs and to sharpen operational definitions (Vella and Foxall 2011, 2013). Inferences may be then drawn deductively from within an improved sensitizing framework to allow the evaluation to move forward. For example in Vella and Foxall (2011, 2013), the iterative strategy proved instrumental in introducing and using an existing operant concept, *motivating operations* (Laraway *et al.* 2003; Fagerstrøm *et al.* 2010), to clarify seemingly ambiguous evidence. Silverman (2010) makes a similar prescription to maintain focus on the research problem.

Importantly, the iterative strategy is not intended to confirm or substantiate the inferences drawn from the model but rather as a way to establish the most fruitful application of the framework in research (Foxall 1999a) to the determine the usefulness of the analogy. This iterative strategy also reflects more pragmatic recognition that both deductive and inductive approaches are useful in combination and, therefore, complementary in any given research (Babbie 1990; Hammersley 1992; O’ Shaughnessy 1992; Layder 1993; Parkhe 1993; Miles and Huberman 1994; Foxall 1999a; Langley 1999; Berg 2001; Becker

⁴⁵⁸ The route described by Hursh (1980) is the one followed within the research. Although departing directly from within evolutionary economics was a route explored in the earlier stages of research, later reconsiderations saw this project grounded more firmly within the BPM research programme – ultimately, this was considered the most logical path to lead to a parsimonious and relatively simple framework for analysis (see also Chapter 1, Section 1.3 and Appendix 1, Section A1.3).

⁴⁵⁹ Radical behaviourism prescribes an inductive strategy involving the intensive study of single subjects within experimental laboratories (Foxall 1998b, 2010b; Catania 2012; Leslie 2012; Vyse 2013). The general prescription is to keep close to the subject matter of operant psychology, i.e., behaviour (Catania 2012; Leslie 2012). With respect to this iterative practice, it should be noted that Blumer (1954, p. 9) also urges bringing theory closer to the “empirical world.” In contrast, and in direct reply to Nelson (2007), Hodgson and Knudsen (2007, p. 359) favour a stricter approach first elaborating theory to generate and test hypotheses.

2005; Bryman and Bell 2007; Gavetti and Rivkin 2007; Furneaux 2012; Gerring 2012)⁴⁶⁰.

In summary, therefore, the iterative process, maintains close focus on research problem and diminishes threat of diffuseness and overload; keeps theoretical constructs tied to the observed empirical world; aids in the selection of the most relevant theoretical constructs and relationships that need to be organized in a framework; sharpens the use of sensitizing frameworks for inferences; and, serves to clarify seemingly ambiguous evidence through the introduction and use of new constructs into the analysis and discussion.

However, the approach may be susceptible to the threat of bias, theory-ladenness, and of 'fitting the data to the 'preconceived theory''. First, the aim of the research is not confirmatory in the sense of hypotheses testing. As argued, the strategy generates the most fruitful basis to determine whether the analogy is useful in application. Although both inductive and deductive logic is applied within the same research, this dual use precludes drawing inferences as hypotheses and testing them using the same evidence (Stebbins 2001, p. 25). Second, the evidence has been collected by a third party for different goals, which ensures a significant degree of objectivity. Third, the process is explicit and acknowledges the existence of alternative interpretations and rival explanations. The research does attempt to accomplish its goals as objectively possible (Vella and Foxall 2011, 2013) given that ultimately all observation and interpretation depend on theory and implicit or explicit a priori assumptions/values (Foxall 1990; Guba and Lincoln 1994; Miles and Huberman 1994; Stake 1995; Foxall 1996b). As stated, the research seeks analytical generalisation (Yin 2014).

A2.5 The Case Study Protocol

A case study protocol was developed in preparation of the data collection stage to enhance the reliability of the research (Dnes 1992; Vella and Foxall 2011, 2013; Yin 2014). The protocol summarised the central points of the entire research to include details of the research objectives, the research questions, the sensitizing framework and related operational definitions and measures, the propositions, data collection procedures, and the questions for gathering data from the various identified sources (including the reasons for posing such questions); and, assisted in keeping focus on the research theme and in successfully managing the collection and reporting dimensions of the research.

The Commission report and related field notes (including working analysis documents) were properly organised within a case study database to establish and maintain a complete chain of high quality and easily accessible evidence (Vella and Foxall 2011; Miles *et al.* 2013; Yin 2014). The purpose of this chain is to enhance reliability of the case study (Yin 2014).

⁴⁶⁰ See also Mason (2002) for a short but interesting commentary where the author argues that deduction or induction are rarely practiced in pure form and an element of both is usually always present.

A2.6 Strategies and Techniques for Interpreting and Analysing the Data

A2.6.1 The Procedure for Conducting a Functional Analysis of Behaviour

Operant methodology requires researchers to conduct a *functional analysis* of behaviour that aims at examining behaviour-environment relations via experimental analysis.

Very broadly, the procedure typically involves first classifying and analysing behaviour and environmental events in terms of *response* and *stimulus function* respectively, i.e., the characteristic effects (outcomes or consequences) produced by behaviour on the environment and vice versa (Pierce and Cheney 2008).

Behaviour-environment relations are subsequently tested once a reliable classification has been established (Pierce and Cheney 2008). Intensive experimentation with single subjects over extended periods of time should reveal the variables that control behaviour and underlying behavioural principles (i.e., lawful relations for the purposes of prediction and control) (Moore 2008, p. 82; Pierce and Cheney 2008, pp. 23-25, 347). The procedure also involve a process of verification to ensure that changes in the probability of behaviour are due to the environmental conditions identified through experimental procedures rather than others (Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009). In other words, experimental analysis also includes considering and eliminating rival explanations of behaviour. The analytical framework used is the three-term contingency (Moore 2008; Pierce and Cheney 2008; Vella and Foxall 2011, 2013)⁴⁶¹.

Even when an experimental analysis is not possible, the general *modus operandi* for constructing an operant interpretation is very similar: the topographical descriptions within the report are analysed and categorised according to the independent (environmental) and dependent (behaviour) variables via the BPM (Vella and Foxall 2011, 2013) as applied within the SMC, as the sensitizing framework. The BPM supplants the use of the three-term contingency in analysing behaviour in natural settings. Classification is facilitated through a series of operational definitions established within the sensitizing framework. Behaviour-environment (i.e., causal) relations are posited by the framework and are established according to a set of operational measures. Operant interpretations must proceed from the point of view of the individual units of analysis focusing only *observable* events (Skinner 1953; Foxall 1995c, 1996a, 1997b, 2010b). Definitions, measures, and propositions are established a priori (Vella and Foxall 2011, 2013; Yin 2014)⁴⁶².

The analytic strategy is, therefore, largely theory driven and relies on the sensitizing framework and the research propositions derived therefrom to

⁴⁶¹ Chapter 3 provides detailed explanation of the behaviourist terminology adopted herein.

⁴⁶² Specification and research propositions are listed and explained in Chapters 3 and 4.

develop a valid and reliable interpretation (Vella and Foxall 2011, 2013; Yin 2014).

A2.6.2 Additional Strategies for Interpretation

The manner in which Vella and Foxall (2011) analyse the evidence suggests additional strategies to conduct interpretations.

Vella and Foxall (2011) proceed by carefully and critically establishing the most likely/probable or plausible explanations implicitly or explicitly considering various alternatives. Obviously such explanations depend entirely on the limitations, omissions, and quality of the evidence presented in their case report (Competition Commission 2000). Vella and Foxall (2011) first construct learning history of their units of analysis and then categorise elements of the environment in relation to these learning histories. However, since the construction of learning history depends entirely on the evidence available (Lee 1988; Foxall 2010b; Vella and Foxall 2011) and in some instances the report used was relatively incomplete or ambiguous, Vella and Foxall (2011) generate their interpretation by relying heavily on drawing inferences from operant theory (Foxall 2010b) and from principles in economics and marketing. Based on these inferences, the authors make broad assumptions with respect to the contingency relations that would *reasonably* appear to regulate behaviour. This appeal to operant principles as working assumptions to allow the interpretation to be generated is justified due to the scope and objectives of Vella and Foxall's (2011) research. In the current research, such pure inferential treatment is avoided wherever possible so as not to interfere with the scope of the project. This does not preclude however constructing gaps and making assumptions about learning history "for interpretive purposes as long as it can be *reliably* inferred, e.g., from current behaviour or verbal reports" (Foxall 1995c, p. 32). Operational measures and research propositions are developed to assist the analysis in identifying operant conditioning through qualitative evidence and thus mitigate against pure inferential treatment. For example, the discussion of Moore (2008, pp. 122-124) on how radical behaviourists should avoid the threat of circular definition of reinforcement suggests an operational measure to qualitatively demonstrate reinforcement. Such measures allow a more valid and reliable way to treat the qualitative evidence and generate most likely or plausible explanations.

To facilitate interpretation Vella and Foxall (2011) also made appeals to basic principles of economics and marketing on how firms are *reasonably* expected to behave. Vella also explicitly relies on his direct marketing experience in industry to aid in carrying out the analysis.

The authors also attend to the specific statements and wording within the case report. For example, certain descriptors used in the case report such as "prominent" and "important" are taken as terms used to denote salience and, therefore, as possible indicators of reinforcers or punishers. It should be noted that in measuring behaviour as the dependent variable, the most basic datum is the rate of responding among other quantifiable properties and qualitative parameters (Cooper *et al.* 2007; Johnston and Pennypacker 2009). Vella and Foxall (2011) rest on the use specific words in the text such as "increase" or "decrease" and "strengthened" or "weakened" as qualitative indicators of

quantitative changes in the rate of responding. The authors explicitly assume that these descriptors relate to consistent changes in the rates of responding. Further, Vella and Foxall (2011) also interpret such statements as “increases in sales and costs” or “weakened market share” as changes in the emissions of the underlying behaviours that generate such sales and costs and market share.

Vella and Foxall (2011) appear to follow the advice of (Foxall 1994, 1995c, 2010b) on generating operant interpretations by subjecting the evidence, analysis, theory, and methodology to an exhaustive critical evaluation identifying a full audit trail for future replication and highlighting strengths and weaknesses of the work.

A2.6.3 Strategies and Techniques for Analysing Data

The iterative cycle involved in conducting the analysis (Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013) involves **data reduction** (*coding, data displays*, main elements of the SMC framework), **within-case analysis** and the **drawing and verifying conclusions**.

A: Data Reduction: Coding and Data Displays

Data reduction entails sorting and choosing the relevant data while discarding irrelevant information, condensing and summarising the relevant data and transforming it into manageable and meaningful layers of evidence for conclusion drawing and verification (Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013)⁴⁶³. The main techniques used to condense the data collected around the case focus, boundaries and units of analysis, included coding and data displays to allow the in-depth exploration of variables and relations (Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013), and, the elements of the SMC framework as guides to constructing the case report.

Coding is an essential dimension of the analytic process that also serves to condense large chunks of related evidence and facilitate the retrieval of relevant material (Miles *et al.* 2013). The coding scheme is developed following theory (Vella and Foxall 2011, 2013) and, hence, presented deductively (e.g. ‘utilitarian reinforcer’ and ‘informational punisher’ are examples of the codes used). The manner in which coding is applied to the content depends upon where the meaning is presumed to reside according the worldview of the researcher (Potter and Levine-Donnerstein 1999; Vella and Foxall 2011). The locus of meaning lies in the learning history of the individual at its intersection with the current behaviour setting (Foxall 1997b, 1999c). Therefore, meaning is latent in the content and must be inferred by the coder through an investigation of the relevant elements and the recognition of patterns that are consistent with theory (Potter and Levine-Donnerstein 1999; Vella and Foxall 2011). This type of coding follows the “pattern form of latent content” (p. 261) and stands in contrast to those coding procedures that either allow coders to introduce their own interpretation and meanings to the content (“projective form of latent

⁴⁶³ Irrelevant data is discarded mainly on the basis of the units of analysis, case focus and the case boundaries (see Chapter 2, Section 2.3.4).

content” or constrain coders to concentrate only what is “on the surface and easily observable” (Potter and Levine-Donnerstein 1999, p. 259). The coding procedure applied follows that developed by Vella and Foxall (2011) and Potter and Levine-Donnerstein (1999) to ensure validity and reliability.

The structure of the scheme is significantly more intuitive and simpler than the one developed by Vella and Foxall (2011) to facilitate and quicken the pace of pattern recognition and to aid greater consistency in the application of the codes to the evidence.

The two main *data display types* that are used are the checklist matrix and the content-analytic summary table (Miles *et al.* 2013) which are defined in Table 2. Other displays were generated ad hoc from the evidence.

Table 2 – Data Displays aimed at Exploring Variables

Display	Description and Application
Checklist Matrix	Checklist matrices allow the examination of the more important variables of interest (including their component dimensions) through the collection and analysis of comparable data along a pre-specified format. These matrices facilitate systematic data collection, verification, comparability and allow for simple quantitative measures to be drawn (Miles <i>et al.</i> 2013). Vella and Foxall (2011) use this form of matrix to examine the manner in which Wall’s regulates behaviour setting scope and reinforcement patterns. The matrix allowed extracting a very rough indicator of the degree of setting stricture. The checklist matrix will be utilized in identical fashion to contrast setting stricture and reinforcement regulation over the generations contemplated within the report.
Content-Analytic Summary Table	Content-Analytic Summaries condense all related evidence around some aspect of interest and its dimensions within a single table enabling comparisons and the identification and analysis of emergent trends over space and time (Miles <i>et al.</i> 2013). This table is ideal for examining and tracing the development of such variables as the learning history of Wall’s, the extent and nature of change in prevailing environmental contingencies (over generations) including the competing marketing mixes of national manufacturers.

Source: (Miles *et al.* 2013)

B: Within Case Analysis: Theoretical Propositions and Rival Explanations

The main strategy to be used focuses the analytical task around a series of theoretical propositions developed a priori (the research propositions including operational definitions and measures) and specifying the patterns which specifically identify the variables and the causal chain involved (Yin 2014) in operant conditioning. The analytic explanation is constructed by tracing the relevant independent and dependent variables, the extent of the continuity and change in both, and the nature and the cumulative outcomes of the processes involved in the manner specified by theory (as represented in the SMC framework and its underlying operant principles). In addition, these cumulative changes are contrasted to the original baseline to determine the extent of replication of elements of the baseline over the entire history covered by the Ice Cream report. In this sense, the historical narrative becomes secondary to its interpretation in terms of hypothesised theoretical variables and causal processes. The marshalled evidence ‘tests’ whether the causal processes

among variables within the case match the predictions or implications of theory. Propositions are refined and amended according to empirical findings (George and Bennett 2005).

Despite the importance of starting from a basic coherent theoretical position, researchers should avoid bias by maintaining a critical stance through an explicit awareness that the theoretical perspective chosen is a partial view and that rival explanations are possible and may be poised to better explain the phenomena under study (Dnes 1992; Yin 2014). Therefore, attending to rival explanations is important because it enhances the validity, reliability and plausibility of the study (Stake 1995; Patton 2002; Yin 2014): in fact, the use of the BPM may be considered a rival to the use of the three-term contingency through Narrative Interpretation in offering a more comprehensive, systematic and rigorous operant interpretation of the empirical evidence. Other rival *theoretical* explanations beyond this, however, lie beyond the scope of the research. The analysis, however, will also attempt to attend to develop possible competing empirical explanations wherever possible (Vella and Foxall 2011, 2013).

C: Drawing and Verifying Conclusions

Conclusion drawing and verification is on-going process. Importantly, conclusions are only finalised after the entire analytic process is exhausted (Miles *et al.* 2013). A number of supporting conclusion drawing strategies were used (Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013)⁴⁶⁴. The ultimate aim of various procedures and techniques used is to enhance the plausibility, validity, and reliability of the conclusions drawn (Patton 2002; George and Bennett 2005; Vella and Foxall 2011; Miles *et al.* 2013; Vella and Foxall 2013; Yin 2014).

⁴⁶⁴ The techniques used included counting, clustering, partitioning of variables, comparisons, locating rival explanations, identifying and eliminating possible spurious relations, and generally building a strong logical chain of evidence. For details of these techniques see Chapter 11 of Miles *et al.* (2013).

Appendix 3

A3.1 Molecular and Molar Perspectives on Behaviour

Behaviourists also distinguish between *molecular* and *molar* views of behaviour with some (e.g., Baum 2001, 2002, 2004, 2005) claiming that the views reflect different ontological assumptions of behaviour.

One of the essential difference between behaviourist and other explanations lies in the analysis of behaviour through its function rather than providing a topographical description followed by an examination of related or underlying mechanisms (Baum 2005).

The make-up of patterns of behaviour refers to a grouping together of functionally similar responses within a response class irrespective of the topography of behaviour. To illustrate, leafing through a book at a store and, later, purchasing the book online are functionally similar if in both instances the intention is to read it rather than give it away as a present. On the other hand, purchasing the book for personal use or purchasing it as a gift are two functionally dissimilar behaviours even though they are topographically identical⁴⁶⁵. This leads to a further distinction in operant psychology: that of molecular and molar behaviour patterns (Baum 2004, 2005).

A molecular understanding regards behaviour as being composed of discrete responses (behavioural units) that occur at specific points in time. These units are chained together associated by their proximity or *contiguity* thereby forming more complex behaviours. The analytical focus, for example, would be on particular actions such as a lever press, i.e., moments (Baum 2002, 2004). In the book purchase example, the focus would be on the occasions (a book that piques interest), the responses (leafing through the index right down to locating a particular word), and the reinforcing consequences of such behaviour (following the page number and reading the contents).

A molar understanding, on the other hand, regards behaviour as being continuous extended *in* space and time. Patterns of behaviour are composed of a variety of nested activities integrated and coordinated to accomplish a certain function (Baum 2002, 2004). The most significant point that emerges from this is the continuity of behaviour in the sense of extended *in* time rather than simply *over* time (a pattern of leisure behaviour allocations over time and not simply reading a page takes a few minutes). Therefore a molar view of behaviour emphasises the continuity of behaviour and the allocation of behaviour among competing alternatives over time. In the above book-purchasing example, it regards book-purchasing behaviour as one extended pattern with leafing through the book as a nested segment. Book purchasing, on the other hand, may be a pattern nested in a higher level of reading for pleasure. Association proceeds on the basis of *function* rather than contiguity – the analytical focus is on extended activities (Baum 2002, 2004).

⁴⁶⁵ These points are the two dimensions of equifinality: topographically dissimilar behaviours are classed together if the performed function is similar (wearing a coat and lighting a fire to keep warm on a cold day). Topographically similar behaviours are classed separately if the performed function is different (reading a book for pleasure and reading a book to produce a critical review) (Foxall 2010b). See also footnote 93 on page 77 in Chapter 2 (Section 2.3.6A).

The present research assumes a molar perspective. However, the distinction between molar and molecular is cast only at the methodological level and therefore simply refers to separate and nested levels of analysis (cf., Baum 2002, 2004). So defined, the discussions proceed according to the level of detail required by the research at hand. The treatment is similar to the characterization of Simon (1962) who examines nested levels of analysis without ascribing ontological status to the distinction. Simon conceptualises complexity in terms of a hierarchical system composed of inter-related subsystems each with their own child subsystems until the lowest level where basic or elementary subsystems are found. Each of these systems “interacts in a non-simple way” (Simon 1962, p. 468). Unlike Simon (1962), however, aggregate rather than emergent properties are assumed to emerge from one nested level to the next. This is in keeping with radical behaviourist assumptions (see Appendix A1.1).

A3.2 The Meaning of Terms Used in the EAB

The terms “appetitive” and “aversive” should not be taken as implying an intrinsic property of a stimulus (leading to) or implicating “mental acceptance” or “desire” on the part of the individual (Foxall 1990, 1997b, 2007c, 2010b). The relationship between the response and its consequence is not “teleological”, i.e., it does not indicate that the organism acts in such a way because it *plans* or *wishes* to obtain a reinforcer (Foxall 1990, pp. 38-39). Neither should these terms be taken as implying a judgement that some consequences are “good” or “bad” in either the absolute or normative sense. From the standpoint of an objective investigator, stimuli are understood as neutral at the beginning of experimental interventions and later introduced, in controlled fashion, to establish whether these independent variables are positively or negatively reinforcing or punishing given the experimental conditions, the biological history and the learning history of reinforcement and punishment of the individual (Skinner 1953; Catania 1998; Cooper *et al.* 2007; Moore 2008; Johnston and Pennypacker 2009).

Eating ice cream may be an appetitive event for those who consume ice creams to cool off in summer and an aversive stimulus when lactose intolerant or on a diet. Regularly indulging in ice cream (behaviour) leads to weight gain, which, in turn, may, as an aversive stimulus, occasion dieting and reducing ice cream purchase and consumption.

An operant response “is not simply a response that the organism thinks will have a certain effect, it does have that effect” (Foxall 2007c, p. 6). In addition, a reinforcer “is not simply a stimulus that the organism desires to occur. It is a stimulus that will alter the rate of behaviour upon which its occurrence is contingent” (Foxall 2007c, p. 6). Similarly, a discriminative stimulus “is not simply a stimulus that has been correlated with a certain contingency in the organism’s experience. It is one that successfully alters the organism’s operant behaviour with respect to that contingency. Descriptions of contingent behaviour do not take propositions as their object; rather, their object is relationships between an organism’s behaviour, its environmental consequences, and the elements that set the occasion for those contingent

consequences. So operant psychology does not attribute propositional content to any of the elements of the three-term contingency. “Instead of accepting a proposition as its object, the concept of reinforcement accepts an event or a state of affairs ... as its object” (Smith, 1994, p. 128)“... A discriminative stimulus would not be described as a signal that something will happen, but simply that a contingency exists. “It attributes an effect to the stimulus, but not a content” (Foxall 2007c, pp. 6-7).

A3.3 The Literature Around Selection by Consequences

Skinner’s socio-cultural analogy may be conceptualised as an evolutionary framework with underlying principles that answers the question: “how do cultures and their practices evolve?” Section 3.3 in Chapter 3 identifies and details the key components of Skinner’s (1981) framework and establishes Skinner’s answer to *how* cultural practices evolve. The examination along these two themes allows the development of a set of research propositions to apply in the research, the operationalization of Skinner’s key arguments, and the extent to which additional arguments may be needed from evolutionary economics.

However, *Selection by Consequences*, as described in Skinner (1981), does not provide a single stand-alone source from which to draw a comprehensive understanding his thinking⁴⁶⁶. Appendix A3.3.1 establishes the warrant for this claim detailing the problems motivating the reconstruction as a first step to applying Skinner’s analogy in research. For example, the three most serious problems faced related to (a) Skinner’s account being irregularly dispersed across several publications (namely in Skinner 1953, 1961b, 1966a, 1969, 1971, 1973, 1974, 1978, 1981, 1984b, h, i, f, a, e, 1986, 1989a, b); (b) the analogy is not developed progressively in a cumulative systematic fashion; and, (c) several key dimensions of Skinner’s thinking are largely implicit or missing in Skinner (1981)⁴⁶⁷.

Appendix A3.3.2 also provides a brief description of the methodology used in locating Skinner’s publications.

A3.3.1 Problems Encountered

Skinner (1981) summarises and consolidates material already appearing in several other of his earlier publications (Campbell 1984a). However, in identifying Skinner’s socio-cultural evolution analogy for the purposes of operationalization and application to firm behaviour, two sets of inter-related obstacles were identified. The first set of obstacles arose because Skinner’s account on socio-cultural evolution is irregularly dispersed across several of his

⁴⁶⁶ Contrast Skinner’s broad and incomplete treatment of the subject matter in *Selection by Consequences* (Skinner 1981) to Donald T Campbell’s (1965, 1969) focused and detailed framework. Barlow (1984) makes a similar observation arguing that the treatment of the subject of socio-cultural evolution by Skinner (1981) is not as “sophisticated” as that found in Campbell’s work (p. 482).

⁴⁶⁷ See also Chapter 1, Section 1.2.1.

publications, namely, in Skinner (1953, 1961b, 1966a, 1969, 1971, 1973, 1974, 1978, 1981, 1984b, 1984h, 1984i, 1984f, 1984a, 1984e, 1986, 1989a, 1989b). Second, a number of important dimensions of Skinner's earlier thinking appear either underemphasised or implicit in or missing from the 1981 publication.

A. Analogy is Irregularly Dispersed and Hard to Track

Skinner (1981) cites only four publications, three of which are his own. With the exclusion of Skinner (1971), none of the cited publications are references to any of his lengthier treatments of socio-cultural evolution. Therefore, Skinner's ideas are fragmented across disparate sources that are not necessarily easy to track. In addition, the reference to Skinner (1971) is simply made to drive home his point with respect to the need for cultural design to improve the human condition.

Skinner does not develop his analogy progressively in a cumulative systematic fashion. Plotkin (1987) argues that Skinner only fully developed the selection-operant conditioning analogy in the late 1970s and earlier references to the similarity between operant conditioning and the dynamics of selection were more casual and loose. Plotkin (1987) also concludes that a number of dimensions to the analogy do "not constitute a coherent system of thinking" (p. 143). Further, Skinner seemed more concerned with providing an argument in favour of cultural design and modifying cultural practices for the benefit of mankind and human survival (e.g., Skinner 1953; Skinner 1961b, 1966a, 1969, 1971, 1989b; see also Glenn *et al.* 2001) than to conceptualise a relatively comprehensive framework for socio-cultural evolution for application in research. Instead of developing an empirical research programme around the evolutionary analogy, which could have encouraged further conceptual development (Stearns 1984; Plotkin 1987), Skinner merely engaged in drawing "plausible" inferences from experimental results directly to biological (e.g., Skinner 1975, 1984b, 1986, 1989a) and cultural evolution (e.g., Skinner 1966a, 1969, 1971, 1989b).

Some inconsistency and ambiguity was found in some publications (mainly, Skinner 1953, 1961b, 1966a, 1969, 1971, 1989b) making the account more difficult to understand and draw a *correct* and *definitive* interpretation of his ideas⁴⁶⁸. Skinner draws several conclusions implicitly in any given text rather than making the reasoning more explicit. In certain areas, and as shall be demonstrated later, Skinner's thinking is obscure to the extent that some authors find the analogy as presented trivial, and oversimplified. Richard Dawkins (1984), for example, raises the criticism that Skinner's account misses tackling the issue of what is being selected (i.e., the unit of selection). Skinner's response (1984h) does not provide a clear answer. Skinner would have benefitted from further reflection on the point in post-1984 work and from references to already current evolutionary theory. Reference to the influential work of Elliott Sober (1984) on the subject, for example, may have sharpened Skinner's statement with respect to how cultural practices may be appropriately

⁴⁶⁸ See, for example, (a) Chapter 3, Section 3.3.2B, on the inconsistent and ambiguous treatment of the term "cultural practices", and, (b) Appendix A3.4, on the inadvertent interpretation of Selection by Consequences referring to Group Selection by several authors due to Skinner's ambiguous treatment of the subject matter).

defined as the *objects or units of selection*. (See also Chapter 3, Section 3.4.3B).

Skinner's presentation is highly speculative and without the necessary warrant. For example, the claim "the human species presumably came much more social when its vocal musculature came under operant control" (Skinner 1981, p. 502) is not substantiated in any way. What of the development of human cognitive functions? Additional examples are (a) the presumption of operant conditioning being an evolved feature among humans (see also Skinner 1966c, 1975, 1981, 1984b, 1986); (b) Skinner's claim that individuals do not *store* information about their learning experiences; rather they are changed by reinforcement and punishment contingencies (Skinner 1974, 1981, 1984f, g, e, 1985)⁴⁶⁹; and, (c) 'ad hoc' assumptions of histories of reinforcement shaping and maintaining individual behaviour for the purposes of establishing an account that is consistent with theory⁴⁷⁰. Both Barlow (1984) and Staddon (2001) object to Skinner's lack of referencing the relevant literature in the field. Barlow (1984), for example, remarks: "I was equally taken aback by the absence of references to highly relevant literature closer to home for Skinner. In a classic paper Pringle (1951) explored the parallels between learning and natural selection. Campbell (1975) has written on almost the same theme as Skinner and is often cited. Pringle's and Campbell's treatments are more sophisticated than the essay before us" (p. 482). Staddon (2001) makes very similar objections.

Several authors (Barlow 1984; Bolles 1984; Dawkins 1984; Delius 1984; Gamble 1984; Honig 1984; Staddon 1984; Stearns 1984) make references to those who have drawn the analogy between trial and error learning and the selection of non-prescient variations. Of these, for example, Donald Campbell's work is the more frequently cited (Barlow 1984; Bolles 1984; Gamble 1984; Honig 1984; Staddon 1984). As Barlow (1984) notes, Skinner neglects the work of Campbell who explicitly drew the analogy between reinforcement of exploratory behaviour and selection (e.g., Campbell (1956, 1969). Skinner's evolutionary analogy should have woven the relevant arguments of those who had already discussed the learning-selection analogy in the past into his work also noting his own early and recurrent treatment (e.g. Skinner 1953; Plotkin 1987; see also Morris *et al.* 2004). It is only in the reply to Bolles (1984), for example, that Skinner (1984h, p. 502) demonstrates his early treatment of the evolutionary analogy and its applicability to the selection of cultural practices. Such attention would have addressed, in part, the claims of a lack of originality (e.g., Stearns 1984; Staddon 2001), of depth (e.g., Staddon 2001) and of triviality (Hallpike 1984) or "little heuristic value" (Timberlake 1984, p. 500), and, the recurring argument that Skinner's view was "written in a vacuum" and in "total isolation" from current issues within evolutionary theory (e.g., Barlow 1984, p. 482; Delius 1984). Barlow (1984), Ghiselin (1984) and Delius (1984) claim that Skinner's neglect of advancements in evolutionary biology gives rise to an oversimplified view. Dahlbom (1984) presents a case to argue that Skinner lacks an understanding of natural selection theory. Barlow (1984) makes similar comments. Stearns (1984) finds Skinner's analogy between "evolution and learning apt but hardly new, and his picture of evolution errs in the details (1984, p. 499). Plotkin (1987) makes similar criticisms.

⁴⁶⁹ The latter of these claims seems to arise from Skinner's materialist philosophy which rejects explanations based on concepts classed "in the head" of the individual, in this case 'memory.'

⁴⁷⁰ See Dennett (1975) on this last point.

Skinner (1981) also wrongly presumes a working knowledge of and familiarity with operant psychology on the part of the reader. All the operant principles outlined in Chapter 3 (with the exclusion of motivating operations) are modern renditions and extensions of Skinner's work in the EAB (see Ferster and Skinner 1957). Hence, some reference to these basic principles would have been essential to assist an audience otherwise unfamiliar with operant psychology.

B. Earlier Ideas

A number of important dimensions of Skinner's earlier thinking appear either underemphasised or implicit in or missing from the 1981 publication.

In publications prior to *Selection by Consequences*, Skinner awards prominence to both the importance of the evolution of social behaviour *and* the role the social dimension plays in broadening the range of behaviours that humans have acquired in their evolution and during their individual lifetimes (e.g., Skinner 1966c; Skinner 1971, 1973, 1975, 1978, 1981). These dimensions are underemphasized in Skinner (1981). In parallel, the important conceptualisation of social interaction expressed in terms of interlocking and reciprocal (i.e., mutually-reinforcing, regulating, and controlling) patterns of verbal and non-verbal behaviour within specific contexts that also exert control (Skinner 1953, 1957, 1961b, 1971) is missing in Skinner (1981). The following excerpts serve as examples of Skinner's conceptualisation of mutually reinforcing social interaction: "the behaviour with which a parent controls his child, either aversively or through positive reinforcement, is shaped and maintained by the child's responses" (Skinner 1971, p. 166); and, "all control is reciprocal, and an interchange between control and countercontrol is essential to the evolution of a culture" (Skinner 1971, p. 179). Social behaviour is reinforced and punished through the mediation of others and the aggregate or "combined" behaviour of interacting individuals within a social context produces and is, in turn, controlled by the aggregate effects or consequences (Skinner 1953, 1957, 1961b, 1971)⁴⁷¹.

Skinner (1971) explicitly specifies his conceptualisation of the processes of selective "transmission" to be Lamarckian: variants of cultural practices acquired by a single individual in any generation when resolving environmental problems may be reproduced (or replicated)⁴⁷² and retained⁴⁷³ through interaction among individuals within a single cultural grouping and across cultural groups during any one and over several generations⁴⁷⁴. The Lamarckian characterisation is not explicitly visible in Skinner (1981).

A concept that is entirely missing or inexplicit from Skinner's analogy is the *criterion for reinforcement*. In earlier works (e.g., Skinner 1950; but see also

⁴⁷¹ See also Skinner (1989b).

⁴⁷² Skinner (1981) uses the term transmission to refer to the process analogous to reproduction (Skinner 1984h, p. 504) or the production of copies (Dawkins 1984), i.e., to replication.

⁴⁷³ Retention *preserves* positively selected trait variations and, together with replication, ensures the continuity or survival of preserved variants in future.

⁴⁷⁴ Skinner (1981) does not explicitly state that his analogy is Lamarckian or clarify any further on the point when both Schull (1984) and Dawkins (1984) comment on this dimension.

Skinner 1984c), the reference to an arbitrary reinforcement criterion set by the researcher in an experimental setting is explicit. The criterion for reinforcement is important because there is sufficient similarity between this experimental standard and the notion of the *selective criterion* in socio-cultural evolution to draw a useful analogy between the two. The selective criterion is an integral part of socio-cultural evolution and refers to the requirements that the entity being selected must satisfy in varying degrees to be retained and, hence, continue or survive (Campbell 1969; Aldrich 1979; Van Parijs 1981; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010).

It is in his answers to his critics (Skinner 1984h, i, f, e, a), particularly (Skinner 1984h), that several aspects are clarified and amplified. For example, Skinner (1984h) draws the analogy between a cultural practice and an individual organism's traits to drive home the point that Selection by Consequences at the cultural level is not about group selection. This clarification is needed since a number of authors (e.g., Barkow 1984; Barlow 1984; Dawkins 1984; Donahoe 1984; Gamble 1984; Hailman 1984; Hallpike 1984; Harris 1984; Hogan 1984; Maynard Smith 1984; Stearns 1984) interpret Skinner (1981) as implying group selection (see Appendix A3.4).

In later publications, namely (Skinner 1984b, 1986, 1989a, b), Skinner adds minor details to his perspective on socio-cultural evolution. Unfortunately, Skinner fails to integrate the various contributions made on the subject by his critics in this body.

C. Conclusion

In conclusion, therefore, the analogy, as it stands in Selection by Consequences (Skinner 1981) is more of a broad-brush generic framework that requires reconstruction with reference to several dispersed sources within a single locus.

Careful readings of Skinner (1981), in the light of the general principles of operant psychology and of Skinner's (1984h) clarifications in reply to some of the criticisms, reveal several implicit researchable propositions that would have made Skinner's case stronger had he attended to these dimensions more clearly and explicitly and had he contextualised these ideas within the broader psychological and evolutionary literature. Set against a backdrop of operant psychology and the continued developments therein, Skinner's analogy merits evaluation in research. The idea that one gets from reading the various criticisms of Selection by Consequences is not one of outright rejection. Rather, it is one best summarised by Plotkin (1987): "by and large Skinner referred to the analogy merely to point out surface similarities and consequently that he never employed it to any real conceptual advantage" (Plotkin 1987, p. 39).

A3.3.2 Methodology Adopted to Locate Skinner's Publications

The methodology adopted to locate Skinner's publications for the purposes of constructing a synthetic review of his core evolutionary analogy was fashioned on Greenhalgh and Peacock (2005). The aim was to generate a relatively comprehensive set of primary publications by Skinner for examination on

whether or not Skinner treated the analogy therein. A list of the relevant publications could be then drawn from this set to proceed in constructing Skinner's socio-cultural analogy.

Locating the relevant corpus involved: (1) establishing a predefined search or "protocol driven" strategy based on using a number of databases. The three main sources were (a) PubMed Central at <http://www.ncbi.nlm.nih.gov/pmc>, a widely used repository of psychology journals, (b) the B F Skinner Foundation Website which contains a list of Skinner's publications at <http://www.bfskinner.org/publications/full-bibliography/>), and, (c) hand searching Skinner's book length treatments (e.g., two editions of Cumulative Record (Skinner 1961a, 1972)). Catania and Harnad's (1984) publication was also very important. Second, "reference tracking" or scanning the bibliography of the relevant references found for additional publications. Morris *et al.* (2004) was instrumental in this regard as the authors studied the extent to which Skinner treated biological participation in behaviour and evolution throughout his prolific career. Third, other already known sources were used including the work of Sigrid Glenn, Gordon Foxall, A. Charles Catania, and others.

A3.4 The Issue of Group Selection

Skinner's model for cultural selection is a theory based on selection operating on the individual rather than the group level (Skinner 1961b, 1984e, h, f). However, several authors (e.g., Barkow 1984; Barlow 1984; Dawkins 1984; Donahoe 1984; Gamble 1984; Hailman 1984; Hallpike 1984; Harris 1984; Hogan 1984; Maynard Smith 1984; Stearns 1984) interpret Skinner (1981) as implying *group selection* particularly because Skinner did not properly define the object of selection and the consequences by which cultural practices are selected (Catania 1984; Dawkins 1984).

Broadly, group selection refers to natural selection operating between groups of individuals in contrast to selection operating between individuals: Selection among groups would produce adaptations that are advantageous to groups as entire entities (the objects or targets of selection rather than to individuals (Wilson 1992; Mayr 1997, 2002; Ridley 2004; Okasha 2006; see also Hodgson and Knudsen 2010).

According to Skinner (1981) cultural evolution takes place when practices emerging from individual problem solving emissions are retained and replicated across the group to the extent that these practices "contribute to the success of the practicing group in solving its problems. It is the effect on the group, not the reinforcing consequences of individual members that is responsible for the evolution of the culture" (p. 502). And, "What is good for a culture is whatever promotes its ultimate survival, such as holding a group together or transmitting

its practices” (p. 503)⁴⁷⁵. Given these and statements by Skinner to similar effect, the commentators are right in interpreting the ambiguous exposition as assuming group selection⁴⁷⁶.

Skinner’s account is *not* one of group selection: first, radical behaviourism implies a methodological individualist perspective (Foxall 1990, p. 32), and, secondly, like Darwinian natural selection, Skinner’s analogy is based on selection operating on the individual rather than at the level of the group (Skinner 1961b, p. 536; 1984e, pp. 702, 705; 1984h, f)⁴⁷⁷: “I used phrases such as ‘survival of species’ and ‘advantage to the species,’ **carelessly**, perhaps, but scarcely ‘revealing [my] endorsement of group selection” (Skinner 1984e, p. 705, emphasis added). In addition, the core argument with respect to the evolution of cultural practices revolves around the survival of the practices themselves rather than their past, present, and future individual and/or groups of practitioners (Catania 1984; Skinner 1984f). Skinner (1984h) provides the necessary clarifications. To explain and clarify his point with respect to whether the argument that Selection by Consequences implies group selection, Skinner (1984h, 1984f) draws an analogy between the evolution of cultural practices to the evolution of the physical traits of species: each species have different and evolved types of hearts, eyes, ears and so on performing similar function⁴⁷⁸.

Catania (1984) summarises the various exchanges on the subject and provides a very useful interpretation: at the cultural level of analysis “we speak of the survival of practices and not of their practitioners; classes of behaviour survive as cultural practices, and not the group, the individuals in it or their descendants” (p. 713). Similarly, at the individual level of analysis, only certain behaviours in the individual repertoire recur over the lifetime of the individual. Even within organisations, practices may outlive generations of employees.

The Meaning of Survival: The term *survival* here is interpreted in relation to the continuity of behaviour or practice within the individual’s and the group’s respective repertoires in interaction with prevailing contingencies. Reinforced

⁴⁷⁵ There is some inconsistency in exposition when contrasting these statements to earlier ones, for example, with Skinner (1969, 1971, 1974). In some instances Skinner assumes that “a person acts upon the environment, and what he achieves is essential to his survival and the survival of the species” (Skinner 1974, p. 210; 1984e, p. 705; 1989b) albeit indirectly (Skinner 1984h) or as an aggregate effect (Skinner 1984h, f). In others, (e.g., Skinner 1974, p. 226), Skinner mentions behaviour that enhances the welfare of the individual. Despite these inconsistencies, the effectiveness in resolving the problems posed by dynamic social and physical contingencies at both levels clearly remains a recurring theme in Skinner’s socio-cultural evolutionary analogy (Skinner 1953, 1961b, 1966a, 1969, 1971, 1974, 1981, 1984b, h, i, f, a, e, 1986, 1989a, b). And, ultimately, the selecting consequences are positive and negative physical and social reinforcers and punishers (Skinner 1989b, p. 115).

⁴⁷⁶ Dawkins (1984, p. 486) is correct in saying that Skinner’s account implies group selection because it lacks clarity with respect to the unit of selection and to the nature of the consequences by which the unit of selection is selected. This dimension is examined in Chapter 3, Section 3.4.3 and Section 3.4.4.

⁴⁷⁷ The reference to Skinner (1984e, p. 702) is in reply to Barkow (1984), while the reference to Skinner (1984e, p. 705) is in reply to Hailman (1984). See also Delgado (2012) on these points.

⁴⁷⁸ This emerges from the replies to Dawkins (1984), Harris (1984), and Maynard Smith (1984). Skinner (1986) clarifies further the spirit of his thinking: “when we speak about the evolution of the automobile, we do not mean anything like the evolution of the horse. We mean the evolution of certain cultural practices through which new ways of making automobiles, as variations, were selected by their contributions to a reinforcing product of human behaviour” (pp. 120-121).

behaviours and practices are retained because of the contribution of particular behaviours, at the individual level, and practices, at the cultural level, to the effectiveness in solving the problems posed by dynamic and complex physical and social contingencies (i.e., in relation to the criterion of reinforcement). In this sense, behaviours and practices hold survival value and confer advantage relative to other behaviours and practices in respect to the reinforcement criterion⁴⁷⁹.

And, the Skinnerian account emphasises aggregate reinforcing effects on aggregate behaviour. It is always the individual who benefits or loses out from naturally selected adaptations.

A3.5 A Summary of the Necessary Components of an Evolutionary Explanation Based on Natural Selection and Operant Conditioning

Table 3 summarises the necessary components of an evolutionary explanation based on the mechanism of natural selection. The table also summarises which of these components are explicit or implicit in Skinner's analogy, and which had to be elaborated upon with reference to other literatures.

⁴⁷⁹ The terms 'contribution' and 'effectiveness' should not be misconstrued as implying incremental progress such as improved efficiency or as expressing a value judgement ("good" versus "bad") (e.g. Hodgson and Knudsen 2010). Behaviour and practices are either appropriate (adapted) or inappropriate (maladapted) to resolving environmental problems.

Table 3 – A Summary of the Necessary Components of an Evolutionary Explanation Based on Natural Selection and Operant Conditioning

Requirements for an Evolutionary Explanation	Explicit, Inferred, or Elaboration from Skinner’s Analogy
Variation	<p><i>Mechanism for Variation:</i> Problem solving occasioned by social and physical environmental contingencies that are not sufficiently similar to the past to the extent that the functional relations specified therein may be destabilized (Chapter 3, Section 3.2.7).</p> <p><i>Source of Variation:</i> The individual’s behaviour. The environment occasions or motivates variation (Chapter 3, Section 3.2.5 and Section 3.2.7).</p>
Selective Retention and Elimination	<p><i>The Environment:</i> Physical and social contingencies and the regulatory dimension of such contingencies (Chapter 3, Section 3.2.3 and Section 3.3.2).</p> <p><i>The Unit of Selection:</i> At the individual level of analysis there is selection of the individual’s repertoire of operants for its operants and the properties of these operants (directly) and for the learning history (in terms of rules) that has contributed to the properties (indirectly). At the cultural level of analysis, there is selection of the cultural repertoire of the group (sum total of individual repertoires) for the operants and operant properties (directly) and for the learning history (in terms of rules) that has contributed to the properties (indirectly) (Chapter 3, Section 3.4.3 and 3.4.4).</p> <p>Whereas the storage metaphor is rejected at the level of the individual, it is adequate for the cultural level of analysis, for example, codified rules and laws or instruction manuals (Skinner 1981, 1984h). The term “learning history” in reference to cultural groupings implies these physical products and formal/informal plus codified/verbal rules.</p> <p><i>Fitness:</i> defined as the differential propagation or replication of a particular or firm-specific instruction set in the entire population (Hull <i>et al.</i> 2001; Knudsen 2002; Hodgson and Knudsen 2010). The instruction set is conceptualized as carrying useful information with respect to how past problems of environmental adaptation were solved (Hodgson and Knudsen 2010). Fitness is measured as the ‘relative importance of individual brand shares in relation to the share of an average member of the entire manufacturer population’. Economic fitness demonstrates the result of the processes of evolutionary patterns of economic change (Metcalf 1998, 2005). Appears implicit in Skinner’s argument (Chapter 3, Section 3.4.3A).</p> <p><i>Selective criterion:</i> Reinforcement criterion established by physical and social contingencies. The requirements that the entity being selected must satisfy in varying degrees to be retained and, hence, continue or survive (Campbell 1969; Aldrich 1979; Van Parijs 1981; Metcalfe 2005; Aldrich and Ruef 2006; Hodgson and Knudsen 2010). (Chapter 3, Sections 3.2.7, 3.2.8A, 3.3.2C, and 3.4).</p>

Requirements for an Evolutionary Explanation	Explicit, Inferred, or Elaboration from Skinner's Analogy
	<p><i>Selective processes and dynamics that govern interaction:</i> The operant conditioning processes by which physical and social environmental contingencies select for and against cultural practices are characterized by positive and negative reinforcement and punishment. The acquisition of behaviour involves environmental shaping. The maintenance of behaviour involves reinforcement and punishment processes that regulate the recurrence of past emissions. Weakening involves a process whereby some practices are positively or negatively punished to reduce the rate of emissions of such repertoires. Extinction involves the discontinuation of previously reinforced practices through environmental arrangements that function to withhold such reinforcement. Both weakening and extinction processes regulate the discontinuation of practices. Behaviour may also be acquired through observation and imitation. (Chapter 3, Section 3.2 and Section 3.3 especially Section 3.3.1).</p>
Inheritance	<p><i>Consistent relationship:</i> The empirically derived definition of an operant – “a class of responses defined by a functional relation with a class of consequent events that immediately follow those responses” (Johnston and Pennypacker 2009, p. 6).</p> <p><i>Mechanism for Retention and Replication:</i> Analogy drawn between learning history and the genotype where the former may be conceptualized as having a regulatory dimension that serves retention and replicator function. At the cultural level, the regulatory dimensions of individual and cultural histories. (Chapter 3, Section 3.4.4).</p>
The Genotype (and Replication)	<p>Analogy drawn between learning history, as the individual's repertoire of reinforced and punished behaviours or quasi-stable dimensions of behaviour, and replicating genotypes. Learning history reflects the history of changes undergone by the individual as her repertoires came in contact with various environmental variables, and, may be thus conceptualized as a lifetime of several reinforcement and punishment contingencies. In this sense, certain repertoires are retained and may be replicated (i.e., reproduced) in future given sufficient similarity of future behavioural contexts. In operant psychology, therefore, learning history allows the prediction of certain repertoires. Contingencies summarize empirical regularities or lawful relations between antecedent events that set the occasion for behavioural emissions, the operant emission, and the consequences such an operant generates within the environment. Specification of the contingencies is therefore a specification of empirical regularities or consistencies. Hence, in operant psychology, rules express this regularity and consistency (Hayes and Hayes 1989). Therefore, learning history may be expressed in terms of rules and therefore may be described as holding a regulatory dimension. (Chapter 3, Section 3.2.9 and Section 3.4.4).</p> <p>At the cultural level of analysis, selection for, albeit indirectly, the regulatory dimension expressed by historically generated cultural practices (individual members' learning histories and cultural history including physical verbal storage artefacts).</p> <p>Social transmission or the replication of practices across members of the population involves behavioural shaping, maintenance, discontinuity, and observation, imitation, and modelling processes (Skinner 1966c, 1981, 1984b, f, 1986,</p>

Requirements for an Evolutionary Explanation	Explicit, Inferred, or Elaboration from Skinner's Analogy
	1989b). At the cultural level of analysis, Skinner (1981, 1984b, 1984f, 1986, 1989b) claims that observation, imitation, and modelling are less effective than shaping in the acquisition and the transmission of cultural practices. Imitation and modelling, for example, only award the imitator with an already existing repertoire – that of the individual being imitated: operant shaping prepares individuals for a far greater flexible and broad behavioural repertoire (e.g., Skinner 1984b, 1986; Skinner 1989b). The emergence of verbal and social behaviour and transmission via rules instead of modelling and imitation are important features that allowed the evolution of human individual and cultural behaviour (Skinner 1981, 1984f). (Chapter 3, Section 3.3.2).
Interaction	Interaction is defined as the process of interchange between an organism and its environment (Skinner 1981) that results in replication being differential (Hull 1980, p. 318) and/or the in emergence of variation (Mayr 1997) however slight or substantial depending on whether prevailing contingencies are sufficiently similar to the past. Within a social environment, interactions are expressed in terms of interlocking and reciprocal (i.e., mutually-reinforcing, regulating, and controlling) patterns of verbal and non-verbal behaviour within specific contexts that also exert control (Skinner 1953, 1957, 1961b, 1971). Within the Marketing Firm, socio-economic relations are examined through bilateral contingencies of reinforcement and punishment to characterize mutuality-only, literal exchange-only, and mutuality-plus-exchange relations (Foxall 1999b; Vella and Foxall 2011). (Chapter 3, Section 3.3.2, and Chapter 4, Section 4.3),
Outcome of Selection	Differential retention and replication of individual operants and, eventually, the cultural practices through the effectiveness of the operants and cultural practice (including properties) in contributing solutions to the environmental problems faced by individuals within the group. (Chapter 3, Section 3.4.3 and Section 3.4.4).

A3.6 The Dynamics Involved in Selective Retention and Elimination

Nelson and Winter (1982) claim that selection occurs through the process of competition (but not necessarily exclusively so) “over time, the economic analogue of natural selection operates as the market determines which firms are profitable and which are unprofitable and tends to winnow out the latter” (p. 4). No mention is made *how* competitive factors operate on the strategies of the individual firm to produce the *actual* environmental consequences and how this results in selective retention and elimination. Vromen’s (1995) evaluation of Nelson and Winter (1982) also fails to recognise this shortcoming even though he is fully aware of operant conditioning as an evolutionary mechanism (Vromen 1995, pp. 118-119).

Following Campbell (1969), Aldrich (1979) and Aldrich and Ruef (2006) mention reinforcement in relation to the operation of an external environment but does not explore and develop the theme.

In their recent publication, another two of the leading Neo-Darwinian evolutionary theorists in economics, Hodgson and Knudsen (2010), make mention of neither Selection by Consequences nor reinforcement learning nor the Law of Effect as possible characterisations of the selection process⁴⁸⁰. They offer no explanation for the manner in which interaction produces selective retention and elimination. Becker (2001), one of Hodgson’s doctoral students, provides a good overview of the various components of the VSI but his explanation lacks the process that explains the dynamics of interaction, i.e., how a selective environment operates on the entity being selected.

Bottazzi and Dindo (2013, pp. 508-509) claim that within the vast evolutionary literature of Schumpeterian flavour, the selection dynamics of market interactions are treated as a “black box” and demand is considered as exogenous to the firm to focus instead on the “production domain” (e.g., on technological innovation, organisational routines, and so on).

⁴⁸⁰ Within psychology, the Law of Effect is the highly influential principle underlying trial-and-error learning (Dennett 1975; Catania 1999; Staddon 2001; Blute 2010). In the early years of the last century, behaviourist Edward Lee Thorndike was the first psychologist to study the phenomenon. Thorndike’s Law of Effect summarises the relationship between positive or negative changes in the rate of behavioural responses resulting from inadvertent success or failure in repeated problem solving situations (e.g., Pierce and Cheney 2008). The consequential mode of explanation assumed by Thorndike was evocative of Darwinian selection (Catania 1999) but not made explicit (Campbell 1956). In operant psychology, B.F. Skinner recognises that operant conditioning very closely characterises the Law of Effect (Skinner 1938, p. 111; 1953; Dennett 1975; Day 1980, pp. 222-223; Plotkin 1987; Mcdowell and Ansari 2005; Moore 2008). Skinner (1966b, 1980, 1987), however, claims that operant conditioning provides a more precise and comprehensive explanation of the observed behaviour (cf. Dennett 1975). The consequential mode of explanation summarised by operant conditioning is explicitly stated as representative of natural selection (e.g., Skinner 1981).

Appendix 4

A4.1 Overview of the Research Programme Associated with the BPM

Consumer Behaviour Analysis (CBA) is a research program that aims to critically apply radical behaviourist philosophy and operant principles to produce an alternative explanation to purchase and consumption behaviour, on the one hand, and, to marketing, on the other.

The programme emerged in the 1980s and is located within the domain of marketing at its intersection with economics and psychology. A central emphasis of theorising and research in the CBA argues that radical behaviourism occupies an underappreciated niche in these spheres as cognitive assumptions dominate the literature. Both views have specific contributions to make to the study of consumer and marketing behaviour: with their respective limitations, each perspective generates a different set of research questions that provide a broader and complementary understanding of the phenomena in question⁴⁸¹.

The BPM is the central and unifying framework of the programme (Foxall 1996b, 2005, 2010b; Foxall and Sigurdsson 2013; Vella and Foxall 2013). The model originated from the (1) claim that radical behaviourism and operant psychology have specific contributions to providing a rigorous and systematic framework within which to study the situational influences of real world consumer and marketing behaviour; and, (2) the problem posed by the EAB with respect to the extent to which the principles uncovered in an experimental science may be extended to the real world (Foxall 1990, 1996b, 1998b, 2010b). Upon exiting the abstract, contrived, and confined environments of experimental laboratories it becomes significantly more difficult to attribute environmental control to specific contingencies. “Conceptual attenuation” is a significant problem that must be addressed if behaviour analysis is to meaningfully contribute to understanding and explaining economic behaviour (Foxall 1990). Inevitably, therefore, the reliance on interpretation increases (Foxall 1990, 1996b, 1998b, 2010b). However, to remain within the framework of behaviour analysis while avoiding “armchair extrapolations” or invalid accounts (Staddon 2001) or ad hoc assumptions (Dennett 1975), the argument is made in favour of developing a systematic and rigorous methodology that incorporated a valid and reliable framework through which to conduct these interpretations (Foxall 1990, 1996b, 2010b)⁴⁸².

The BPM has been fundamental in establishing the feasibility, scope, and, to a lesser extent, the limits of radical behaviourist explanation to interpreting and promoting a systematic and rigorous theoretical and empirical understanding of the situational influences of real world economic choice behaviour (Foxall 2010b, c; Foxall and Sigurdsson 2013). The bulk of the theoretical, interpretative, and empirical work undertaken so far utilising the BPM focuses

⁴⁸¹ See also (1) Foxall (2001) who introduced the appellation, Consumer Behaviour Analysis; (2) Foxall (1990) who provides a critique of EAB and elaborates the BPM; (3) Foxall (1996b, 1997b, 2010b) as fundamental texts within the programme encompassing much of the theoretical and conceptual development of the BPM; and, (4) pre-1990s work on the CBA may be found in (Foxall 1990) and (Foxall 1996b). What follows emphasises work between 1990 to date.

⁴⁸² See also Chapter 1 and Chapter 2.

on purchase and consumption within affluent societies where marketing, characterised as a dynamic, competitive, innovating, and differentiating force, is an inherent dimension of the context of behaviour.

The origins of the *Marketing Firm* (Foxall 1999b) lie in the early (e.g., Foxall 1990) and recurring contention that using a common conceptual framework provides a strong basis for investigating and understanding the nature of the interrelationship between purchase and consumption behaviours and marketing (Foxall 1990, 1994, 1997a, 1999b, 2001; Vella and Foxall 2011). Simply put, within affluent societies marketing is one of the more important situational influences of purchase and consumption and vice versa. The *Marketing Firm* provides an operant interpretation of behaviour of the firm to complement the one developed on purchase and consumption behaviours (Foxall 1990, 1997b, 2001, 2005, 2007a; Vella and Foxall 2011, 2013). Hence, marketing practices are interpreted by adopting the BPM and its underlying philosophy and principles.

The application of the BPM to generate an operant understanding of the marketing behaviour of firms is still in its early stages of development. The feasibility of such an approach is still being tested. The case study of Vella and Foxall (2011, 2013), however, provides empirical support for further research within the perspective.

A4.2 Parameters for Identifying the Stricture of the Behaviour Setting Scope and Determinants of the Strength of Approach and Escape-Avoidance

A.4.2.1 Determining the Stricture of the Behaviour Setting Scope

The stricture of the setting scope is determined by examining the several aspects of the actual behaviour setting. Foxall (1990, 1992a, 1997b, 2010b) proposes the following parameters used by Vella and Foxall (2011) in their qualitative case study.

- (1) Access or routes to and availability of reinforcement and punishment which is determined by:
 - (a) The quantity and prominence of reinforcers (response-strengthening events) and punishers (response-weakening events) available.
 - *A smaller number of reinforcers where one or a few of these are especially salient is taken to denote a relatively closed behaviour settings scope. Contrast, for example, supermarket aisles where there is an abundance of stimuli to the checkout counter of the supermarket.*
 - (b) The number of ways in which these reinforcers may be obtained/increased and punishers removed/weakened.
 - *Relatively closed settings are characterised by a relatively narrow range of available responses. Typically, one or a very small number of behaviours are available. Once in the waiting line to check out, there are*

only two responses available to the consumer, pay the cashier or abandon shopping.

(c) The extent to which it is necessary to perform specific and prescribed tasks *and/or* the extent to which other specific tasks are proscribed to generate reinforcement.

- *Once items are in a shopping cart there is only one way to obtain groceries – payment. The setting is relatively closed.*

Three additional parameters help ascertain the relative setting stricture on this dimension:

(i) The extent to which the necessary tasks that are to be performed are clearly and precisely specified and defined. Usually, the necessary tasks are expressed through explicit rules and instructions imposed by others.

- *Closed settings are characterised by clearly defined and specified tasks. The degree of variation is limited. Open settings, on the other hand, would imply a higher degree of variability.*

(ii) Necessary tasks are typically reinforced.

- *When buying a car in cash, consumers avoid paying interest rates that would have to be paid when purchasing on an instalments plan.*

(iii) Different tasks are interchangeable for ones that are reinforced.

- *For example, retailers allow a range of payment instruments, cash or debit/credit cards, leasing, and hire purchase.*

(2) The degree of external control of the contingencies within a given situation is determined by:

(a) Whether externals (environmental agents) control access to reinforcers which involves:

(i) Establishing the nature, number, and quality of those who control access to reinforcers.

(ii) The degree to which externals control access to reinforcement by means of regulating states of deprivation and satiation (for example, by withholding or delaying reinforcement).

- *Relatively closed settings are characterised by a single or, at the very best, few providers of reinforcement. The provider of reinforcement (i.e., marketers in the case of consumers) usually has some degree of control over the levels of deprivation. Freezer and outlet exclusivity limits access to reinforcement from alternative brands and controls the level of deprivation among consumers in the sense that they must do without eating ice cream unless the latter purchases the exclusive brand. Any delays in stocking a retailer with the exclusive brand may be interpreted as increasing the time between behaviour (purchasing ice cream) and reinforcement upon purchase and consumption. A wider variety of retail stores in an area signifies a larger number of routes to reinforcement, and, hence, a more open setting despite one particular retailer being tied exclusively to a manufacturer's brand repertoire.*

- (b) The extent to which there is ready access to being in alternative (and substitute) situations which is determined by:
- (i) The number and quality of possible alternative situations
 - (ii) Whether non-compliant behaviour (avoidance) is clearly punished to reduce or eliminate the incidence of such responses. Behaviour that functions to approach alternatives is punished.
 - (iii) Whether compliant behaviour is negatively reinforced within the particular situation to dilute reinforcement contingent upon defecting to alternative situations.
- (c) The number of externals who appear to be arranging and controlling the contingencies of reinforcement and punishment (not just access to reinforcement).
- *Relatively closed settings are characterised by a single or few providers arranging the contingencies.*
- (d) The nature of the externally imposed contingencies and the cost to the individual of escaping from or avoiding the imposed contingencies.
- (e) The extent to which those in control of the contingencies are themselves subject to such contingencies.
- *Relatively closed settings are usually characterised by those in control not being subject to the contingencies.*

A4.2.2 Determinants of the Strength of Approach and Escape-Avoidance Functions

This section describes the determinants of the strength of the rates of approach and escape-avoidance as proposed in Alhadeff (1982), Foxall (1990, 1992a, 1996b, 1997b, 2010b) and Vella and Foxall (2011).

Determinants of the Strength of the Rate of Approach:

The strength of the rate of approach is a function of:

- (a) The effectiveness of the reinforcers to be acquired (which depends, in turn, on the consumer's state of deprivation and satiation expressed in relation to the rate of responses required to obtain reinforcement and time elapsed between reinforcement).
- (b) The quality and the quantity of reinforcement.
- (c) The quality and quantity of the components of the schedules of reinforcement on offer (expressed in terms of access to reinforcers, the number of responses to obtain reinforcement and the interval between reinforcing events).

Determinants of the Strength of the Rate of Escape-Avoidance:

The strength of the rate of escape is a function of:

- (a) The extent to which the loss of positive generalised reinforcer (money) to acquire the utilitarian and informational reinforcers in question (i.e., price) is aversive;

- (b) The utilitarian and informational consequences of purchase and consumption generated by the individual in the past;
- (c) The past consequences of surrendering positive generalised reinforcers; and,
- (d) The extent to which the loss of these alternative reinforcers is aversive, i.e., the consequences of forgoing alternatives expressed in terms of
 - (i) The extent to which the consumer has access to alternative reinforcers,
 - (ii) The delay between the purchase of the reinforcers in question and the aversive consequences of foregoing alternatives;
 - (iii) The quality and quantity of reinforcers presented by the product in question in contrast to foregone alternatives; and,
 - (iv) The quality and number of schedules of reinforcement on offer.

A4.3 The Measure Proposed for Determining the Qualification of the Setting Scope by Environmental Factors

The measure to interpret the evidence to determine setting scope stricture is derived from Foxall (1990, 1992a, 1997b, 2010b) and Vella and Foxall (2011) (see also Appendix A4.2.1). Environmental conditions, independently and in combination, operate on the marketer behaviour setting to qualify setting scope and compel certain marketing practices over others as follows:

1. Environmental conditions function to regulate access or routes to and availability of reinforcement and punishment. This is determined by establishing:
 - 1.1. The quantity and prominence of reinforcers and punishers available.
 - 1.2. The number of ways in which these reinforcers may be obtained/increased and punishers removed/weakened.
 - 1.3. The extent to which it is necessary to perform specific and prescribed tasks *and/or* the extent to which other specific tasks are proscribed to generate reinforcement. Three additional parameters help ascertain the relative setting stricture on this dimension:
 - 1.3.1. The extent to which the necessary tasks that are to be performed are clearly and precisely specified and defined. Usually, the necessary tasks are expressed through explicit rules and instructions imposed by others.
 - 1.3.2. Necessary tasks are typically reinforced.
 - 1.3.3. Different tasks are interchangeable for ones that are reinforced.
2. The degree of external control of the contingencies within a given situation is determined by:
 - 2.1. Whether externals (environmental agents) control access to reinforcers which involves:
 - 2.1.1. Establishing the nature, number, and quality of those who control access to reinforcers.

- 2.1.2. The degree to which externals control access to reinforcement by means of regulating states of deprivation and satiation (for example, by withholding or delaying reinforcement).
- 2.2. The extent to which there is ready access to being in alternative (and substitute) situations which is determined by:
 - 2.2.1. The number and quality of possible alternative situations.
 - 2.2.2. Whether non-compliant behaviour is clearly punished to reduce or eliminate the incidence of such responses. Behaviour that functions to approach alternatives is punished.
 - 2.2.3. Whether compliant behaviour is negatively reinforced within the particular situation to dilute reinforcement contingent upon defecting to alternative situations.
- 2.3. The number of externals who appear to be arranging and controlling the contingencies of reinforcement and punishment (not just access to reinforcement).
- 2.4. The nature of the externally imposed contingencies and the cost to the individual of escaping from or avoiding the imposed contingencies.
- 2.5. The extent to which those in control of the contingencies are themselves subject to such contingencies.

A4.4 The Measure Proposed for Determining the Regulation of Patterns of Reinforcement and Punishment by Environmental Factors

The measure to interpret the evidence to determine the regulation of patterns of reinforcement by environmental contingencies is derived from Alhadeff (1982), Foxall (1990, 1992a, 1992b, 1997b), and Vella and Foxall (2011) (see also Appendix A4.2.2). Environmental conditions, independently and in combination, operate on the marketer behaviour setting to regulate patterns of reinforcement and punishment as follows:

1. Environmental conditions function to regulate *the effectiveness of reinforcers and punishers*: **Environmental conditions function in a way that increases or decreases the effectiveness of reinforcers and/or punishers** where the effectiveness of such reinforcers or punishers is established by: (a) determining whether the stimuli are stated explicitly as rules (e.g., the provisions within a contract), (b) the level of deprivation and satiation (Foxall 1990, 1997b; Vella and Foxall 2011), (c) the business model of the firm, and, (d) learning history.
2. Environmental conditions function to regulate *the quantity and quality of reinforcers and punishers*.
 - 2.1. The *Quantity* of Reinforcers and Punishers

Environmental conditions function in a way that increases or decreases the quantity of reinforcers and/or punishers: Increasing or decreasing quantity refers to environmental events that function to increase

(addition) or decrease (removal) the number of reinforcers and punishers thereby strengthening the rate of emission of some marketing practices or weakening others.

2.1.1. Environmental conditions **quantitatively strengthen** certain marketing practices by “adding to or increasing the number of utilitarian and informational benefits and/or decreasing from or removing the number of utilitarian and informational aversive consequences” (Vella and Foxall 2011, pp. 61-62).

2.1.2. Environmental conditions **quantitatively weaken** certain marketing practices by “decreasing or removing the number of utilitarian and informational benefits and/or adding to or increasing the number of utilitarian and informational aversive consequences” (Vella and Foxall 2011, pp. 61-62).

2.2. The *Quality* of Reinforcers and Punishers

Environmental conditions function in a way that increases or decreases the quality of reinforcers and/or punishers: Increasing or decreasing quality refers to environmental events that function to augment, improve, or weaken the effect of present reinforcers and punishers thereby strengthening the rate of emission of some marketing practices or weakening others.

2.2.1. Environmental conditions **qualitatively strengthen** certain marketing practices by “increasing the [salience] of present utilitarian and informational benefits or decreasing or making less prominent the effect of present utilitarian and informational aversive consequences” (Vella and Foxall 2011, pp. 61-62).

2.2.2. Environmental conditions **qualitatively weaken** certain marketing practices by “increasing the [salience] of present utilitarian and informational aversive consequences or decreasing or making less prominent the effect of present utilitarian and informational benefits” (Vella and Foxall 2011, pp. 61-62).

3. Environmental conditions function in a manner analogous to schedules of reinforcement specifying the relative frequency with which behavioural emissions are followed by reinforcers or punishers (Foxall 1990, 2005; Cooper *et al.* 2007; Vella and Foxall 2011, p. 62) thereby strengthening or weakening certain practices⁴⁸³.

3.1. Environmental conditions **strengthen certain marketing practices in a manner that is analogous to improving ratio and interval schedules of reinforcement.**

3.1.1. Improving the Ratio Schedule by reducing the number of responses to be performed to generate reinforcement or by increasing the number of responses to be performed before punishment is generated.

3.1.2. Improving the Interval Schedule by decreasing reinforcement delay or by increasing punishment delay.

⁴⁸³ With respect to schedules of reinforcement, given the difficulties explained earlier in relation to identifying such schedules in the real world, a general definition is used to refer to *ratio schedules* as number of responses required to produce reinforcement and punishment and *interval schedules* as delays in reinforcement and punishment. These definitions are evaluated given empirical evidence. On Schedules of Reinforcement see Chapter 3, Section 3.2.6B.

3.2. Environmental conditions **weaken certain marketing practices in a manner that is analogous to worsening the ratio and interval schedules of reinforcement.**

3.2.1. Worsening the Ratio Schedule by increasing the number of responses to be performed to generate reinforcement or by reducing the number of responses to be performed before punishment is generated.

3.2.2. Worsening the Interval Schedule by increasing reinforcement delay or decreasing punishment delay.

Appendix 5

Part I: Presentation and Summary of the
Data: The Ice Cream Report 1979

A5. Introduction

The Appendix presents the evidence from the Ice Cream Report (1979).

The report also makes reference to an additional source, a number of paragraphs within the Frozen Foodstuffs Report (1976)⁴⁸⁴. The latter reports an investigation conducted by the Commission almost in parallel to the Ice Cream investigation. The Frozen Foodstuffs investigation also featured one of Unilever's subsidiaries, Birds Eye, in competition with JLC. The quality of the Frozen Foodstuffs report is similar to that of the Ice Cream Report. The sole relevance to the case study is Chapter 2 of the Monopolies and Mergers Commission (1976) which narrates the development and the organization of the frozen food industry in the UK until the 1970s. These references were also included for completeness and because inclusion provides deeper insight into the marketing practices of Wall's and the environmental changes occurring within the ice cream industry (considered a subset of the overarching frozen foods category in the UK). Section A5.3.1 also makes minor references to the history of Wall's within the Unilever website⁴⁸⁵.

The presentation of the evidence is organised around the case focus stated as follows: The case is a longitudinal study of the practices emitted by Wall's in its efforts to develop the market for the mass consumption of ice cream within the UK between 1922 and ca.1978. Conducted from the perspective of the continual interaction between Wall's and its selective environment, the case focuses on the practices of this large-scale manufacturer vis-à-vis the development and maintenance of nationwide retail network. The points of central interest are: (a) the emergence and the prolific use of exclusivity contracts to secure, maintain, and expand the retail network, and, (b) the practices supporting a nationwide network for mass consumption of ice cream. Behaviour-environment interactions are considered within and across two distinct generation-situations. The research interprets the evidence from an operant perspective to understand whether and how the various elements comprising the marketer behaviour setting faced by Wall's independently and jointly function to selectively retain and eliminate various practices (with special emphasis on exclusivity) via processes analogous to those described by operant conditioning procedures (reinforcement and punishment). The case focus was defined in Chapter 2 (Section 2.3.4).

The data is presented utilising a functional analysis of behaviour in conjunction with a topographical description as stated in Chapter 2 (Section 2.3.6).

The case is structured as follows: Section A5.1 provides a short background to the case introducing a key finding – although restrictive and a source of monopoly power, exclusivity was a feature that did not necessarily confer advantage to all who practiced it. In the case of Wall's exclusivity operated in conjunction with other features that were acquired and selectively retained over

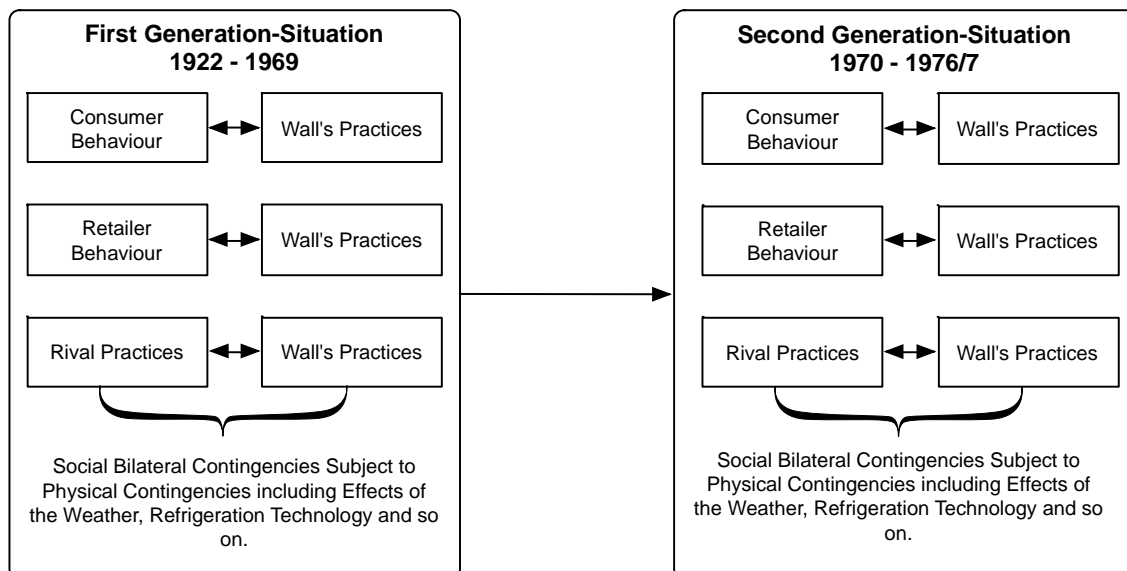
⁴⁸⁴ References to this second report were made in footnote 1 to paragraph §23 of the Ice Cream Report (1979, p. 10), in footnote 1 to paragraph §35 (p. 15), in footnote 1 to paragraph §151 (p. 56), in footnote 1 (p. 87), and, in footnote 3 to paragraph §383 (p. 137).

⁴⁸⁵ These additional sources are discussed at length in Chapter 6, Section 6.4.3.

the years. Section A5.2 establishes antecedent contingencies that were inherent to and recurring within the ice cream trade.

The unit of analysis is the generation-situation represented graphically in Figure 146.

Figure 146 – Distinct Generation-Situations for Analysis and Comparison



Analysis and Interpretation of Retail Marketing Practices across Space (Distinct Situations characterised by Social Bilateral Contingencies and Physical Contingencies) and Time (Learning History of Wall's and Environmental Change across Generations)

Section A5.3 presents the first generation-situation analysing the learning history of Wall's in relation to its main national competitor. Section A5.4 covers the second generation-situation focusing on Wall's practices during the 1970s.

A5.1 Background to the Investigation

The two major national manufacturers are referred to as Wall's (Unilever) and Glacier (JLC) respectively⁴⁸⁶. Their enduring business model may be briefly described as the manufacturing of a comprehensive range of branded ice cream products produced on a very large scale and heavily marketed to an extensive nationwide retail network and to a nationwide audience of final consumers for mass purchase and consumption⁴⁸⁷.

By 1976, the organizations held a joint share of about 60% of the total ice cream market (Table 4).

⁴⁸⁶ For the sake of avoiding confusion, little distinction will be made between the various firms within the JLC group unless it is absolutely necessary. The analysis follows the Commission in using Glacier as the focal point for the entire ice cream business of JLC. Unless specified all references to Lyons Maid relate to one of the two main brands of the JLC group.

⁴⁸⁷ See Section A5.2.6 to Section A5.2.8 for an explanation of the generic manufacturing and retailing business models found and Section A5.3 for a detailed explanation of the business model of Wall's.

Table 4 – Comparison of Sales and Market Share by National Manufacturers (1976)

	Net Sales Value (NSV) ⁽¹⁾	Sales Volumes (Liters)	Estimated Market Share (NSV)
Treats	£ 4,488,000	22,272,000	4%
Wall's	£48,100,000	115,900,000	Between 34 and 37%
Glacier	£37,900,000	84,600,000	Between 26 and 28%
Notes: (1) The Commission used Net Sales Value (NSV) as a guide to calculate market size and respective manufacturer shares. NSV is calculated by deducting discounts and bonus payments from the standard wholesale value of sales orders (see the Ice Cream Report (1979, p. 28, §70 fn.1)). NSV, thus, stands in contrast to sales valuations based on consumer (retail) prices.			
Source: Appendix A5.7.1			

Two characteristic features of the marketing *place* strategies deployed at retail of Wall's and Glacier were as follows:

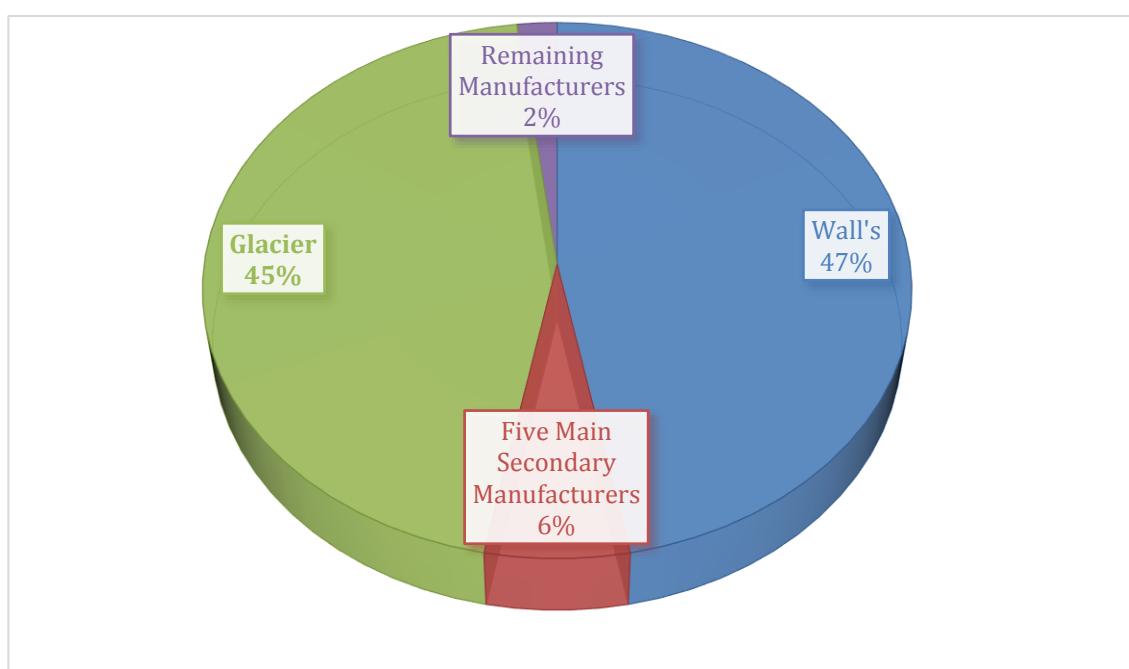
First, both held direct mutuality-plus-exchange relationships with most of their retail customers well into the 1970s. This relationship form dominated since the early history of the industry. However, both firms also maintained direct mutuality-plus-exchange relationships with consumers for a considerable length of time until slowly abandoning the practice to benefit from a focus on economies of scale in production and marketing. Interestingly, with respect to Wall's, for example, these relationships were not relinquished to the market but hived off in a separate legal entity⁴⁸⁸.

Second, until 1975 both Wall's and Glacier tied retailers with legally binding long-term standard contracts or non-standard agreements for the exclusive supply of ice cream. These arrangements (a) distinguished between those retailers who did not own their own refrigerated cabinets and those who did, with the former set of retailer arrangements implying a relatively higher degree of acquisition and retention; and, (b) discriminated between those retailers who had a relatively low volume of consumer traffic (kept on standard terms) and those who had relatively higher volumes (kept on negotiated terms). Retailers who did not supply their own freezers entered into arrangements characterised by *freezer* and *outlet exclusivity* while the retailers who supplied their own freezers generally agreed to an *outlet exclusivity* arrangement. In *outlet* or *premises exclusivity* retailers were required to buy their ice cream to be sold in the particular outlet exclusively from a manufacturer irrespective of whether freezer cabinets were owned by or supplied to the retailer. In *freezer exclusivity* retailers entered into an agreement to be provided with a freezer cabinet on condition that the cabinet was only used for carrying the brands of that particular manufacturer. These place practices were supported by additional mix configurations. Therefore, whereas freezer exclusivity functioned to address the segment of the retail trade market that was either unwilling or unable to invest in freezer cabinets, outlet exclusivity also addressed that segment with an already installed and retailer owned cabinet base. In addition, outlet exclusivity precluded any retailer from obtaining additional freezers to

⁴⁸⁸ For further details see Section A5.3.1 on the Wall's-Whippy merger.

store the brands of rivals. Exclusivity created a legally enforceable barrier protecting streams of revenues from rival encroachment rendering sales more predictable and facilitating production and distribution planning. As at 1st January 1975, however, Wall's abandoned the practice of outlet exclusivity while retaining freezer exclusivity. In contrast, Glacier remained reliant on outlet and freezer exclusivity⁴⁸⁹. One secondary manufacturer, Pendletons, imposed outlet exclusivity⁴⁹⁰ while twenty-four others secondary manufacturers provided freezer cabinets tied with exclusive supply. In total 126,000 freezer cabinets were installed by 1978 at retail with Wall's and Glacier jointly supplying almost 92% of the equipment (Figure 147)⁴⁹¹. Wall's and Glacier also had considerable shareholding interest in two separate wholesale distribution organisations to deliver ice cream to their respective retail customers and these were tied with exclusivity arrangements. In contrast to Glacier, Wall's did not bind independent wholesalers with such arrangements.

Figure 147 – Freezer Cabinets Owned by the National and Secondary Manufacturers (1976)



Source: Section A5.7.5

These two organisations grew the *scale* of their respective businesses following substantially different routes to achieve national coverage and the necessary economies in large-scale production, distribution, and retail penetration of their respective brands. Wall's expanded its business predominantly through organic growth strategies.

In contrast, the history of JLC demonstrates growth through a series of mergers and acquisitions geared towards expanding production and distribution capacity and/or strong brands to subsume within the Lyons Maid repertoire or to retain for a more comprehensive product range⁴⁹². This resulted in JLC having a

⁴⁸⁹ The details of the various contractual arrangements entered into by Wall's are found in Section A5.4.5.

⁴⁹⁰ Refer to the Ice Cream Report (1979, §234).

⁴⁹¹ Refer to the Ice Cream Report (1979, §235, Appendix 9).

⁴⁹² In September 1978, JLC became a subsidiary of Allied Breweries Limited.

significantly more complex web of subsidiaries involved in ice cream manufacture and marketing (Figure 148)⁴⁹³.

Unilever and JLC also competed in the frozen foodstuffs industry wherein certain developments during the 1960s facilitated the emergence and growth of a new retail segment, the grocery trade, and a novel source of revenue for the national and secondary manufacturers.

The Commission identified the feature of exclusivity as practiced by Wall's, Glacier, and a number of secondary manufacturers to have created a *monopoly situation* within the industry and to have been running against *public interest*. Broadly, the Fair Trading Act stipulated that a monopoly situation existed if a single legal entity or group of entities held a market share exceeding 25%⁴⁹⁴. Although the Commission was correct in its conclusion that the practices were restrictive, there were several key threats, obstacles, and opportunities within the environment faced by the national manufacturers during the history of the industry that may have *naturally* brought about the feature of exclusive supply. In addition, practicing exclusivity in isolation did not appear to confer long-term advantage to all who engaged in the practice.

As shall be seen, the practices of Glacier were more restrictive than those of Wall's⁴⁹⁵. However, the former did not command a stronger market share or display stronger performance in terms of financial prowess and profitability⁴⁹⁶. Other factors were involved. For example, the history of Wall's demonstrates an organisation that acquired a particular **sensitivity to changing external environmental conditions** and the commercial opportunities and threats therein. This unique characteristic emerged from gathering market intelligence via increasingly sophisticated research techniques and sources and translating the feedback into new or improved products, production technologies and methods, and, approaches to emerging and existing retail segments. In contrast, Glacier was more sensitive to approaching equivalent standing of Wall's in terms of size and extent of operation and market reach.

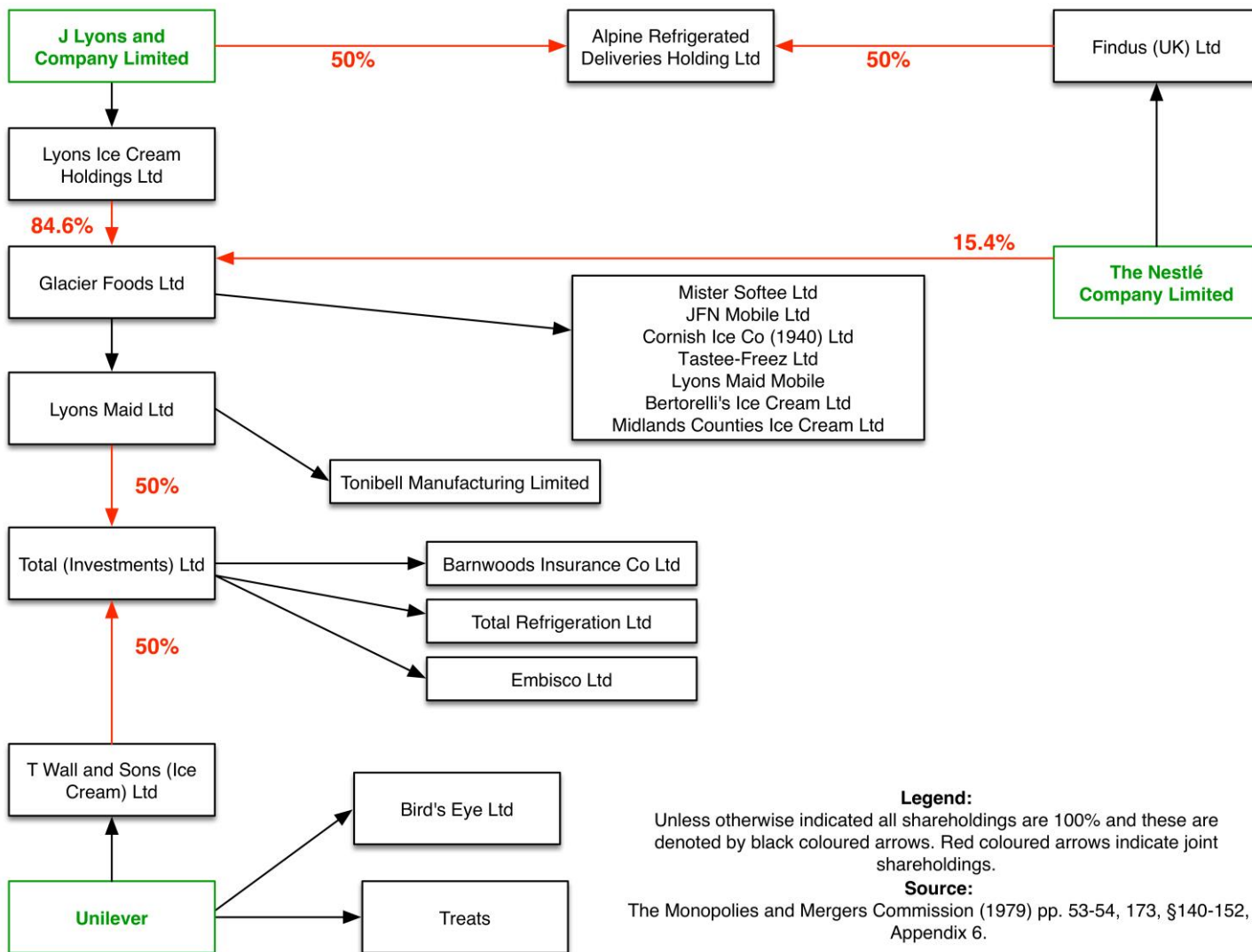
⁴⁹³ For example, Glacier Foods was charged with the responsibility for the ice cream manufacturing and marketing business of JLC. Lyons Maid Ltd was a wholly owned subsidiary of Glacier Foods and was the main trading company of JLC with respect to ice cream. In addition, both Glacier and Lyons Maid owned several other subsidiaries trading in ice cream on behalf of Lyons Maid Ltd rather than independently. In contrast, Treats traded independently of Wall's although both were subsidiaries of Unilever. Lyons Maid Limited also held a joint shareholding (50/50) with Wall's in Total (Investments) Ltd., a company incorporated in 1964 to install and service the freezer cabinets that its owners provided to their respective retail customers (see Section A5.3.5). In contrast, Treats traded independently of Wall's although both were subsidiaries of Unilever. For more details on the acquisitions by JLC and its history see Section A5.11.

⁴⁹⁴ The term public interest is not defined at law. However, the Fair Trading Act provides guidelines to be taken in account by the Commission in this respect: for example, whether certain practices promote or deter consumer choice. See also Section A5.6.2 for further details and the Ice Cream Report (1979, §233-242, Chapter 10).

⁴⁹⁵ Refer to Chapter 10 of the Ice Cream Report (1979, especially §429).

⁴⁹⁶ Contrast Wall's financial position as described in Appendices 10 to 12 to that of Glacier as described in Appendices 15 to 16 of the Ice Cream Report (1979). See also Section A5.4.2.

Figure 148 – Shareholding Structure of Lyons Group Ice Cream Companies



A5.2 Recurring Contingencies (and Rules) Inherent to the Ice Cream Trade

A5.2.1 Signalling and Consequential Operations

Mass consumption of ice cream via large-scale production, distribution, retailing, and consumer marketing emerged as a set of practices in the early 1920s⁴⁹⁷. A combination of several features of the ice cream trade seem to have been present throughout the entire 50-year history of the industry thereby acquiring regulatory dimension.

As *stimulus events with regulatory function*, these environmental features may be summarised as follows:

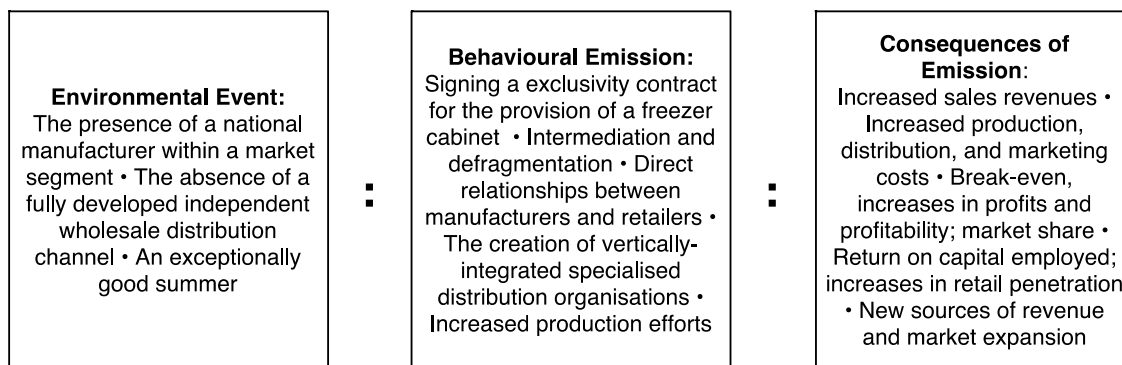
1. Seasonality of the business, the unpredictability of British weather and associated within-season fluctuations, and the significant positive and negative effects of these unpredictable fluctuations on manufacturing, distribution and retailing;
2. The nature of ice cream, the physical requirement to maintain the product at a constant and low temperature, its relative low value, and the significantly aversive consequence of investing and maintaining an expensive cold value chain infrastructure;
3. The availability, precision and comprehensiveness of feedback available for extraction as *market intelligence* on the prevailing market contingencies and on the appropriateness and accuracy of the performance of strategies adopted by rivals and the firm operating under those contingencies; and,
4. The composition of the market structure and the organisation of practices, namely, manufacturing and retailing, within specialised firms.

As the market grew and as mass consumption itself gradually became a characteristic of the market, complexity intensified and the features became relatively more salient over time.

The historically recurring features are interpreted in terms of *physical and/or socio-economic contingencies* (Figure 149) specifying the relationship between some environmental event (e.g., the presence of a national manufacturer within a market segment; the absence of a fully developed independent wholesale distribution channel; an exceptionally good summer), emitted behaviour (e.g., signing a exclusivity contract for the provision of a freezer cabinet; the process of intermediation and retail channel defragmentation; manufacturers transacting directly with retailers; the creation of vertically-integrated specialised distribution organisations; increased production efforts), and the consequences of such emissions (e.g., increased sales revenues and increased production, distribution, and marketing costs; breakeven, increases in profits and profitability; market share; return on capital employed; increases in retail penetration; new sources of revenue and market expansion).

⁴⁹⁷ See Section A5.3.

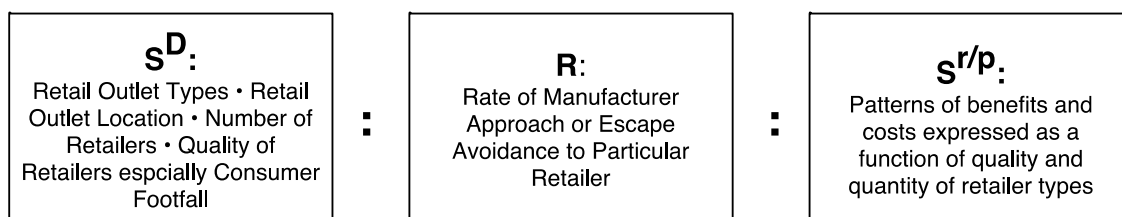
Figure 149 – Physical and Socio-Economic Contingencies



The features acquired *discriminative or motivational function* depending upon the learning history of the individual firm emitting behaviour, its business model, its current state of deprivation and managerial deliberation. In addition, the features operated independently, simultaneously, and, more often than not in combination further emphasising complexity. As antecedent discriminative stimulus to all industry incumbents, seasonality operated on the range of behaviours available to them during the winter months. The evidence shows increased production and marketing activity in summer and decreased activity in winter as the majority of consumers escaped-avoided ice cream due to the cold. In combination with the short shelf life of ice cream and unpredictable within-season fluctuations, seasonality operated to further constrain the setting scope faced by manufacturers to impede building sufficient inventory during the winter months⁴⁹⁸.

The presence of retailing signalled to manufacturers the availability of various routes to accessing situations wherein consumers purchase and eat ice creams (on impulse, to take home, or at a catering establishment), and, the patterns of reinforcing and punishing consequences contingent upon engaging with the available variety and quality of such retailers. Such stimulus events occasioned varying rates and strengths of manufacturer approach and escape avoidance towards retailers (Figure 150). The evidence, for example, narrates the historical prominence and importance of the segment comprising Confectioners, Tobacconists and Newsagents (CTNs) and Small General Stores (SGSs), and, as this sector declined, the moves by national manufacturers towards the grocery segment comprising supermarkets and home freezer centres. However, since the firms within latter sector operated with a different business model than the former, Wall's and Glacier encountered tough and unprecedented competitive encroachment from secondary manufacturers.

Figure 150 – The Three-Term Contingency Expressing the Presence of Retailers to Manufacturers



⁴⁹⁸ Refer to the Ice Cream Report (1979, §26).

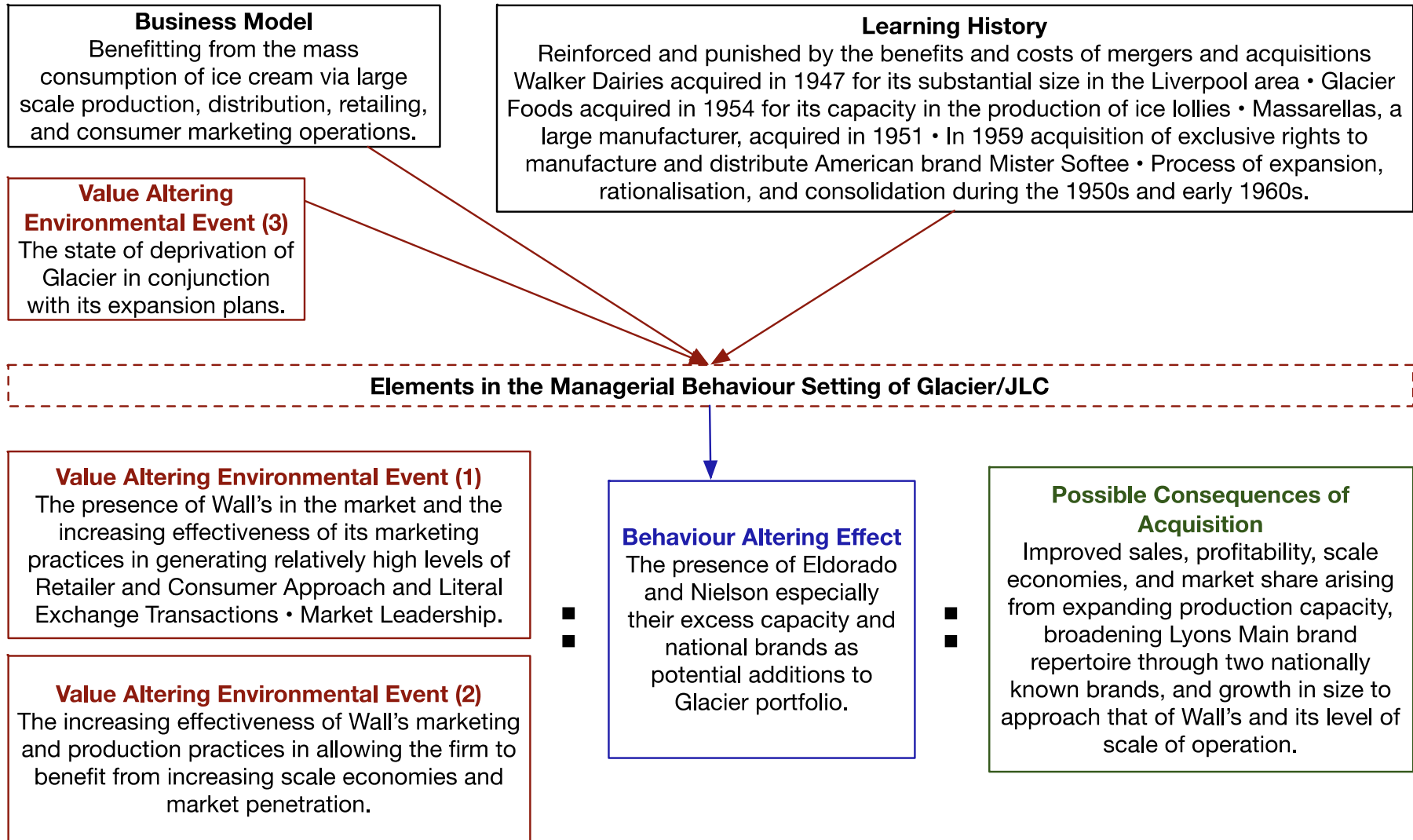
To manufacturers the presence of a particular outlet type within a particular geographical area signalled the setting scope (range of possible behaviours) and the consequences of operating in terms of the more likely outcomes contingent upon engaging in trade with such retailer. Kiosks were “prominent” seasonal outlets whose importance was especially salient during warm weather. The presence of an open kiosk at a high traffic site signalled the potential significant volumes of ice cream sold. During summer, therefore, such kiosks functioned as *reinforcers* – both Wall’s and Glacier were actively canvassing these and all other retail outlet types for business. To secondary manufacturers, retailers tied in exclusively to either Glacier or Wall’s signalled an aversive event with regulatory dimension: the setting scope, and hence one route to consumers, was effectively closed off for the duration of the legally binding exclusivity contract. To retailers, Wall’s may have signalled the probability of higher earnings – this is because Wall’s offered brands with relatively better quality, it advertised and promoted its products heavily among consumers and retailers, it discriminated among retailers on the basis of outlet type and the consumer traffic volumes each retailer type generated, and also offered the optional provision of a freezer cabinet at a £1 nominal rental fee⁴⁹⁹.

The presence of manufacturing to retailers signalled the availability of patterns of reinforcement and punishment contingent upon trading in ice cream. To consumers, manufacturer brands signalled the availability of patterns of reinforcement contingent upon purchase and consumption emissions. As stimulus events, manufacturer brands occasioned various levels of retailer/consumer approach and escape avoidance and termination of some of these behaviours in literal exchange.

Some stimulus events achieved *motivational function* (Figure 151).

⁴⁹⁹ Refer to the Ice Cream Report (1979, §89, §98).

Figure 151 – Motivating Operations in the History of Glacier Foods



For example, despite its history of growth by following a strategy of acquisition and mergers, JLC did not have a national brand of equivalent standing relative to Wall's until the 1960s. Until then, therefore, given its business model oriented towards benefiting from the mass consumption of ice cream via large-scale production, distribution, retailing and consumer marketing operations, Glacier may have experienced a recurring state of deprivation: environmental conditions were such that in relation to Wall's the full benefits of large-scale operations were not forthcoming. Between 1962 and 1963, JLC merged with Nielson (Ice Cream & Frozen Foods) Ltd and Eldorado Ice Cream Company respectively. Neilsons was established in the early 1950s and had grown to be a substantial manufacturer by the early 1960s. Eldorado, on the other hand, was established before WWII and, like Wall's, had grown to become one of the main competitors of JLC in the ice cream trade. Eldorado had also grown substantially in its production capacity. Both Nielson and Eldorado appeared to have anticipated further potential in the ice cream market extending the growth experienced during the 1950s. However, the downturn in demand in the early 1960s, due to successive bad seasons and the imposition of a purchase tax by government on ice cream⁵⁰⁰, resulted in both firms being faced with surplus capacity⁵⁰¹.

Under normal circumstances and by virtue of the learning history of JLC and its plans for further expansion and rationalisation (as precurrent regulatory (informational) stimuli signalling the possible positive benefits of growth and said rationalisation), the stimulus events in the behaviour setting (the presence of excess capacity, additional national level brands to add to an existing repertoire) would have signalled the availability of the potential benefits of acquiring the additional capacity and subsuming the brands of Eldorado and Nielson under the Lyons Maid umbrella.

However, the state of deprivation of Glacier in conjunction with the potential aversive consequences to the business signalled by the relatively unmatched and increasingly unassailable dominance of Wall's in the market functioned as *establishing operations*. Such potential aversive consequences included reduced utilitarian reinforcers (declines in sales and profits) and reduced informational reinforcers (decline in profitability, return on capital employed,

⁵⁰⁰ Refer to the Ice Cream Report (1979, §32, §146, §350-351). See also Section A5.3.

⁵⁰¹ See Section A5.11 for further details on the history of JLC.

market shares, scale economies (i.e., efficiency) and other related performance metrics in the various aspects of its operation⁵⁰²).

The *value-altering effects* originated from: (1) the increasing effectiveness of Wall's marketing practices in engendering approach and exchange at retail, and, (2) the increasing effectiveness of Wall's marketing and production practices in benefiting from scale economies and market penetration. These improvements in Wall's performance signified a more successful rival in the environment and, thus, the presence of Wall's operated on the environment of JLC as a more salient informational punisher. (3) The state of deprivation of Glacier in conjunction with its expansion plans. The organisation claimed that "a national ice cream brand to compete on nearly equal terms with the dominant Wall's brand was only likely to be established if the separate business of the three next most significant manufacturers [i.e., JLC, Neilsons, and Eldorado] were merged into a single operation more nearly equal in size to that of Wall's" (Monopolies and Mergers Commission 1979, p. 55, §146). The *behaviour-altering effect* refers to an increase in the number of acquisitions performed by JLC and intensification of its efforts to rationalise and consolidate its operations (Figure 151).

The recurring features within the environment also acquired *regulatory dimension specifying rules of conduct*: close to the beginning of the season, Wall's contacted all members of its channel to gather retailer and wholesaler expectations of average order sizes and make estimations according to the capacity of its installed freezer cabinet base⁵⁰³. Wall's could thus estimate and plan production and distribution. Hot summers occasioned higher levels of activity among all involved in the ice cream trade. Production levels increased, distribution to retailers became more frequent especially to those running seasonal outlets (e.g., kiosks and stalls on beaches, promenades, and holiday sites⁵⁰⁴), and all manufacturers registered higher than average sales. Weather

⁵⁰² The key performance ratios used by manufacturers were interpreted as informational stimuli. *Return on Capital Employed* is interpreted as an informational stimulus because in paragraph §155 the Commission states that the "key ratios" by which Glacier measured efficiency were "the ratio of trading profit to turnover, sales turnover to capital employed and to stocks and other indicators include[ing] market share and the volume of ice cream sold" (Monopolies and Mergers Commission 1979, p. 57). Other key ratios interpreted as informational stimuli include: *Trading profit to turnover* is a *profitability ratio* that measures the degree to which a company converts its sales revenues into net profit before interest and tax. Put simply, the ratio shows the amount of profit left after all the costs that are incurred in the business are paid. The ratio is calculated: Net Profit before Interest and Tax ÷ Net Sales. *Sales turnover to capital employed* is profitability ratio indicating the ability with which the organization can generate sales with its existing capital base. The ratio is calculated: Net Sales ÷ Employed Capital (Total Assets Less Current Liabilities). *Return on capital employed* is another profitability ratio indicating the efficiency with which the organization can generate profit before interest and tax with its existing capital base. The ratio is calculated: Net Profit before Interest and Tax ÷ Employed Capital. The Commission used this last metric - see Section A5.7.1 for a range of comparative tables. Wall's used similar metrics - See Chapter 6 of the Ice Cream Report (1979). In the present case, a reduction in the quality and quantity of a stimulus event is considered, by definition, as negative.

⁵⁰³ Refer to the Ice Cream Report (1979, §87).

⁵⁰⁴ Refer to the Ice Cream Report (1979, §17).

was also one of the market rules governing the behaviour of manufacturers and retailers⁵⁰⁵.

Another rule related to the appropriate emission given the type of customers: to a national manufacturer, the presence of a small CTN (without a freezer cabinet) rather than a very large supermarket chain (with freezer cabinets) occasioned the immediate presentation of a standard agreement rather than entering a period of negotiations to arrive at a non-standard arrangement⁵⁰⁶. In addition, such a situation signalled the higher per unit costs (relatively higher patterns of utilitarian and informational punishers) in combination with the lower earnings potential (relatively lower patterns of utilitarian and informational reinforcers) of supplying a CTN rather than the lower per unit costs (relatively lower patterns of utilitarian and informational punishers) in combination with the higher earnings potential (relatively higher patterns of utilitarian and informational reinforcers) of supplying the chain.

The contracts themselves are examples of regulatory contingencies: for example, in freezer exclusivity contracts, Wall's undertook to provide a freezer cabinet to retailers at a nominal rental value, to maintain and repair the cabinets, and to insure the freezer against fire. Wall's also agreed to provide adequate inventories of ice cream and maintain freezer cabinets stocked regularly. On the other hand, retailers relinquished their right to stock rival brands within the cabinet. Retailers were also urged (but not obliged) to insure and Wall's typically suggested the use of a company called Barnwoods Insurance Company Ltd. Barnwoods was a subsidiary of a firm jointly owned by Wall's and Glacier (Total Investments Limited⁵⁰⁷) and set up for the sole purpose of providing insurance cover to their customers against any losses arising from the loss or spoilage of ice cream inventories following a break down on freezer cabinets the national manufacturers provided. Moreover, retailers agreed to sell a minimum of £300 of ice cream at wholesale value per annum. Breaching this latter condition occasioned termination of the agreement upon one month's notice⁵⁰⁸. Retailers with freezer exclusivity contracts purchased ice cream at standard wholesale prices and generally followed a recommended retail price list⁵⁰⁹. At year-end, wholesalers and freezer centres earned retrospective bonuses and discounts on the actual volumes sold, CTNs, seasonal outlets and similar outlets received bonuses but no discounts, and supermarkets, entertainment outlets received discounts but no bonuses⁵¹⁰. Retailers with exclusive custom from Wall's received priority during times of relative stock shortages⁵¹¹.

⁵⁰⁵ The ice cream trade was seasonal with the high season starting in April and closing in October. The weather and climatic conditions in the UK were such that purchase and consumption patterns varied within any given season according to summer temperatures. Section A5.2.4 explains these points in further detail.

⁵⁰⁶ The Ice Cream Report (1979) details the agreements entered into by Wall's and Glacier with the various types of retailers and wholesalers in paragraphs §89-99 and §182-189 respectively and include the differences in treatment by the national manufacturers of small scale retailers and large organizations. In this sense, both Wall's and Glacier discriminated according to varying levels of retailer approach. Section A5.4.5 examines these relations in greater detail.

⁵⁰⁷ See Section A5.3.5.

⁵⁰⁸ Refer to the Ice Cream Report (1979, in particular §89, §215, §226, and §183). Glacier made similar recommendations for insurance coverage.

⁵⁰⁹ Refer to the Ice Cream Report (1979, §103).

⁵¹⁰ Refer to the Ice Cream Report (1979, §113).

⁵¹¹ Refer to the Ice Cream Report (1979, §87).

A. Patterns of Reinforcement and Punishment

Section A5.10.1 presents an extensive range of evidence from the Ice Cream Report that has been interpreted as demonstrating the main and more common reinforcers and punishers involved in shaping and maintaining national manufacturer practices. These elements have been interpreted as reinforcers and punishers because they were found to have recurred over the 50 plus years of the history of the national manufacturers as covered by the report⁵¹².

In summary, *positive utilitarian reinforcers* refer to the introduction, presence or increases in sales and profits; *positive utilitarian punishers* refer to the introduction, presence or increases in manufacturing, distribution, marketing costs, and capital expenditure; *positive informational reinforcers* refer to the introduction, presence or increases in positive utilitarian reinforcers, profitability, market share, economies of scale, and such related metrics as return on capital employed⁵¹³; and, *positive informational punishers* refer to the introduction, presence or increases in utilitarian punishers. So, for example, given the history of Wall's in engaging in processes of continuous rationalisation of its distribution system to access, construct, and improve its nationwide coverage of retailers, its market expansion behaviour was shaped and maintained on positive utilitarian and informational reinforcement (increasing sales and profits and related performance metrics) while its rationalisation processes were shaped and maintained by negative informational reinforcement (decreasing the incidence of cost on profits)⁵¹⁴.

A5.2.2 Recurring Informational Contingencies: Imperfect Market Information and Feedback

On several occasions, the Commission noted a signal difficulty it encountered – it was unable to quantify the total value and volume of ice cream supplied within the UK with sufficient precision in order to produce valid and reliable calculations of individual market shares of the manufacturers⁵¹⁵. The information was required to establish whether the market share held by individual entities or group of entities belonging to a particular segment of the market, exceeded the 25% threshold stipulated by law. Based on this information, the Commission would (a) determine the presence or absence of a monopoly situation, in favour of which manufacturer this situation was operating, how it operated, and whether the practices distorting, restricting, preventing competition functioned against the public interest; and, (b) draw valid and reliable conclusions and provide the Director General of Fair Trading with the proper recommendations. As a result the Commission sought a variety of sources in a bid to triangulate on a valid and reliable estimate to complete the

⁵¹² See in particular Chapters 1, 2, 3, 6, 8 and 9 of the Ice Cream Report (1979) and the remaining sections of the presentation of the case.

⁵¹³ **Return on capital employed** is profitability ratio indicating the efficiency with which the organization can generate profit before interest and tax with its existing capital base. The ratio is calculated: Net Profit before Interest and Tax ÷ Employed Capital.

⁵¹⁴ See also Sections A5.3 and A5.4.

⁵¹⁵ With respect to the problems faced by the Commission on the information problem, refer to the Ice Cream Report (1979) Chapter 1 (particularly paragraphs 10, 15, 19-21, 47-50), Chapter 10, and Appendix 4.

task⁵¹⁶. Section A5.6.4 presents the issues encountered by the Commission in developing estimates to quantify the market and extract market share estimates of the manufacturers⁵¹⁷.

Imperfect market information, in the guise of a general absence or limited availability of precise, reliable, and consistent information on environmental conditions, also constrained the behaviour of the national manufacturers. These organizations required valid and reliable market information as vital feedback on: (a) the accuracy and appropriateness of their behaviour in the conduct of their business given imperfectly known and unknown conditions; (b) the behaviour of other firms (including channel members and rivals); (c) the behaviour of consumers; (d) trends (and shifts) in behaviour patterns of industry participants, of consumers, and of incumbents in related industries (particularly the broader frozen foods sector); (e) refrigeration technology and related technical expertise; (f) the possible effects of seasonality and the unpredictability of weather on raw material purchasing, production, distribution, and marketing planning and management; and, (g) the existing and potential opportunities and threats presented in emerging and existing market segments.

The informational problem faced by the market participants and the Commission appear to have arisen from three issues pertaining to the manner in which environmental contingencies were arranged.

The first issue related to *uncertainty* associated with (a) the unpredictability of consumer demand due to the vagaries of British weather and the effects this unpredictability had on retailer demand and on raw material purchasing, inventories, production and distribution; and, (b) a relatively variable demand within consumer situations arising from such factors as perfect and imperfect substitutes⁵¹⁸.

Second, issues relating to differing degrees of engagement in market research and intelligence gathering by the various manufacturers, to different and often conflicting sources of information, to varying approaches in forecasting and to incongruent methods of performance measurement. Section A5.6.4 explains the issues related to this second obstacle in greater detail. Suffice it to say that these issues resulted in a lack of precise, reliable, and consistent information reflecting the veritable state of affairs that hindered the efforts of the

⁵¹⁶ The Commission remarked that since comprehensive quantification was not possible and estimation was inevitable (see §47 of the Ice Cream Report (1979)).

⁵¹⁷ There is no evidence to suggest that national manufacturers withheld data although several of the secondary manufacturers contacted by the Commission provided only partial data and some market estimates that Glacier seems to have had access to do not appear in the report. On the contrary, it is clear that the national manufacturers cooperated fully in the investigation.

⁵¹⁸ See also Section A5.2.4 for the problems related to seasonality and the weather and Section A5.3.3 on the variability of demand.

Commission in conducting its investigation and those of the manufacturers in resolving the problems posed by the environment more effectively⁵¹⁹.

Both Wall's and Glacier devoted "considerable attention to research into market trends" (Monopolies and Mergers Commission 1979, p. 168), behaviour that functioned to reduce the aversive consequences of the informational problem. For example, the relevant evidence presented to the Commission by these organizations was derived from internal records, from independent market research, from published sources, and from other type of trade intelligence available to them⁵²⁰. To the extent that these two organizations had entered into an exchange of information agreement lasting for about ten years from 1965⁵²¹ wherein sales figures were shared. During the early 1960s conditions became such that Wall's intensified its market research behaviour by using more sophisticated techniques to identify opportunities for developing new products⁵²². In addition, both organizations employed weather correction statistical models that sought to correct for the effects of weather variations on sales as distinct from other factors⁵²³.

⁵¹⁹ The Commission, for example, noted the threats to the validity and reliability of some of the quantitative data available. Although the national manufacturers provided the Commission with the relevant performance data, the information provided by Wall's was the most detailed relative to all the other manufacturers and a large number of small-scale manufacturers did not comply with such requests (it was also impossible to establish a comprehensive list of all manufacturers). According to the Commission this was one of the more significant obstacles it faced in generating precise figures for total volumes and values of ice cream produced and sold (Refer to the Ice Cream Report (1979) paragraph 47 and Appendix 4). Consequently, the large-scale manufacturers could not establish aggregate market size and trends with precision. For example, whereas Wall's valued the market at £253m, Glacier estimated the market size at consumer prices to hover around £219m. The estimates provided by the manufacturers did not tally because of differences in the sources and methods used by them in generating data, i.e., differences in how information about the prevailing contingencies was extracted and interpreted (Refer to Appendix 4 paragraph 12 of the Ice Cream Report (1979) which explains the different methods used by Glacier and Wall's in deriving their estimates for market size.). The estimates provided by Wall's, for example, were always higher than those provided by Glacier (Refer to the Ice Cream Report (1979) paragraph 47 and Appendix 4). In addition, information sourced by the Commission from such third parties as the Business Statistics Office (BSO) differed from the estimates provided by the manufacturers because of differences in methods of calculation and, normally, such inquiries focused on manufacturers of a certain size (e.g., firms employing 25 persons or more). The BSO is now defunct and its operations were part of what is now the Office of National Statistics (<http://www.ons.gov.uk/>). The dataset containing the information used by the Commission was published by the BSO in a report called the Business Monitor (PQ215). The report provided data relevant to the manufacture of all Milk and Milk Products in the UK (Refer to the Ice Cream Report (1979) paragraph 47 and Appendix 4). Wall's believed that both the BSO and Glacier underestimated market size, growth and the contributions of small scale manufacturers to the ice cream market (Refer to paragraphs 10 and 12 of Appendix 4 to the Ice Cream Report (1979)).

⁵²⁰ Refer to the Ice Cream Report (1979, Appendix 4 §11).

⁵²¹ The details governing this information exchange arrangement are explained in paragraph 62 and 157 of the Ice Cream Report (1979).

⁵²² See especially Section A5.3.3. The utilitarian and informational dimensions of ice cream purchase and consumption are *inferred* as reinforcing and punishing on the basis of the presence and relative growth in consumer demand between 1922 and 1977.

⁵²³ Weather correction was a "carefully devised" statistical technique used by both Wall's and Glacier to distinguish the effects of weather on sales from other factors effecting revenues (Monopolies and Mergers Commission 1979, p. 11, §25). The technique, therefore, normalizes the distribution of sales for the extreme variations of weather (Monopolies and Mergers Commission 1979, p. 25, §61 fn. 1). Both organizations seem to have started using weather correction sometime in the 1950s. Refer also to the Ice Cream Report (1979, §24, §155 fn.2) and Sections A5.3 and A5.4.

The extent of availability, precision and comprehensiveness of feedback available for extraction as *market intelligence* on the prevailing market contingencies and on the appropriateness and accuracy of the performance of strategies adopted by rivals and the firm operating under those contingencies was interpreted as a relatively aversive and recurring informational stimulus event within the behaviour setting faced by both Wall's and Glacier⁵²⁴.

A third significant obstacle related to the characteristic features of the market, which, in turn, appear to have occasioned different and non-standard categorisation (namely, classification of the various product categories, of the situations in which ice cream was purchased and consumed, and of the various retail segments) and market segmentation by the different manufacturers. This made estimates and comparisons difficult especially when combined with the problems related to seasonality and the weather⁵²⁵. Thus, the Commission seems to have been compelled to treat the ice cream market as if it were a single and relatively homogenous market rather than as being composed of relatively heterogeneous segments with important and fundamental differences as well as sharing common traits (see Section A5.2.3).

A5.2.3 Characteristic Features of the Market: On Consumers and Retailers

Consumer approach to ice cream and subsequent purchase of the product and particular brands functioned to satisfy recurring basic reinforcement criteria among consumers: the consumption of a *pleasure* product typically associated with summer and higher temperatures (utilitarian reinforcement) with a relative degree of *variety* in product composition (e.g., different flavours and toppings; utilitarian reinforcement) *available* at some location of convenience (e.g., the neighbourhood store, a mobile van, a restaurant or a kiosk at a beach in summer; informational reinforcement)⁵²⁶ and priced at a level that provides relatively good *value for money* in contrast to rival brands and non-ice cream substitutes (*informational reinforcement*)⁵²⁷.

At the time of the inception of the market for mass produced ice cream in the early 1920s, the behaviour of both Wall's and JLC had already acquired a responsiveness to the patterns of reinforcement contingent upon the purchase and consumption patterns of their respective brands. In addition their business model was already oriented around creating and maintaining a market for the mass consumption of ice cream⁵²⁸.

Since the 1920s, ice cream purchase and consumption patterns occasioned two topographies of marketing practices among the national manufacturers (Figure 152): (a) Developing products and brands that signalled appropriate patterns of reinforcement contingent upon the purchase and consumption of ice

⁵²⁴ It also appears that all prevailing contingencies had an associated informational component.

⁵²⁵ See Section A5.2.4.

⁵²⁶ Refer to the Ice Cream Report (1979, Chapter 1).

⁵²⁷ Refer to the Ice Cream Report (1979, §349). See also Sections A5.3.3 and especially in Section A5.4.4.

⁵²⁸ See Section A5.3 and Section A5.11 with respect to the respective origins of Wall's and JLC.

cream within situations wherein consumers could typically buy and eat ice cream. (b) Identifying and attracting retailers who had the capacity to capture some volume of consumer traffic and whose characteristic elements (e.g., a kiosk with a beach concession) channelled traffic to occasion a consumer situation with the capacity for generating some volume of approach to ice cream and for evoking some likelihood of literal exchange terminal behaviours with respect to the manufacturer's brands stocked in the outlet.

Figure 152 – Recurring Responses to Elements in the Behaviour Setting (Signalling Operations)

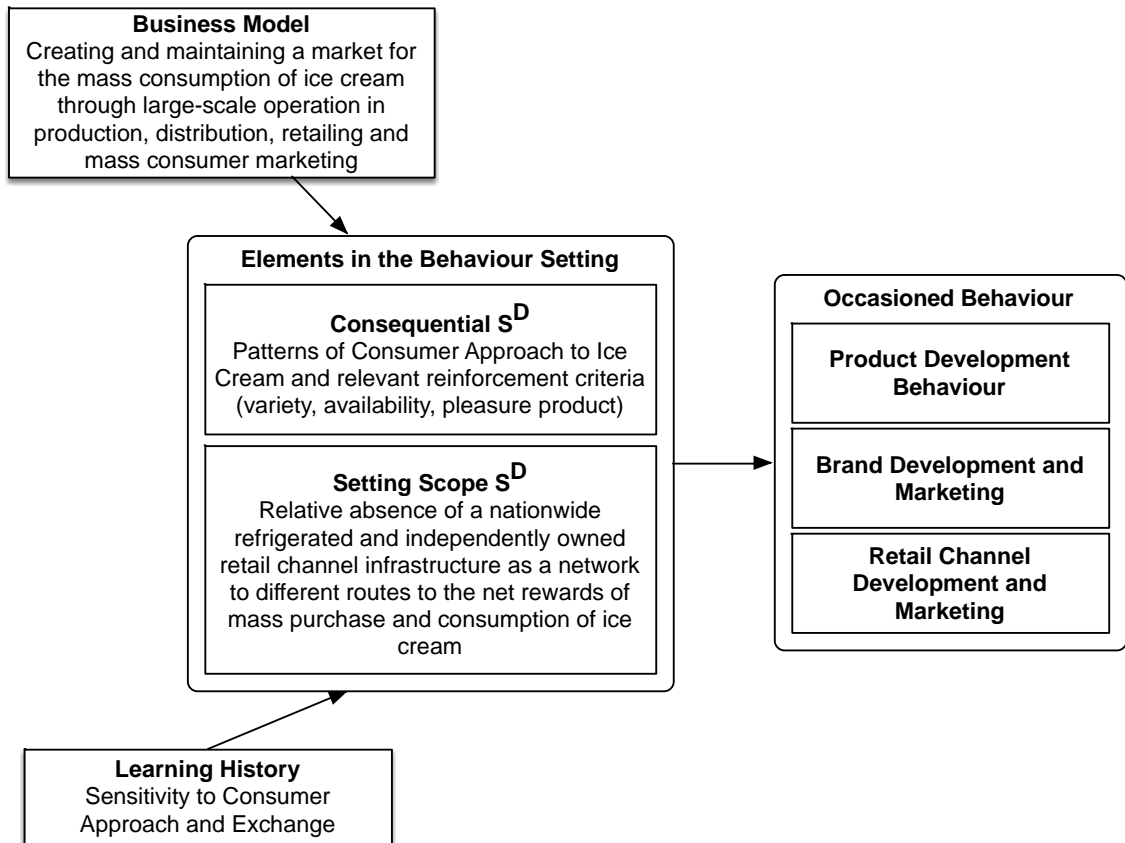
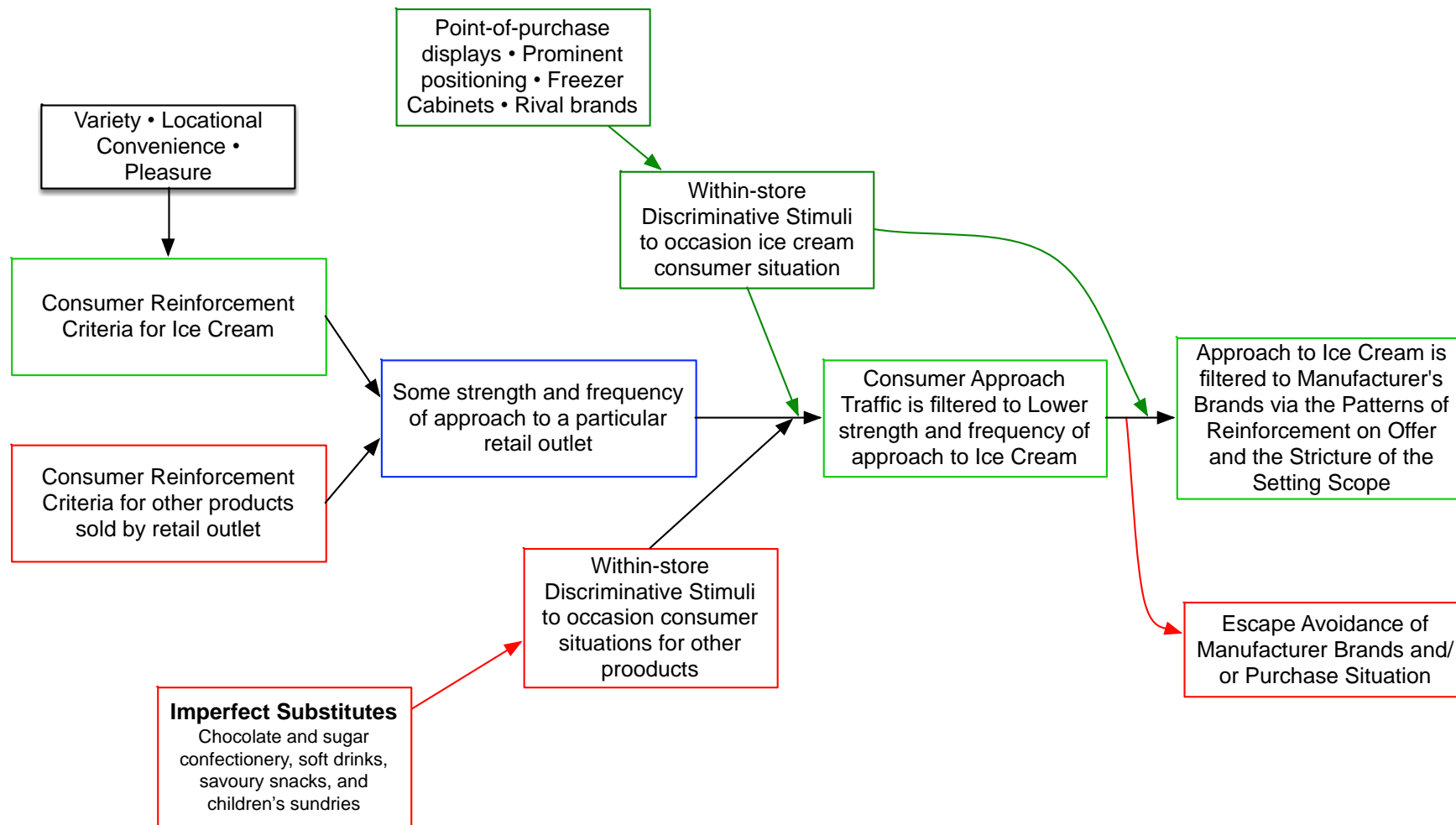


Figure 153 presents an inferred characterisation to emphasise the difference between the original volume of consumer traffic that would have approached the outlet, the filtering of such traffic among the competing patterns of reinforcement on offer via perfect and imperfect substitutes and unrelated products, and, the reduced volume of behaviour that terminates in exchange of a particular manufacturer's brands.

Figure 153 – An Inferred Representation of In-Store Traffic

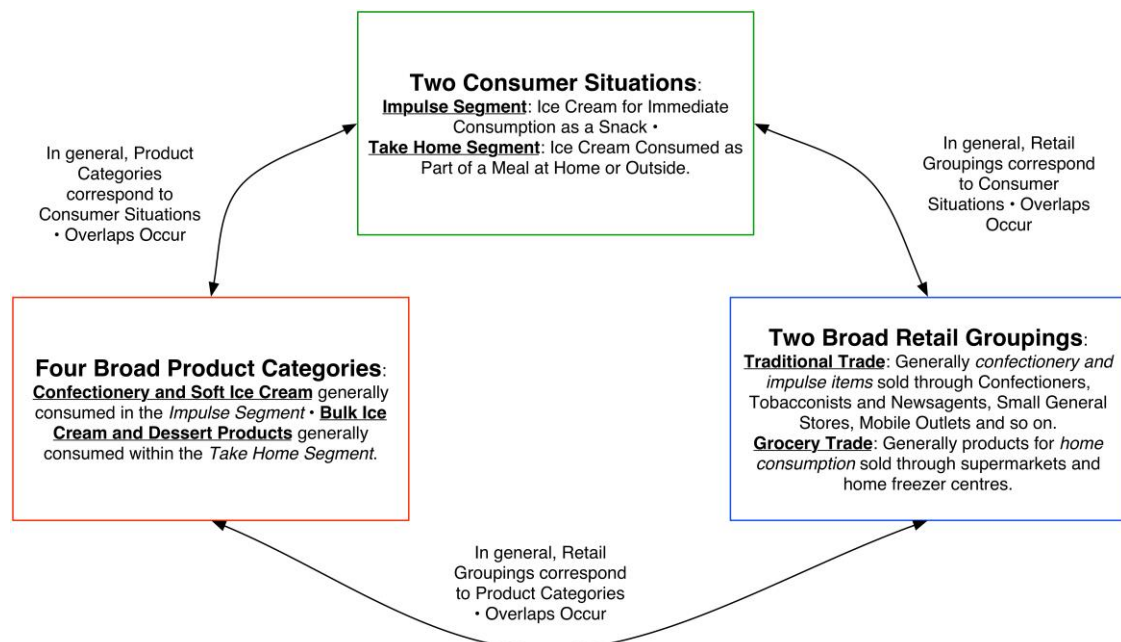


The strength of consumer approach from the moment consumers enter the store to the purchase of the manufacturer's ice cream brand decreases as consumer behaviour is allocated to alternative reinforcement patterns

Given these stimulus events and recurring emissions, three different and non-standard bases for market segmentation arose. Manufacturers categorised according to (a) the type of situation wherein consumers eat ice cream, (b) the type of product generally purchased within one of the situation types, and, (c) the type of retail outlet wherein ice cream was available for purchase and consumption (Figure 154). Market segmentation did not reflect “**homogenous market sectors**” (Monopolies and Mergers Commission 1979, p. 6, emphasis added).

In addition, features and changes in the features emerged gradually. For example, (1) in 1939 Wall’s carried a very narrow product range comprised of 5 confectionery items in what appears to have been a single line⁵²⁹. By 1977 the product range had broadened to include 41 confectionery product lines out of a total of 140⁵³⁰. (2) Retailer outlets traditionally involved in selling ice cream since the emergence of mass consumption during the 1920s comprised a relatively large heterogeneous group of small independent outlets whose buying patterns consisted of small orders and for whom ice cream contributed only a small percentage to total turnover and profit. On the other hand, the sector that emerged during the mid- to late- 1960s was comprised of a relatively more homogenous group of larger grocery outlets or chains. In relative terms, these outlets represented a class of higher volume buyers of ice cream (per capita). (3) During the early period in the history consumers seem to have generally purchased products on impulse. The advent and proliferation of domestic and industrial refrigeration broadened the scope of consumer behaviour settings as more people owned a freezer and could purchase ice cream for consumption at home either as part of a meal or as a snack.

Figure 154 – Three Characteristic Modes of Segmentation Mirroring Features of the Market



⁵²⁹ Refer to Ice Cream Report (1979, §64).

⁵³⁰ Refer to Ice Cream Report (1979, §68).

A. Two Main Types of Consumer Situations

Ice cream purchase and consumption was broadly categorised according to two main types of consumer situations: the *impulse segment* or that consumer situation where ice cream was purchased on impulse for immediate consumption as a snack (also called in hand); and, the *take home segment* included consumer situations where ice cream was consumed as part of a meal either at home or outside⁵³¹. The products in the latter category, therefore, were placed for sale to households or to retailers and caterers.

Whereas at the time of Wall's entry into the market in the 1920s, the impulse segments seems to have been already in existence, the take-home segment emerged most prominently during the mid-1960s.

The Ice Cream Report (1979) does not indicate the size of each segment and the respective shares held by the national manufacturers thereof. According to Ice Cream Report (1994, p. 18, §3.19), however, Wall's claimed that it had retrospectively calculated its share of the impulse market in 1976 to stand at around 46% of sales by value. The estimated impulse market share of Glacier was 45%. Thirty-four secondary manufacturers held less than 10% share of the market among them⁵³².

B. Four Broad Product categories

By 1976, the range and variety of ice cream products manufactured and on sale was extensive. Although no standard nomenclature existed, the Commission identified four main product categories that generally (but not completely) corresponded to the two consumer situations just described⁵³³.

The Commission found a significant degree of overlap in these categories. Bulk ice cream, for example, was purchased by retailers to meet impulse demand or by catering establishments and households for consumption as part of a meal. Households may have also purchased bulk ice cream for consumption at home on impulse as a snack or for dessert. Confectionery items were sold as either as individually wrapped servings or in multipacks of 6 or more individual servings. Both single and multipacks could have been purchased and consumed either as impulse or as dessert items. The Commission also noted that, to an extent, the distinction between bulk ice cream and dessert products was "artificial" because bulk products were generally although not exclusively purchased for consumption after a meal and, thus, the demand for bulk items had been at the expense of dessert products⁵³⁴. That said, however, the consistent growth of sales in the bulk ice cream category was a development of the 1970s and the Commission argued that the category would have not been identified prominently before that period⁵³⁵.

⁵³¹ Refer to the Ice Cream Report (1979, §9).

⁵³² A list of these 34 manufacturers was provided in Appendix 9 of the Ice Cream Report (1979, pp. 177-178).

⁵³³ Refer to the Ice Cream Report (1979, §9-13).

⁵³⁴ Refer to the Ice Cream Report (1979, §12).

⁵³⁵ Refer to the Ice Cream Report (1979, §15).

Table 5 – Consumer Situations and Corresponding Types of Ice Cream Purchased and Consumed

Consumer Situation	Product Category Consumed
<p>Impulse Market: Ice cream purchased and consumed on Impulse or as Snack (also known as ‘in-hand’)</p>	<p>Confectionery (Hard Ice Cream) “Includes ice lollies, other stick confections and novelty products (e.g., ice cream and water ices combined in one product), ice cream bars, choc bars, cups, tubs, sundaes, special ranges for places of entertainment, ice cream in cones and wafers dispensed from bulk containers, ‘dairy ice cream’ or ‘cream ice’ (containing milk fat), small wrapped blocks or brickettes, factory-made cones and similar types of products. They are normally purchased individually” (Monopolies and Mergers Commission 1979, p. 5, §11).</p> <p>The term ‘hard’ is used to denote ice cream that is manufactured, distributed, and retailed in frozen form (§11).</p> <p>A recent development in the confectionery segment relates to the retail of multipacks of 6, 12, or 24 individual servings. Typically, individually packaged single servings were considered to fall within the impulse market, whereas bulk items were considered to fall within the take-home market (§20) .</p>
	<p>Soft Ice cream ‘Soft’ ice cream is prepared from an unfrozen prepared mix for immediate consumption by a machine which is installed at the point of sale (§11).</p>
<p>Take-home Market: Ice cream purchased and consumed as Dessert as part of a meal at home or at a catering establishment</p>	<p>Dessert (Hard) “Include what are usually known as family sweets, packs or bricks, popular sweets, cutting bricks, sliceable litres, as well as individual desserts, individual catering portions, premium and specialty items of varying degrees of complexity and sophistication. Their volume is usually one litre or below and they are prepared for consumption in the home and as special catering lines” (Monopolies and Mergers Commission 1979, p. 5, §11).</p>
	<p>Bulk (Hard) These “products are normally sold in two or four litre packs to the public usually in a limited range of basic types and flavours (e.g. standard vanilla, strawberry, chocolate) for storage in deep freezers in the home or in larger (e.g. 10 litre) containers for dispensing by the retailer or caterer. Wall’s and Glacier and some of the larger secondary manufacturers have developed their own ranges of specialised flavours and composition for sale in bulk to retail establishments for dispensing to consumers” (Monopolies and Mergers Commission 1979, p. 5, §11).</p>

Source: (Monopolies and Mergers Commission 1979).

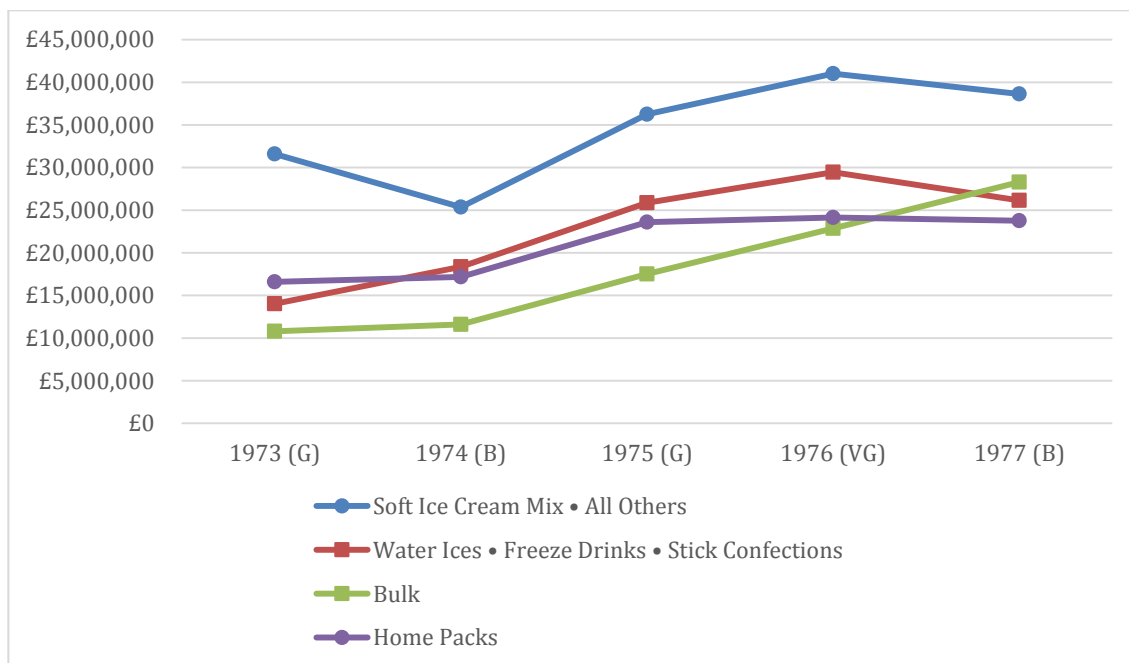
The overlap limited the analysis creating difficulties in representing the size and contribution of each of the four product groups to the overall market and the share each manufacturer held with respect to each category. The Commission, however, obtained two broadly indicative sets of data pertaining to distribution of consumer expenditure according to product categories⁵³⁶: the first was derived from the Business Monitor, a report published by the BSO covering the 1973 to 1977 period (Figure 155). Comparable figures for earlier years were not available⁵³⁷.

⁵³⁶ Refer to the Ice Cream Report (1979, §15) and Appendix 4.

⁵³⁷ Refer to the Ice Cream Report (1979, §15).

From this point forward all figures depicting quantitative data will denote whether the season during a particular year was Bad (B), Good (G), or Very Good (VG) to allow for quick visualisation of the historical effects of the weather on the statistic being displayed. See also Table 8.

Figure 155 – Distribution of Consumer Expenditure Among Product Categories (Net Sales Values, 1972 – 1977)



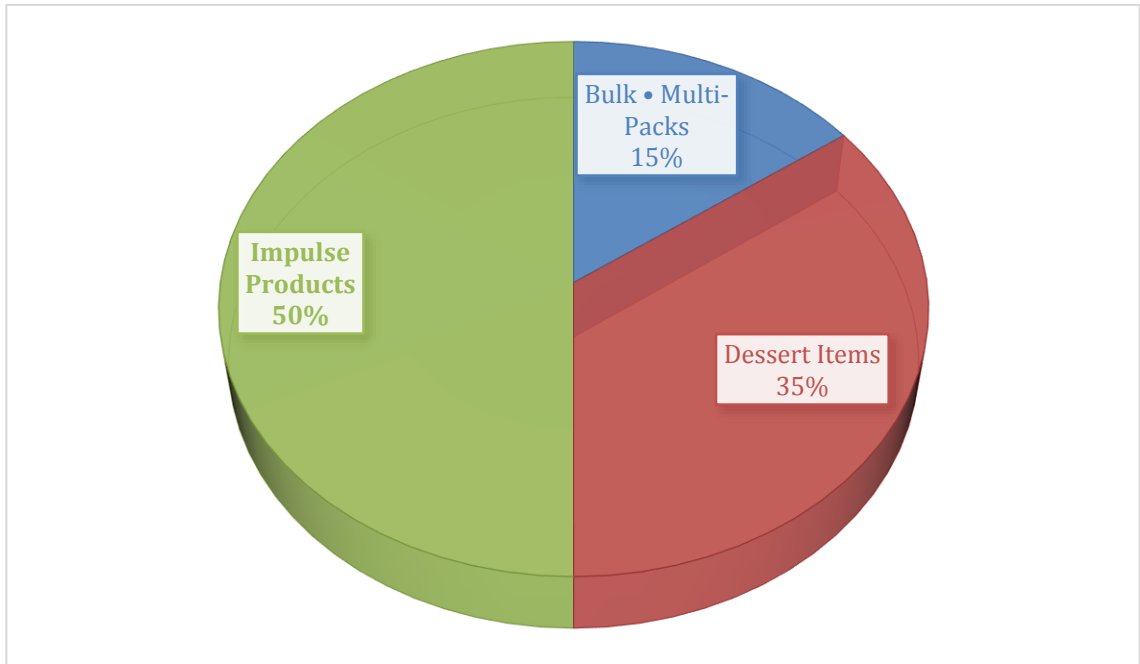
Source: Section A5.7.2A

The second dataset was used by Wall's only for monitoring performance⁵³⁸ on market segment size (Figure 156)⁵³⁹.

⁵³⁸ Refer to the Ice Cream Report (1979, §15).

⁵³⁹ Glacier, on the other hand, did not provide any market estimates according the product categories mentioned arguing that a more realistic approach relied on examining sales per outlet category (Refer to the Ice Cream Report (1979, §159)).

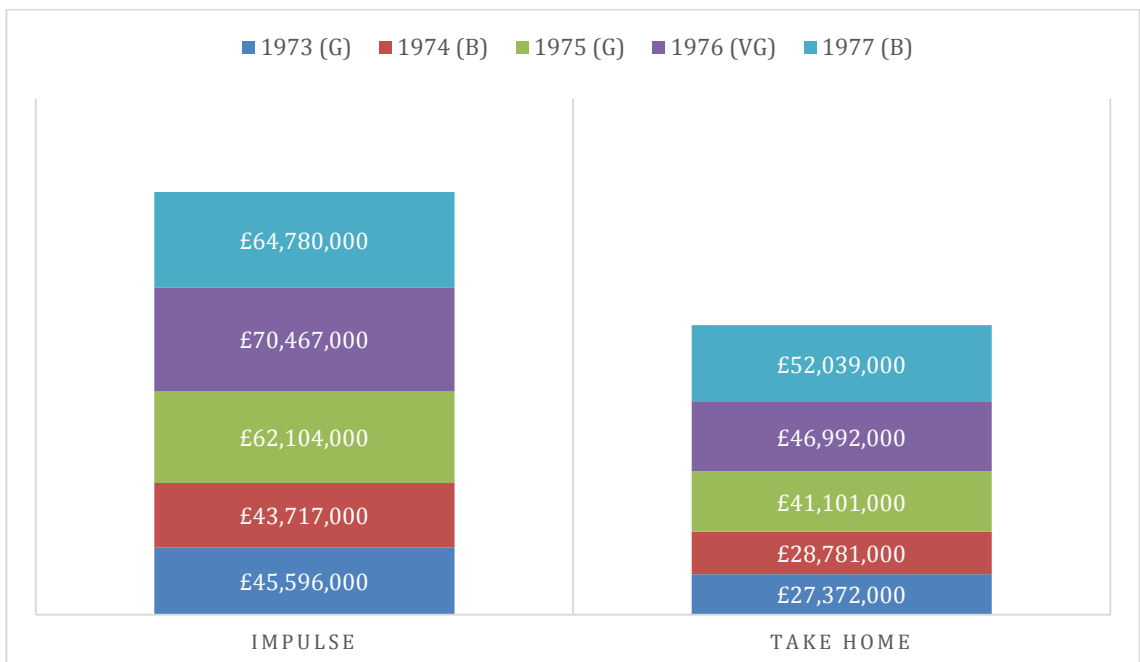
Figure 156 – Estimates of Market Segment Size (Consumer Sales) Provided by Wall's (1976)



Source: Ice Cream Report (1979, p.6, §15) • Section A5.7.2D

Neither the national manufacturers nor the Commission provided estimates for the possible size of the market for each of the two consumer situations. However, given the various descriptions and data provided in the Ice Cream Report it was possible to construct a very broad indication of the possible sizes of the two consumer situations (Figure 157)⁵⁴⁰.

Figure 157 – Distribution of Consumer Expenditure Among Product Categories by Consumer Situation (Net Sales Values, 1972 – 1977)

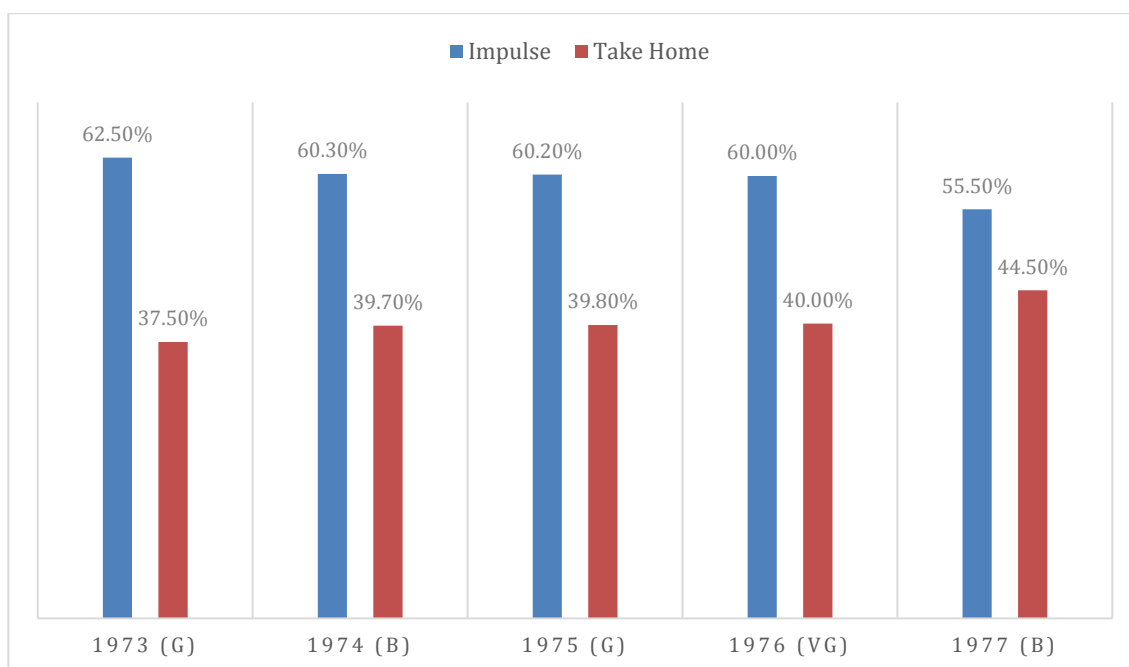


Source: Section A5.7.2C

⁵⁴⁰ Refer to Section A5.7.2C.

Assuming a general correspondence of the four product categories to the two consumer situations as specified in Table 5, the data suggests that the Impulse segment had declined from 62.5% in 1973 to 55.5% in 1977 approximating the estimate provided by Wall's (Figure 156). The Take Home segment increased from 37.5% to 44.5% in the same period (Figure 158). The qualitative evidence provided in the report also noted a shrinking of the impulse segment in favour of the take home market⁵⁴¹.

Figure 158 – Comparison of the Segment Shares of Total Consumer Expenditure (1973 to 1977)



Source: Section A5.7.2C

C. Two Broad Retail Groupings

By 1976, ice cream became available within an extensive range of retail outlets (Table 6)⁵⁴².

⁵⁴¹ Refer to Chapter 1 of the Ice Cream Report (1979).

⁵⁴² Refer to the Ice Cream Report (1979, §9, §16-21, §29-40).

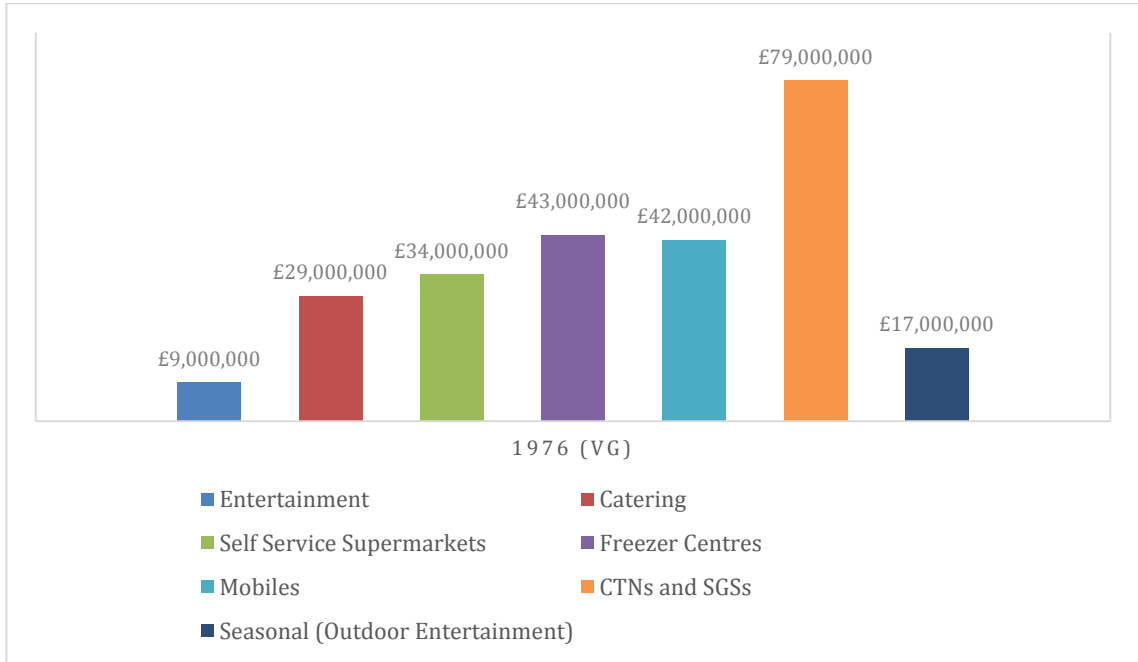
Table 6 – Types of Ice Cream Products Generally Sold within Particular Retail Outlet (1976)

Type of Retail Outlet	Ice Cream Products Generally Sold within Particular Retail Outlet
Confectionery-Tobacconist-Newsagents (CTNs) and Confectionery Newsagents, neighbourhood or corner shops, general stores, smaller independent grocers • Historically, CTNs and other small shops were by far the more numerous single retail grouping and more prominent in the sale of ice cream.	Largely <i>Confectionery</i> and <i>Dessert</i> (§17) • These outlets were an important means for retailing dessert and bulk items especially when consumers had limited refrigeration space bulk packaging (§17).
Places of entertainment or leisure such as cinemas, bingo halls, sports, and other outdoor events of all kinds.	<i>Confectionery</i> (§17).
Seasonal sites such as kiosks, parks, beaches, promenades, and other holiday sites. Kiosks are especially prominent during warmer weather.	<i>Confectionery</i> (§17).
Off-licences and petrol stations.	<i>Confectionery</i> (§17).
Mobile Vans and Mobile Franchises both concerned only on the sale of ice cream.	<i>Impulse Items</i> (§17).
Small catering outlets and a limited number of ice cream parlours.	<i>Impulse Items</i> (§17) • Some of the ice cream parlours were franchises: Baskin Robbins was a wholly owned subsidiary of JLC operating parlours in the US and Europe selling ice cream under its own label (see the Ice Cream Report (1979, §208-211)) • Dayville Limited, a subsidiary of City Hotels Group, operated an ice cream parlour franchise business retailing American style ice cream through approximately 80 outlets (see the Ice Cream Report (1979, §232)).
Larger grocery outlets including national and regional multiple chains and home freezer centres.	<i>Dessert</i> products and <i>bulk</i> packs (§18) • These outlets, particularly the home freezer centres, were an important means for retailing volumes of bulk ice creams to consumers • The sub-category also developed a significant business in the sale of <i>confectionery</i> and the Commission noted that there were the “beginnings of the development of ‘impulse’ sales of ice cream confectionery items at stores of this type” (Monopolies and Mergers Commission 1979, p. 7, §18)
Co-operative shops, Voluntary groups, and similar organizations.	<i>Dessert products</i> (§18).
Catering outlets including restaurants, cafes, snack bars, hotels, catering wholesalers, hospitals, schools and other institutions, pubs, canteens and so on.	The main product demanded by catering establishments is <i>bulk</i> ice cream although there is strong demand for a range of individual portions (§18) • Snack bars also cater for some of the demand for impulse products (§18).

Source: (Monopolies and Mergers Commission 1979)

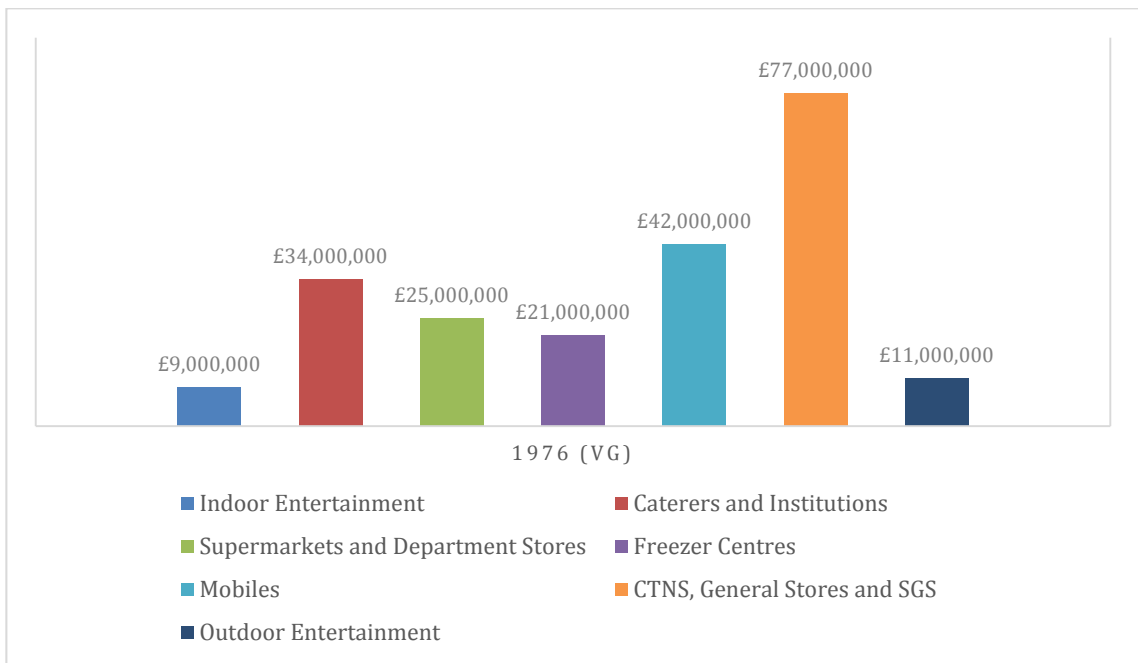
Figure 159 and Figure 160 provide estimates of the distribution of consumer expenditure throughout the various types of outlets wherein ice cream was available for purchase and consumption by Wall’s and Glacier respectively.

Figure 159 – Estimates Provided by Wall’s on Consumer Expenditure Distribution Among Outlet Types (Valued at Consumer Prices, 1976)



Source: Section A5.7.3A

Figure 160 – Estimates Provided by Glacier on Consumer Expenditure Distribution Among Outlet Types (Valued at Consumer Prices, 1976)

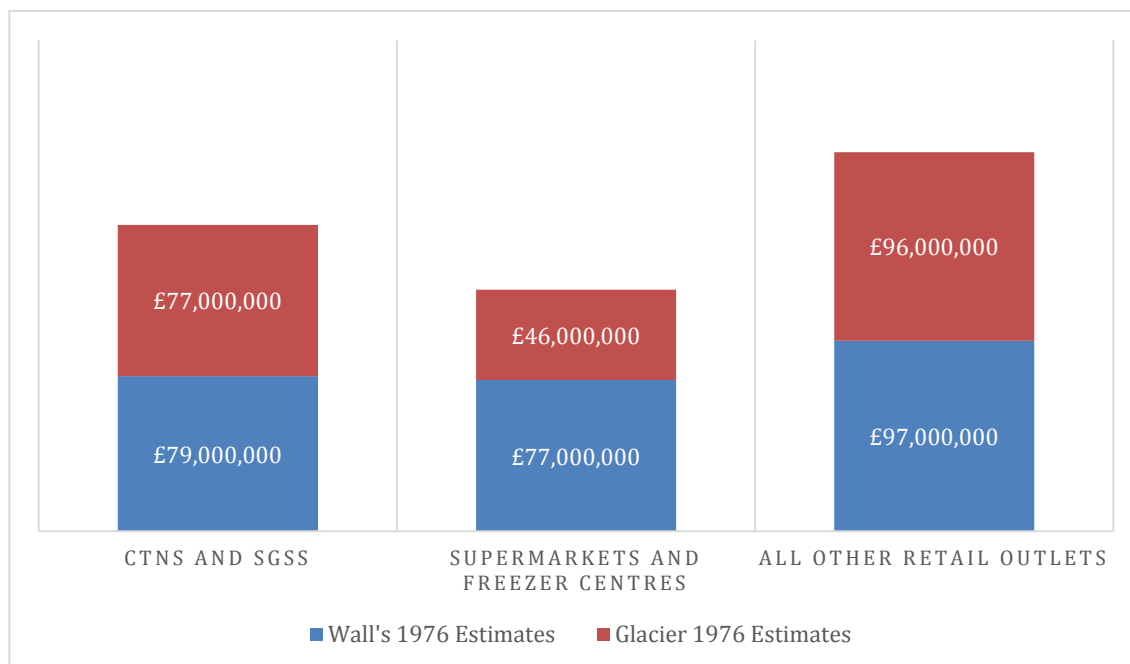


Source: Section A5.7.3A

The Commission noted that its efforts at quantifying market size and share were hindered by the fact that there were no precise figures of the total sales at consumer prices registered by each individual manufacturer. Therefore, it relied on the estimates provided by Wall’s and Glacier. Most importantly, the Commission highlighted that whereas both organizations arrived at similar valuations of the segment comprised CTNs and SGSs, the valuations of the Supermarkets and Home Freezer Centres segment differed significantly. Wall’s

estimated this segment to be £77m whereas Glacier's estimations stood at £46m (Figure 161)⁵⁴³.

Figure 161 – Comparison of Market Valuation by Retail Segments (Valued at Consumer Prices, 1976)



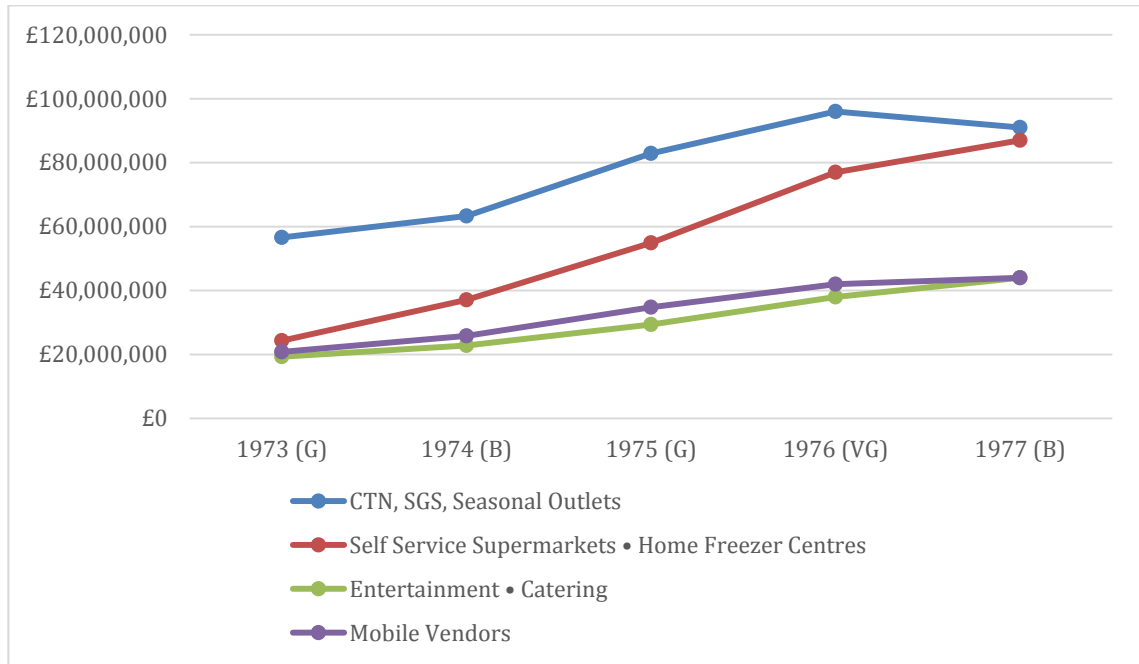
Source: Section A5.7.3B

Wall's also provided further details of consumer expenditure (at consumer prices) for the period 1973 to 1977⁵⁴⁴.

⁵⁴³ Refer to the Ice Cream Report (1979, §21). Glacier argued that the estimate provided by Wall's with respect to sales estimates through supermarkets and home freezers centres was too high. In parallel, Wall's claimed that Glacier "seriously underestimated" the growth of the market and the sales of the small scale manufacturers (1979, pp. 168-169, Appendix 4 §12). In this last respect, it is important to note that Glacier was historically under-represented by supermarkets and freezer centres segment while Wall's retained a continual strong presence. Glacier admitted it had underestimated the growth potential for the demand of ice cream products typically sold to the segment. In addition, the "very low gross margins" generated by trading in the sector occasioned reluctance on the part of Glacier to develop the segment of the market more actively (Monopolies and Mergers Commission 1979, p. 59, §161). Such a reluctance and lack of activity within the sector suggests that Glacier did not possess sufficient knowledge of the sector to value it in a reliable manner. As such, Glacier could have been at an informational disadvantage in relation to Wall's.

⁵⁴⁴ Refer to Section A5.7.3.

Figure 162 – Changing Distribution of Consumer Expenditure by Type of Outlet (Valued at Consumer Prices, 1973 – 1977)



Source: Section A5.7.3C

Despite the real objections by the Commission and by Glacier to these latter estimates⁵⁴⁵, the figures indicate: (a) a growth in the overall ice cream market during the period; (b) possible long-term change in the distribution of consumer expenditure by type of outlet, which, according to the Commission arose during the late 1960s and early 1970s from changes in habitual consumer behaviour patterns in relation to ice cream away from the more and highly prominent traditional outlets (CTNs and SGSs) towards favouring self-service stores, supermarkets, and home freezer centres; and, (c) the continued growth in the demand for confectionery ice cream sold in multipacks, and for bulk and dessert ice cream products sold in the larger grocery outlets. On the basis of this evidence, the Commission predicted that sales through the small shops would either remain static or continue in their decline⁵⁴⁶.

Wall's conveniently grouped the varied range of outlets in two main segments: the Traditional Trade composed of individual and multiple (chains) CTNs, confectioners and tobacconists (CTs), seasonal and entertainment outlets, mobile outlets, and SGSs. The second segment was the Grocery Trade mainly composed of supermarkets and freezer centres. The classification, however,

⁵⁴⁵ See Section A5.6.4.

⁵⁴⁶ Refer to the Ice Cream Report (1979, §37)

excluded catering establishments, which Wall's analysed on its own right⁵⁴⁷. The case study adopts this distinction between the traditional trade and the grocery trade⁵⁴⁸.

Table 7 – Broad Classification of Retail Outlets by Wall's (1976)

Retail Outlet Type	Product Sold	Retail Grouping
Individual and multiple (chains) confectioners, tobacconists, and newsagents (CTNs), confectioners and tobacconists (CTs), seasonal and entertainment outlets, mobile outlets, and small general stores (SGSs)	Principal business: confectionery products for immediate consumption.	Generally Traditional Trade and some Grocery Trade when dessert products are sold for home consumption.
Supermarkets and Freezer Centres	Principal business: products for home consumption.	Generally, Grocery Trade.

Source: (Monopolies and Mergers Commission 1979, §19), Section A5.7.3B

The product categories identified earlier do not correspond completely with the two retail groupings. For example, a wrapped single from a multipack purchased at a supermarket or an item of confectionery purchased from a mobile van may fulfil an impulse purchase⁵⁴⁹. However, the sale of impulse items (especially confectionery products) was generally associated with the Traditional trade and the sale of take home products was generally associated with the Grocery trade⁵⁵⁰.

The Commission did not provide an estimate of the two retail groupings. However, it was possible to construct a rough indication of the two broad segments based on the qualitative and quantitative evidence found in the report⁵⁵¹. Figure 163 provides an indication of the growing importance of the Grocery vis-à-vis the Traditional Trade between 1973 and 1977.

⁵⁴⁷ Refer to the Ice Cream Report (1979, §19). Glacier, on the other hand, had a different classification system: the Confectionery Segment included CTNs, general stores, smaller grocers, off licences, garages, and cash and carry wholesalers. (According to the Frozen Foodstuffs Report (1976, §60) cash and carry organizations were wholesalers supplied directly by manufacturers and other wholesalers who did not undertake physical distribution. Rather, they sold to consumers directly from their premises. It appears that the rising costs of distributing small orders had contributed to the increase in numbers of cash and carry firms). The confectionery segment accounted largely for impulse items for immediate consumption. Catering, Leisure, Supermarkets, Freezer Centres, Mobile, and so on were considered as separate segments (Refer to the Ice Cream Report (1979, §19, §160)). In relation to any data pertaining to the outlet types, Glacier claimed "it had greater confidence in its estimate of sales at consumer prices than its breakdown of the outlet categories" (Monopolies and Mergers Commission 1979, p. 59, §162 fn.2). The Commission found the broad, non-standardised, and simplifying categorisation made by Wall's very useful (refer to the Ice Cream Report (1979, §19)): For example, the Commission identified and contrasted major differences in the environmental conditions faced by the national manufacturers when transacting with the different retailers comprising the traditional and grocery segments (see also Section A5.2.8).

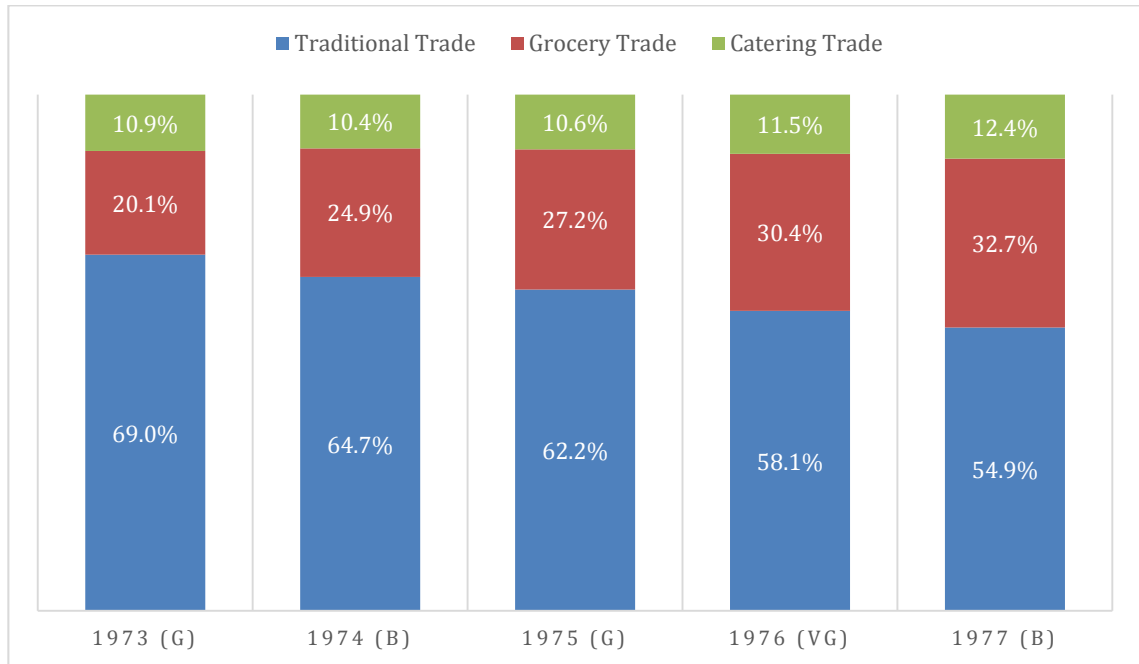
⁵⁴⁸ The significant differences in reinforcement criteria of outlets within each of the two segments (see Section A5.4.5) between the two markets contradict arguments put forward by industry participants (for example, Walls in paragraph §344) that the ice cream market was to be considered as a single market.

⁵⁴⁹ Refer to the Ice Cream Report (1979, §20, §354).

⁵⁵⁰ Refer to the Ice Cream Report (1979, §20 and §35).

⁵⁵¹ See Section A5.7.3E

Figure 163 – Possible Distribution of Consumer Expenditure at Consumer Prices according to Broad Aggregated Retail Segments



Source: Section A5.7.3E

The Traditional Trade segment is estimated to have been about 54.9% of the total market for ice cream by consumer prices in 1977. The estimate is relatively similar to the estimate provided by Wall's for the Impulse Market (Figure 156) and the 55.5% estimate derived from the data provided by the BSO (Figure 158).

D. Estimating Market Size and Market Shares

The evidence suggests that both national manufacturers appear to have segmented the market according to the three key stimulus events: (a) individual types of outlets, (b) the product lines that could be sold through each of these outlets, and, (c) the consumer situations.

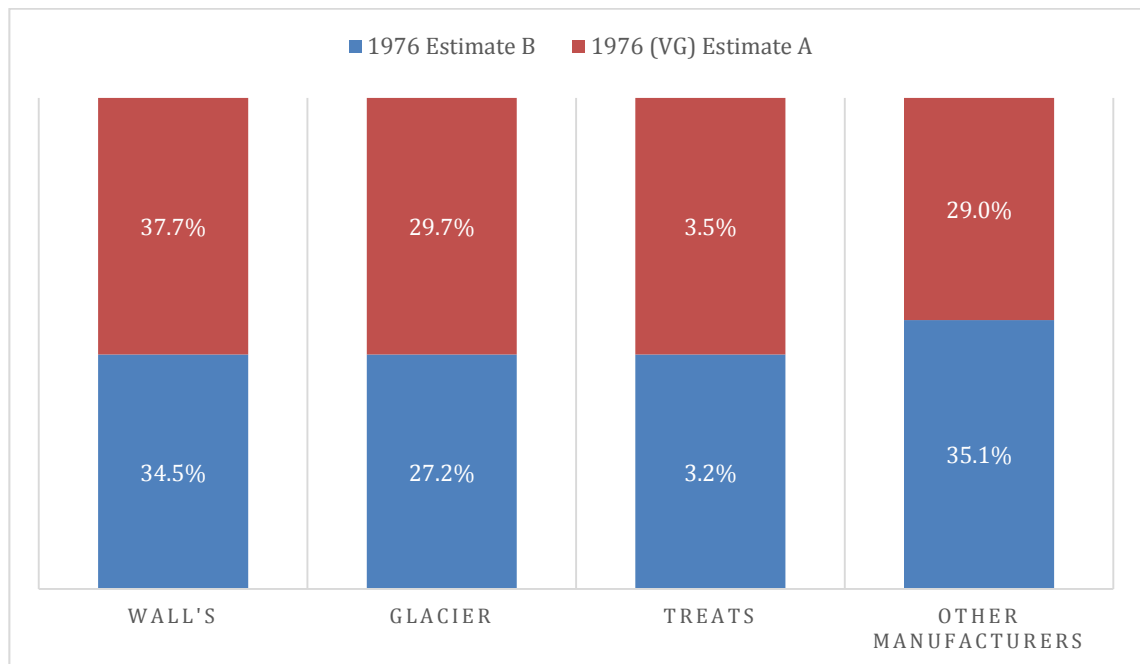
A more clear and pronounced distinction between “impulse” and “take home” market segments appears to have emerged during the period after the very early 1970s and especially after the Commission concluded its 1976/7 investigation. Indeed, until the end of the investigation, the ice cream market was described in broad terms by those giving evidence as “a single market” because “suppliers are marketing the same ice cream to the same customers from different retail outlets and in different packs, depending on the occasion and the circumstances, and outlets in each sector are competitors of outlets in other sectors” (Monopolies and Mergers Commission 1979, p. 8, §20)⁵⁵².

Given the need for quantification and the market characteristics and associated problems, the Commission treated the ice cream trade as a single and relatively homogenous market for the purposes of quantification.

⁵⁵² Refer also to the Ice Cream Report (1979, §354).

Based on a consideration of the data gathered, on the associated difficulties, problems, and evaluation differences encountered, and the opinions received by the various parties consulted, the Commission opted to express total market size in terms of a range within which it believed actual total net sales values and volumes would fall (Figure 164 and Figure 165). Estimate A represented the lower limit of the range while Estimate B represented the upper limit of the range. In addition, the Commission used Net Sales Value (NSV) as the most reliable guide to calculate market size and respective manufacturer shares⁵⁵³.

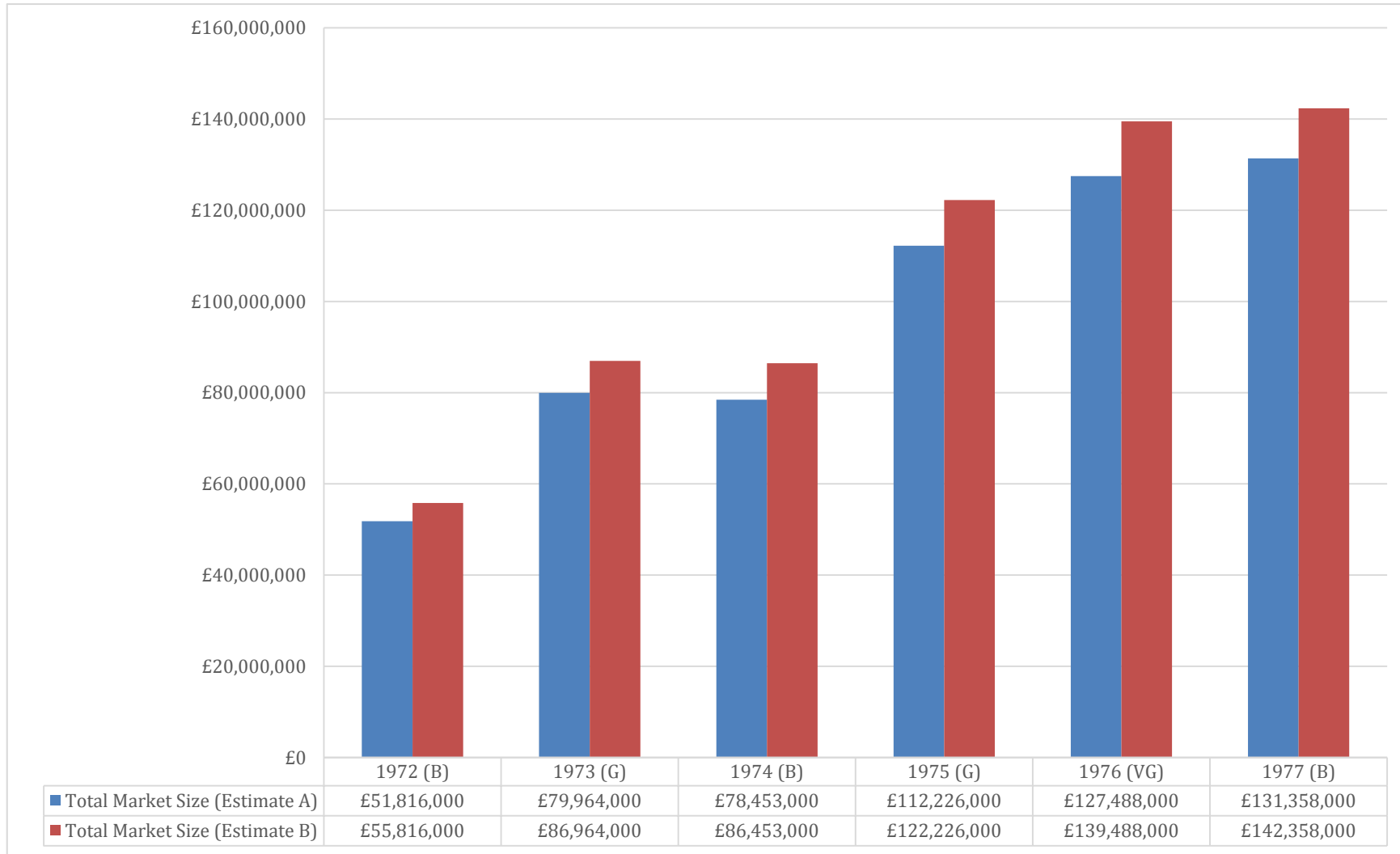
Figure 164 – Comparison of Estimated Range of Market Shares of the National Manufacturers (1976)



Source: Section A5.7.1D and Section A5.7.1E

⁵⁵³ Refer to the Ice Cream Report (1979, §50 and §2 in Appendix 4). NSV is calculated by deducting discounts and bonus payments from the standard wholesale value of sales orders (Refer to the Ice Cream Report (1979, p. 28, §70 fn.1)). NSV, thus, stands in contrast to sales valuations based on consumer (retail) prices. Appendix 4 of the Ice Cream Report explains how the Commission went to construct this range (See also paragraphs 47-50 (pp. 20-21) and especially paragraphs 13 and 14 of Appendix 4 (p. 169) to the Ice Cream Report (1979)). Section A5.7.1E contains the estimated market shares for the main and secondary manufacturers between 1972 and 1977.

Figure 165 – Total Market Size (by Net Sales Values) Estimated by the Commission (1972 to 1977)



Source: Section A5.7.1C and Section A5.7.1D

A5.2.4 Recurring Physical Contingencies: Seasonality and the Weather

Seasonality and weather were two inter-related salient features of the ice cream market: whereas the effects of seasonality on firm practices appeared to have been more inherent to the ice cream trade per se (i.e., arising from the nature of ice cream), the effects of weather were an environmental condition arising from the climatic conditions due the geographical location of the UK.

The ice cream trade was “highly seasonal” with over 75% of total sales revenues flowing within the six months between April to September (Monopolies and Mergers Commission 1979, p. 11)⁵⁵⁴. Thus, the contingency relations specifying the flow of the patterns of rewarding consequences (i.e., demand, sales revenues and volumes, profits) of supplying ice cream under the condition of seasonality may be described as revealing an intermittent interval arrangement analogous to a relatively *fixed interval schedule of reinforcement*. Seventy-five per cent of the patterns of utilitarian and informational reinforcement arising from manufacturers and retailers engaging with consumers fell annually between April and September. 25% fell between October and March.

The weather and climatic conditions in the UK were such that, in combination with the particular nature of ice cream⁵⁵⁵, associated purchase and consumption behaviours varied greatly according to summer temperatures. Thus, sales revenues and profits varied accordingly. To the extent that short term variations in the weather during summer led to wide and unpredictable daily and weekly sales: total ice cream revenues in one week could be half or double those of the following week and variations in individual product sales were substantially greater⁵⁵⁶. Whereas the purchase and consumption of impulse products were highly susceptible to seasonality and weather⁵⁵⁷, take-home bulk and catering products appeared to experience lesser fluctuations in demand and in sales⁵⁵⁸.

The contingency describing the effects of weather on performance also appears to reveal an intermittent interval arrangement. However, the closest analogue describing the arrangement is the *variable interval schedule of reinforcement* because the amount of time that elapsed between one reinforcer (sales and profits) to the next varied according the vagaries of British weather. Reinforcers occurred more frequently during good summers than they did during bad summers.

Table 8 provides the assessment made by the Commission on the basis of the evidence provided by Wall’s and Glacier with respect to the effects of weather on sales and profits.

⁵⁵⁴ Refer to the Ice Cream Report (1979, §25).

⁵⁵⁵ See Section A5.2.5.

⁵⁵⁶ Refer to the Ice Cream Report (1979, §25).

⁵⁵⁷ Refer to the Ice Cream Report (1979, §24).

⁵⁵⁸ Refer to the Ice Cream Report (1979, §201).

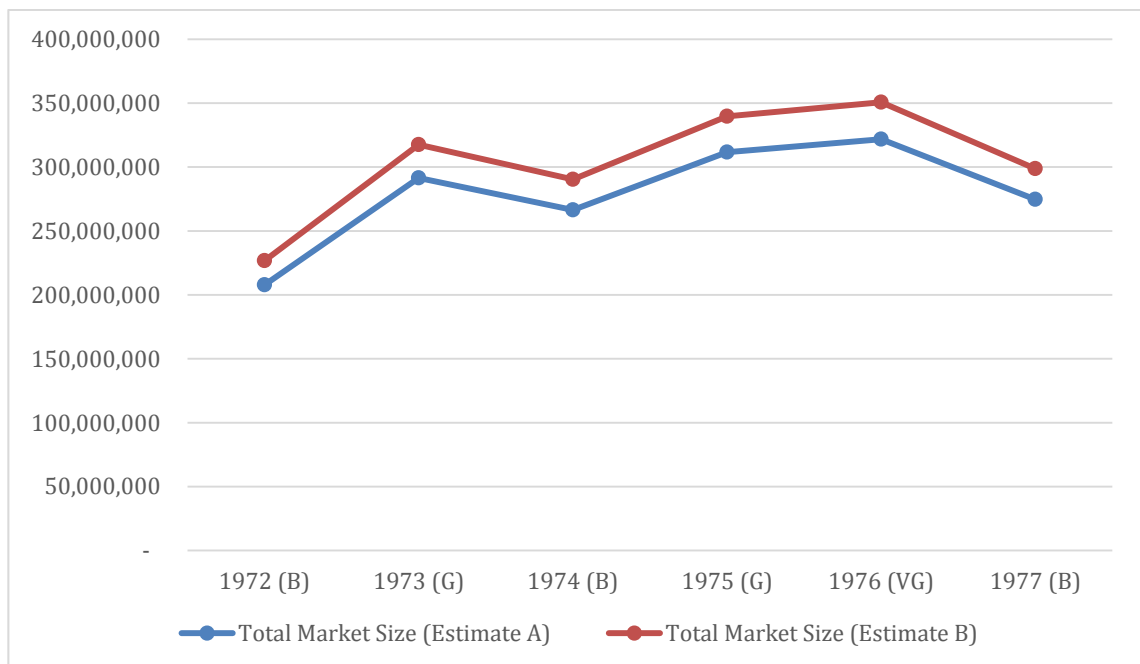
Table 8 – The Effects of Weather

	1972	1973	1974	1975	1976	1977
Effects of Weather Variations on Sales	Below Average (B)	Above Average to Good (G)	Below Average (B)	Good to Very Good (G)	Exceptionally Good (VG)	Below Average (B)

Source: (Monopolies and Mergers Commission 1979, §25, §244)

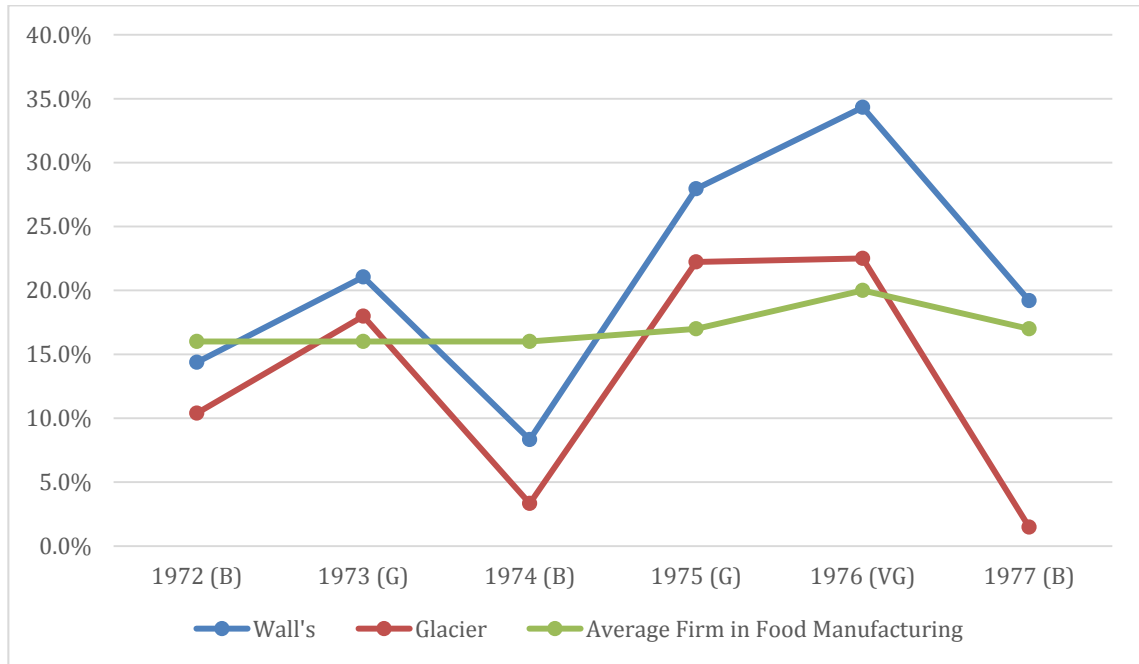
Figure 166 shows the susceptibility of sales volumes of the national and secondary manufacturers to weather while Figure 167 shows the susceptibility of return on capital employed of Wall's and Glacier behaviour (compared to the average firm in food manufacturing) to negative and positive effects of the weather.

Figure 166 – Comparison of Sales Volumes (Litres) of Ice Cream Manufacturers (1972 to 1977)



Source: Section A5.7.1B

Figure 167 – The Susceptibility of Return on Capital Employed of Wall’s and Glacier to Weather (Comparison to Average Firm in Food Manufacturing)



Source: Section A5.7.11

Wall’s drew attention to these peculiarities of the business describing them as “special risks of the ice cream industry” which, it claimed, placed the company in a situation where it could only make profits during six months of the year (Monopolies and Mergers Commission 1979, p. 123). The relatively high proportion of fixed costs in the business (for example, high capital expenditure and overheads arising from refrigerated distribution, storage, and relatively production) signalled that achieving break even and registering profit critically depended on business performance during ice cream season and especially during summer⁵⁵⁹. Thus, off-season, the manufacturer experienced a relatively high level of deprivation of sales and profits.

In combination with the other contingencies governing the ice cream trade, the effects of weather were remarkable: in the first instance, ice cream had a relatively short shelf life. Hence, off-season production and the accumulation of stock during the winter were not possible. Thus, off-season, the national manufacturers were faced with significant large and relatively idle spare capacity. Further, storage of such accumulated stocks would have been costly⁵⁶⁰. Both national manufacturers made pre-season estimates and planned their production runs, employment requirements, and raw material purchases accordingly given technological and other limitations⁵⁶¹. These estimates, however, were not entirely dependable. Direct exposure to the contingencies (actually experiencing a good or a bad summer) resulted in either of two punishing effects on production. In the cases of hot weather, activity increased and, in many cases, shifts had to be extended (including in some cases working at night and during the weekend) to meet demand. Associated costs increased. Both manufacturers claimed the added potential risks of shortages at retail due to higher consumer approach to ice cream and quicker

⁵⁵⁹ Refer to the Ice Cream Report (1979, §25).

⁵⁶⁰ Refer to the Ice Cream Report (1979, §26).

⁵⁶¹ Refer to the Ice Cream Report (1979, §74-78 (Wall's); §166-169 (Glacier))

rates of sale during hot periods. Shortages resulted in obvious loss of revenues and profits. On average, warmer weather occasioned a higher rate of approach among consumers towards ice cream, and sales soared during good seasons. Bad summers, on the other hand, resulted in low sales, a risk of not breaking even, and a huge strain on profits due to significant idle capacity especially among those manufacturers with plants geared towards substantial production and sales volumes, and to the accumulation of unsold and inventories of highly perishable products⁵⁶². In addition, a succession of bad seasons could seriously hamper market and firm growth as had happened in the early 1960s⁵⁶³.

Although retailers also faced these problems, the associated risks burdened mostly those organizations whose primary business was ice cream. These problems were compounded by the lack of reliable means to accurately predict the weather and its wild fluctuations. Thus, firms appear to have resided in an environment characterised by a relatively higher level of uncertainty and very little means to mitigate against these relative levels.

Seasonality and the vagaries of weather occasioned behaviour among all manufacturers that functioned to reduce its negative effects including off-season sales, shaping year round consumption of take-home products, innovation through the provision of new and increasingly sophisticated products⁵⁶⁴, and, even price reductions during bad seasons⁵⁶⁵ which, according to Wall's, did not have appreciable effects on the demand for ice cream⁵⁶⁶. Both Wall's and Glacier developed, utilised, and continuously researched advanced modelling techniques (weather correction) in an attempt to distinguish the effects of weather variations on demand/sales from other sources and to correct for them⁵⁶⁷.

A5.2.5 Recurring Technological Contingencies: Products, the 'Cold' Value Chain, and Production

One key factor emerging from the history of the industry and common to all those involved in the trade was that ice cream had to be manufactured, stored, and delivered to customers and consumers while retaining low temperatures to safeguard the integrity, prevent spoilage, and retain the quality of the product for ultimate purchase and consumption. This is interpreted as a physical contingency related to the nature of the product and constitutes another one of the rules under which firms operated within the trade (Figure 168).

⁵⁶² Refer to the Ice Cream Report (1979, §25-26).

⁵⁶³ Refer to the Ice Cream Report (1979, p. 14, §32, §350).

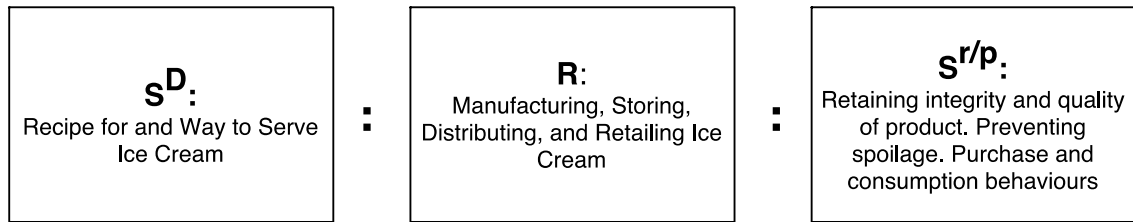
⁵⁶⁴ Refer to the Ice Cream Report (1979, §25).

⁵⁶⁵ Refer to the Ice Cream Report (1979, §329).

⁵⁶⁶ Refer to the Ice Cream Report (1979, §108).

⁵⁶⁷ Refer to the Ice Cream Report (1979, §61, 155). See also Section A5.3.

Figure 168 – The Product Contingency describing Ice Cream



This environmental condition occasioned a recurring and singular feature particular to the ice cream trade (and frozen foods, in general): a specialised “cold” infrastructure across the entire value chain that was distinct from the supply of such substitute confectionery products as sweets.

The Commission expressed the salience of the condition as follows: “for any sizeable business, requirements of cold storage and refrigerated distribution form a major element of total costs. The producer needs either his own distributive network (including cold stores, depots, and refrigerated vehicles) or access to a distributor who has them” (Monopolies and Mergers Commission 1976, p. 10, §23).

Industry participants had no means to escape this condition without jeopardising their stake in the ice cream trade. For example, the evidence shows that several of the smaller retailers were either reluctant to start selling ice cream to consumers by investing in their own freezers or would have exited the market had manufacturers ceased to provide them with freezer cabinets: the relatively low sales volumes traded by these small stores would not justify investing in and maintaining their own freezers dedicated to ice creams⁵⁶⁸. From the perspective of manufacturers, however, these small sized retailers were, in aggregate (some 85,000 out of over 150,000 outlets selling ice cream in 1976⁵⁶⁹), crucial to reaching large numbers of ice cream consumers and, hence, in a critical success factor to achieving national coverage. The Commission noted that the establishment of a nationwide network populated by retailers to whom freezers were generally provided by manufacturers was the “major marketing development of the earlier post war period” (Monopolies and Mergers Commission 1976, p. 13, §31)⁵⁷⁰. Hence, the product contingency severely constrained the market behaviour setting faced by organisations involved in the trade.

The evidence shows that the physical contingencies specific to ice cream trading were a stable feature of the environment since the early 1920s and continued governing the behaviour of market participants throughout the 1970s. Trading under this condition resulted in a considerable amount of capital expenditure and maintenance costs to support the cold chain infrastructure. In freezer exclusivity alone, Wall’s had an installed base of nearly 57,000 cabinets and Glacier had 59,000⁵⁷¹. In the absence of a developed refrigerated

⁵⁶⁸ It appears that retailers were compelled to use freezers dedicated to ice cream for hygiene and quality purposes (Refer to the Ice Cream Report (1979, §285)). See also Section A5.2.8 and A5.3.1.

⁵⁶⁹ Refer to the Ice Cream Report (1979, §16).

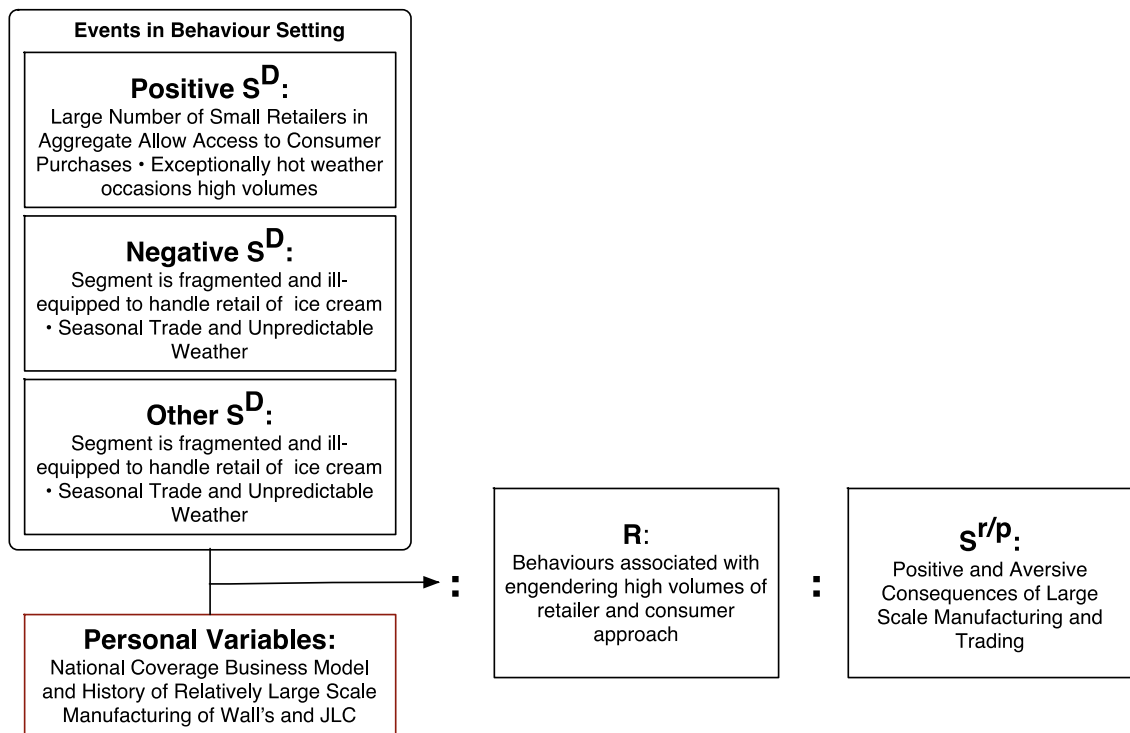
⁵⁷⁰ See a more detailed explanation in Section A5.3 and Section A5.4.1.

⁵⁷¹ See Section A5.7.5 and Figure 147.

wholesale distribution channel, both these organisation invested heavily in refrigerated storage and transport.

The aversive consequences signalled by the conditions of physical product contingency combined with other environmental contingencies (e.g., the weather and seasonality) appear to have occasioned the practice of freezer and outlet exclusivity by Wall's and Glacier. Such emissions appear to have been best suited to satisfy the rules specified by their business model and make more likely patterns of relatively high rewards of mass consumption of ice cream (Figure 169).

Figure 169 – Example of Environmental Stimuli Achieving Discriminative Function among National Manufacturers



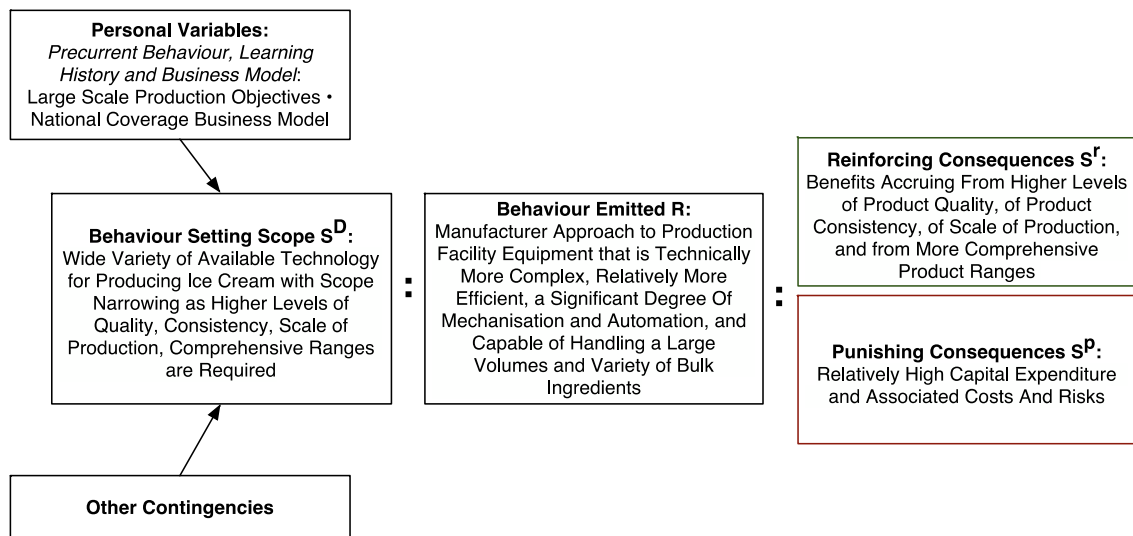
The report provides a comprehensive description with respect to the production of ice cream⁵⁷².

Technological contingencies were such that the behaviour setting faced by new and existing manufacturers was relatively open in scope: the production of simple standard ice cream varieties ice cream did not require investment in high tech equipment. Thus, barriers to entry were relatively low. Entrants at such level were therefore not deterred by patterns of significantly high punishers such as capital investment and related maintenance costs and resources involved in operating equipment. In addition, a wide range of production facilities was available to both large and small-scale manufacturers and technological improvements in the development of smaller ice cream production equipment were continuous. Such entry-level positions, however, were constrained by narrower product ranges, relatively lower levels of quality and product consistency, and, relatively smaller scale.

⁵⁷² Refer to the Ice Cream Report (1979, §51-57).

On the other hand, the technological contingencies governing large scale production (especially given the business model of national coverage followed Wall's and Glacier⁵⁷³) specified that the benefits accruing from higher levels of product quality, of product consistency, of scale of production, and from more comprehensive product ranges were contingent upon relatively costly expenditure to acquire equipment that was technically more complex, relatively more efficient, a significant degree of mechanisation and automation, and capable of handling a large volumes and variety of bulk ingredients (Figure 170)⁵⁷⁴. Thus, it would seem that the behaviour setting scope became more constrained as a function of the business model/objectives of the organisation concerned.

Figure 170 – Technological Contingency Governing Large Scale Production



A5.2.6 Manufacturing: Activity and Market Organisation

Figure 171 provides an overview of the market structure by 1976 and the routes to patterns of ice cream purchase and consumption⁵⁷⁵.

By 1976, the supply of ice cream to UK consumers was mainly fulfilled by two types of manufacturers, classified by the Commission as national suppliers and secondary suppliers, a category that includes medium-scale, and small-scale producers⁵⁷⁶.

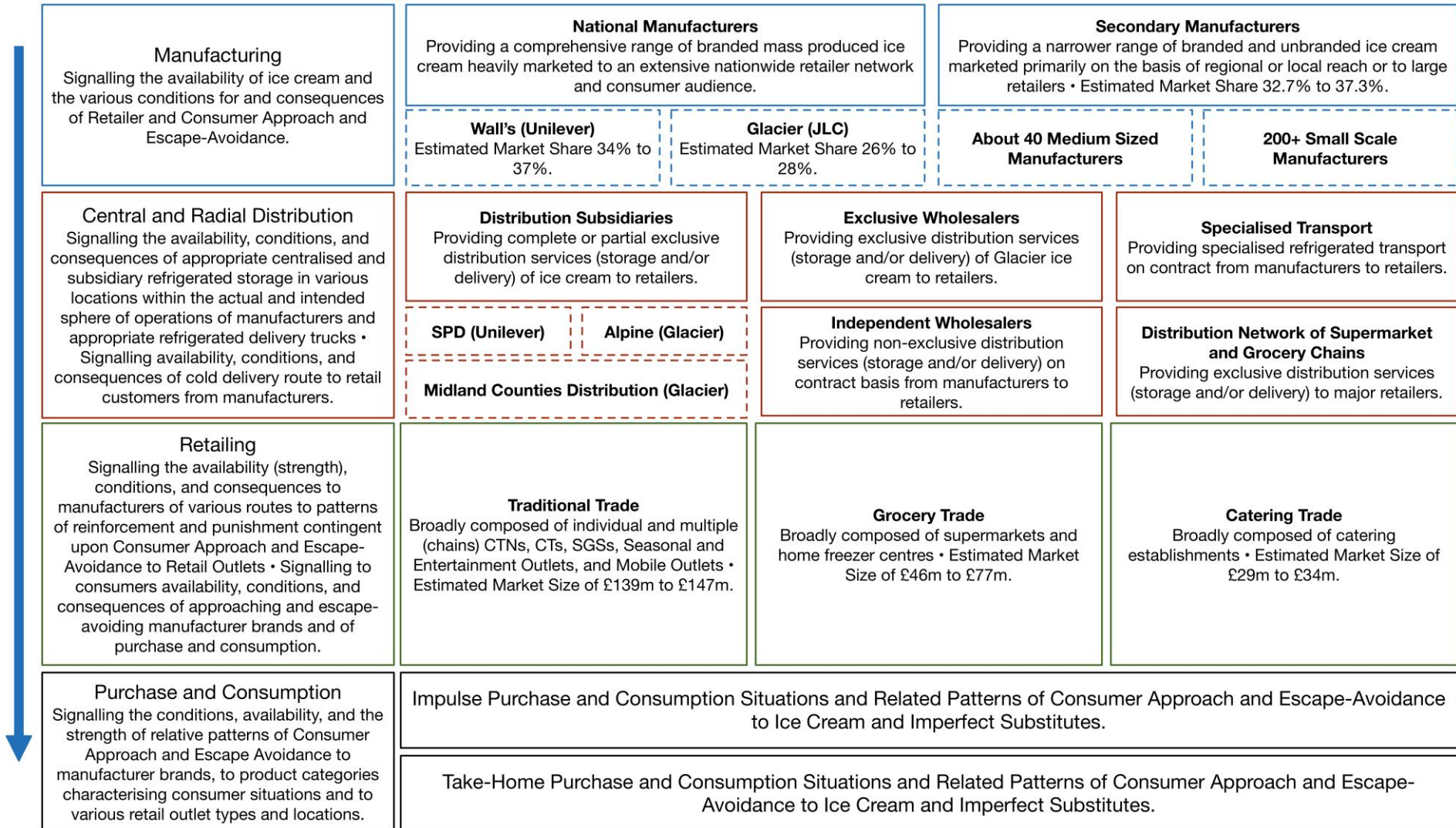
⁵⁷³ See Section A5.2.6.

⁵⁷⁴ Refer to the Ice Cream Report (1979, §38, §56).

⁵⁷⁵ According to the Commission, the market structure of the UK is relatively similar to that found in Western European countries wherein patterns of demand shaped and maintained mass production to one or more large scale operations mass producing and distributing national brands to retailers dispersed all over the country in relatively small quantities (Monopolies and Mergers Commission 1979, §315).

⁵⁷⁶ Refer to the Ice Cream Report (1979, §41).

Figure 171 – Market Structure (1976): Activities and Functions of Participants in the Ice Cream Trade and Routes to Consumer Market



A: National Manufacturers

Wall's and Glacier emerged as two national manufacturers whose business model revolved around the provision of a comprehensive range of branded ice cream products that were mass-produced and heavily marketed to an extensive nationwide retail network and advertised to a nationwide audience of final consumers. Patterns of reinforcement, namely, sales, profits, market share, and return on average capital employed, were contingent upon mass consumption of ice cream.

As independent and third party distribution to retail emerged only during the mid-1960s and the 1970s, national manufacturers, typically held direct mutuality-plus-exchange relationships with retailers. Until 1963, Wall's even held mutuality-plus-exchange relationships directly with consumers⁵⁷⁷. By the 1970s, however, the national manufacturers did not generally sell directly to consumers anymore and, thus, held mutuality-only relations with consumers. Manufacturer practices within such bilateral contingencies typically involved heavy advertising, product development, and distinctive branding.

Section A5.3 shows, for example, how the steady growth in demand for ice cream and the benefits that could be gained from generating relatively high volumes of sales shaped a greater degree of intermediation by Wall's. The company reorganised its channel structure moving away from selling directly both to consumers and to retailers (Mutuality-plus-Exchange) towards selling directly to retailers (see also Figure 172 on page 498). During the late 1960s and 1970s, the benefits of further rationalising its routes to the consumer market in contrast to the high capital expenditure required maintaining a low temperature distribution channel, occasioned further intermediation with a gradual introduction of greater reliance on a distribution tier.

Given this extent and form of coverage, the evidence shows the particular sensitivity of Wall's and Glacier behaviour to patterns of relatively high utilitarian (sales, profits, positive cash flows) and high informational (market share, profitability, return on net sales value, return on capital employed) positive and negative consequences associated with significantly large volumes of ice cream manufactured, distributed, and sold to retailers and consumers. Achieving economies of scale in production, distribution, and marketing featured highly in the evidence relating to Wall's⁵⁷⁸ and Glacier⁵⁷⁹.

Both Wall's and Glacier devoted "considerable attention to research into market trends" (Monopolies and Mergers Commission 1979, p. 168) to reduce the aversive consequences of uncertainty and of the lack of knowledge about prevailing (and future) market conditions (e.g., sales of other manufacturers). The evidence is not clear with respect to whether the members of the other categories of manufacturers extracted such detailed information on environmental conditions. In its endeavours to collect information from the secondary manufacturers to compile an estimate of market size, the

⁵⁷⁷ Refer to Section A5.3.

⁵⁷⁸ See, for example, the Ice Cream Report (1979, §79-81).

⁵⁷⁹ See, for example, the Ice Cream Report (1979, §155, §167, §171-172).

Commission noted that only 18 manufacturers provided a complete set of quantitative data⁵⁸⁰. In discussing the six more important secondary manufacturers⁵⁸¹, the Commission did not provide much evidence by way of sales, profits, and other financials suggesting a relatively lower engagement of the latter by way of extracting detailed information on market conditions. In addition, when the entire report is considered, it is clear that the largest chunk of quality information was provided by Wall's and Glacier. This is interpreted as further evidence to suggest that the behaviour of the two national manufacturers was effected by higher and richer patterns of informational rewards.

Both organizations operated through a nationwide network of retail outlets many of whom were provided with freezers to encourage the sale of ice cream and bound with conditions of outlet or freezer exclusivity. In aggregate, outlet and freezer exclusivity contracts ensured a relatively steady and high volume (depending upon weather conditions) of ice cream, allowing both manufacturers to achieve their sales and scale economy objectives. These contracts also prevented rival encroachment on entire stores or on important display space within stores and, thus, functioned as barriers to important channels to consumer exchange transactions. At consumer level, freezer and outlet exclusivity limited choice behaviour and channelled buyers into approaching the range of products and brands of a single manufacturer.

Typically, these manufacturers serviced their retailers via a nationwide system of refrigerated distribution.

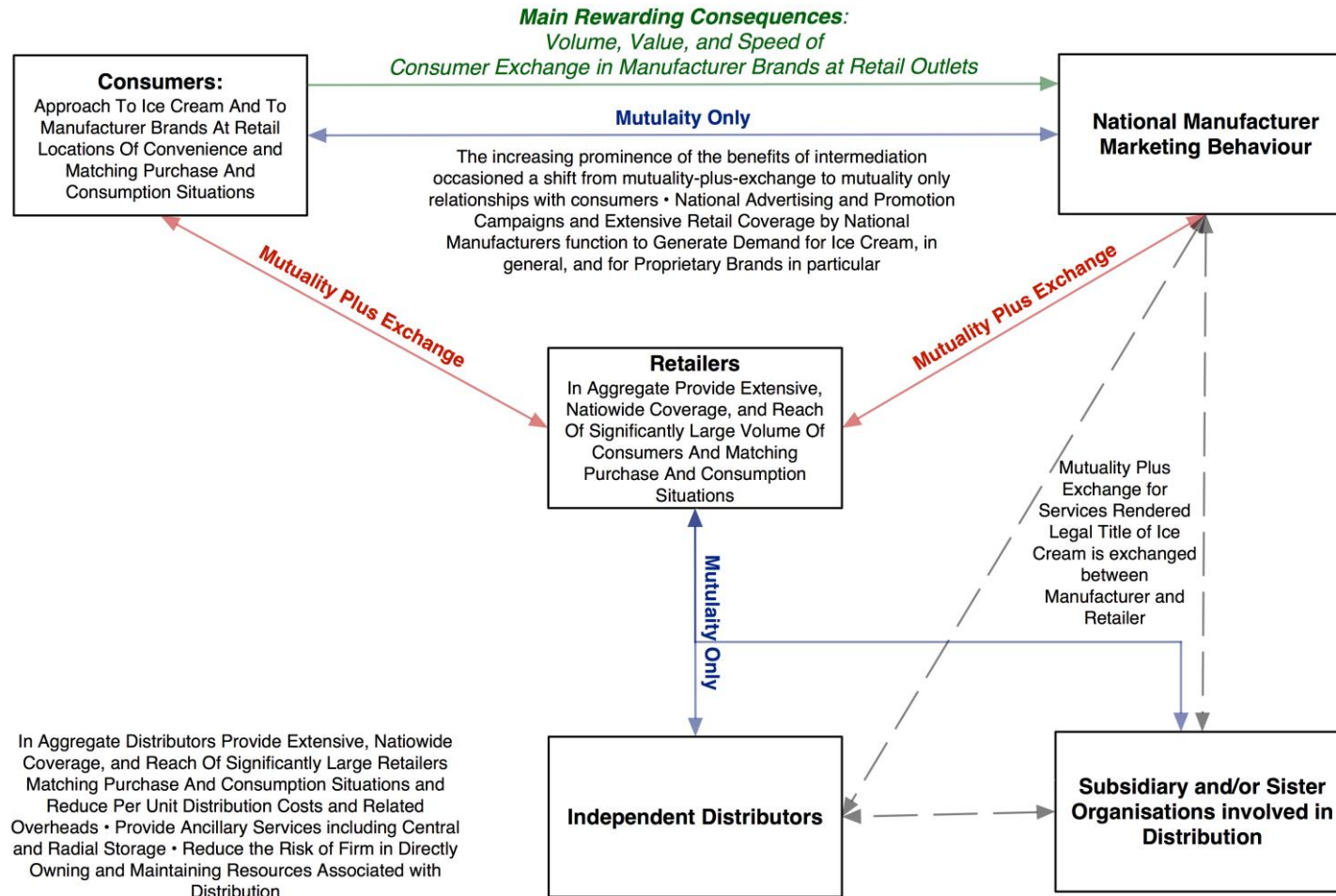
The intricate web of bilateral contingencies held by the national manufacturers is depicted in Figure 172. It appears that in most occasions the legal title of ice cream exchanged hands only between manufacturers and retailers. Distributors, when used, merely provided a logistical service either to Wall's or to Glacier, and rarely, if ever, assumed legal title to the ice cream. In the figure, these Mutuality-Plus-Exchange relationships (denoted by dashed lines) refer to the exchange involved in the logistics services rendered for money. Thus, distributors held Mutuality-Only relations with retailers. It should be noted that the agreements held by Glacier with any of the independent distributors obliged exclusivity on the part of the latter. Wall's did not have such arrangements with the exception of its sister company, SPD Ltd. Both SPD and Alpine Refrigerated Deliveries Ltd distributed exclusively the ice cream products of Wall's and Glacier respectively. Major chains of multiple stores possessed the ability to handle deliveries to their individual outlets through centralised proprietary distribution systems⁵⁸².

⁵⁸⁰ Refer to the Ice Cream Report (1979, §13 of Appendix 4).

⁵⁸¹ Refer to the Ice Cream Report (1979, §229-232).

⁵⁸² Refer to the Ice Cream Report (1979, §23).

Figure 172 – Characteristic Bilateral Contingencies of Reinforcement of National Manufacturers



Source: Adapted from Evidence in Chapters 1 to 3, Ice Cream Report (1979)

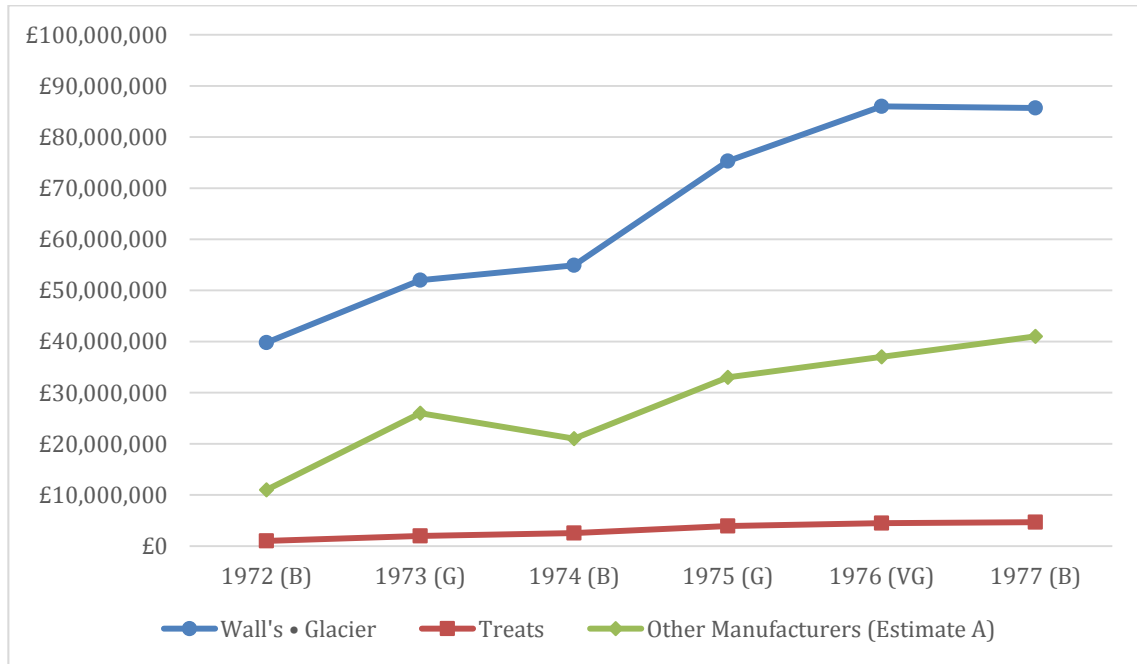
One dimension of the history and activities of the national manufacturers that does not emerge as comprehensively within the Ice Cream Report (1979) relates to the extent to which the involvement of both Unilever and JLC in the broader frozen foods industry facilitated their market dominance. With the exception of a small number of manufacturers (e.g., Ashford Creameries, Ross Foods Limited)⁵⁸³, most secondary manufacturers were only involved in the supply of ice cream. In contrast, Wall's and Glacier were subsidiaries of organizations very active in the UK broader industry of frozen foods. Both could benefit from the positive consequences of rationalisation occurring across the relevant members of Unilever and JLC respectively. Section A5.3 discusses the formation of two specialist wholesale organizations by these two groups, SPD (Unilever) and Alpine (JLC): The general benefits of significantly larger-scale and centralised refrigerated distribution (an economic rule) in conjunction with an actual (and potential) faster and stronger rate of approach by the Grocery Trade for retailing ice cream (one stimulus event of increasing prominence during the 1970s) occasioned combining facilities into a single firm (SPD Ltd) to address the combined requirements of Wall's (ice cream) and its sister Bird's Eye (frozen foods). JLC operated a similar organisation, Alpine, which delivered frozen foods for Findus (UK) Ltd and most of the Lyons Maid ice cream for JLC.

The Commission noted: "no single one of the [secondary] manufacturers ... approaches the major suppliers in the ability to compete in supplying retail outlets of all kinds with a full range of products on a national basis" (Monopolies and Mergers Commission 1979, p. 18, §43).

Figure 173 contrasts the actual NSV of Wall's, Glacier, and Treats to the estimated (upper range limit) NSV of the other manufacturers between 1972 and 1977 thus providing a perspective of the sheer size of the national manufacturers vis-à-vis other rivals.

⁵⁸³ Refer to the Ice Cream Report (1979, §231) and to Section A5.7.7.

Figure 173 – Comparison of Net Sales Values: National Manufacturers versus Other Manufacturers (1972 – 1977)



Source: Section A5.7.1D

B: Secondary Manufacturers

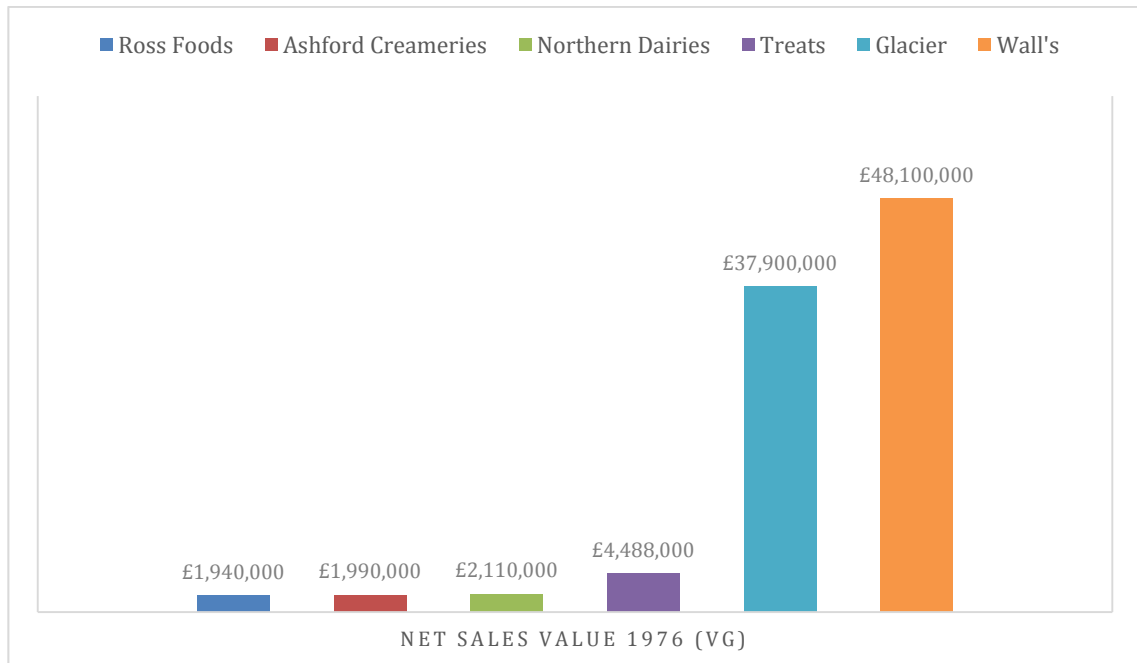
The secondary manufacturers were a category of ice cream producers composed of medium- and small-scale organisations⁵⁸⁴. Of these, the Commission identified a sub-tier of 40 medium-sized manufacturers of relative importance within the ice cream market. This tier was characterised by an array of companies varying in size and in technical and financial resources.

On the basis of NSV, Treats may be classified as a member of this second category of manufacturers. Treats' NSV was about a tenth in size of either Wall's or Glacier registering sales of nearly £4.7m in 1977. Only Dairy Tops Group was of comparable size to Treats (sales at over £3m) and the next three manufacturers each had NSV levels at under £2.5m (Figure 174). Several of these manufacturers also practiced freezer exclusivity (Table 9)⁵⁸⁵.

⁵⁸⁴ Refer to the Ice Cream Report (1979, §38). The Commission reported that it managed to identify a total of 250 manufacturers and traders of ice cream within this category from published sources and from lists provided by Wall's and Glacier. In total about 100 organizations supplied information of substance that could be used in the compilation of the investigation (§229). Section A5.7.7 provides an overview of the operations of the manufacturers falling within secondary manufacturers' category. According to the Commission, the practices of these manufacturers were particularly relevant to the investigation of monopolistic behaviour (§229). It appears that besides the recorded 250 firms, there appear to be a "very large number of very" small scale manufacturers whose relevance is besides the scope of the analysis (Monopolies and Mergers Commission 1979, p. 19, §45). For further details refer to the Ice Cream Report (1979, §45 to 46).

⁵⁸⁵ Refer to the Ice Cream Report (1979, §24, §44). See also Section A5.7.7 which provides a comparison of the levels of net sales value of all those manufacturers providing information to the Commission for 1976 and highlights whether such manufacturers provided their retail customers with freezer cabinets.

Figure 174 – Net Sales Values of Top Five Manufacturers (1976)



Source: Section A5.7.7

Table 9 – Number of Manufacturers Practicing Freezer Exclusivity (1976)

Number of Cabinets	Number of Companies	Total Net Sales Value
Over 56,000 Cabinets	2	£80,000,000
Between 2000 and 4000 cabinets	2	£3,340,000
Between 450 and 1300 cabinets	3	Cannot be calculated
Between 130 and 450 cabinets	9	Cannot be calculated
Under 130 cabinets	10	Cannot be calculated
Nil	11	Cannot be calculated

Source: Section A5.7.7

Although the secondary manufacturers followed different objectives, the Commission classified medium-sized ice cream manufacturers as being predominantly focused either on supplying and marketing their own brands with regional rather than national coverage⁵⁸⁶ or concentrating on producing “own label” ice cream for national retail chains⁵⁸⁷. In the latter case, therefore, these secondary manufacturers exerted nationwide competitive pressure within the grocery trade (and, hence take home market) irrespective their location and size⁵⁸⁸.

⁵⁸⁶ The presence of these secondary manufacturers was mostly evident in Scotland, parts of Wales, Northern Ireland, and in SW England. At the time of the investigation, these areas were less densely populated than the area wherein the original plants of both Wall’s and Glacier were located, that is, London and Manchester. The Commission did not provide any further evidence that may suggest whether the original location may have been a factor of any importance. Refer to the Ice Cream Report (1979, §43).

⁵⁸⁷ “Own label” ice cream refers to the situation where a product is manufactured by one supplier on behalf of its business customers under brand names created by these latter organizations (see, for example, the Ice Cream Report (1979, §35)). Consumers are thus unable to discern the original source of supply and the business customers probably appear to be the actual manufacturers of the product.

⁵⁸⁸ Refer to the Ice Cream Report (1979, §43).

Besides these rivals a “very large number of very small” manufacturers coexisted within the market environment. These firms included long established family operations supplying a relatively simple artisanal product range of their own development within their local area. A “considerable number” of these producers are located on the coast where higher concentrations of seasonal customers provide adequate patterns of revenues (Monopolies and Mergers Commission 1979, p. 19, §45).

When considering the market as a single and relatively homogenous environment, the Commission noted that these secondary manufacturers (especially the 40 of relative significance) contributed a substantial share of total ice cream sales⁵⁸⁹. According to Commission’s estimates for 1976 (1977), the secondary manufacturers (including Treats) accounted for a total share of the market at NSV in range between 32.5% (34.8%) and 38.3% (39.8%).

When taking into account the sales values and volumes of all the secondary manufacturers within the overall context of the entire market environment, the Commission noted that competitive pressures from and the level of encroachment by these suppliers was relatively pervasive. On average, pressures seem to have always existed for retailer attention⁵⁹⁰ and the entire report leaves an impression of a history of such pressures.

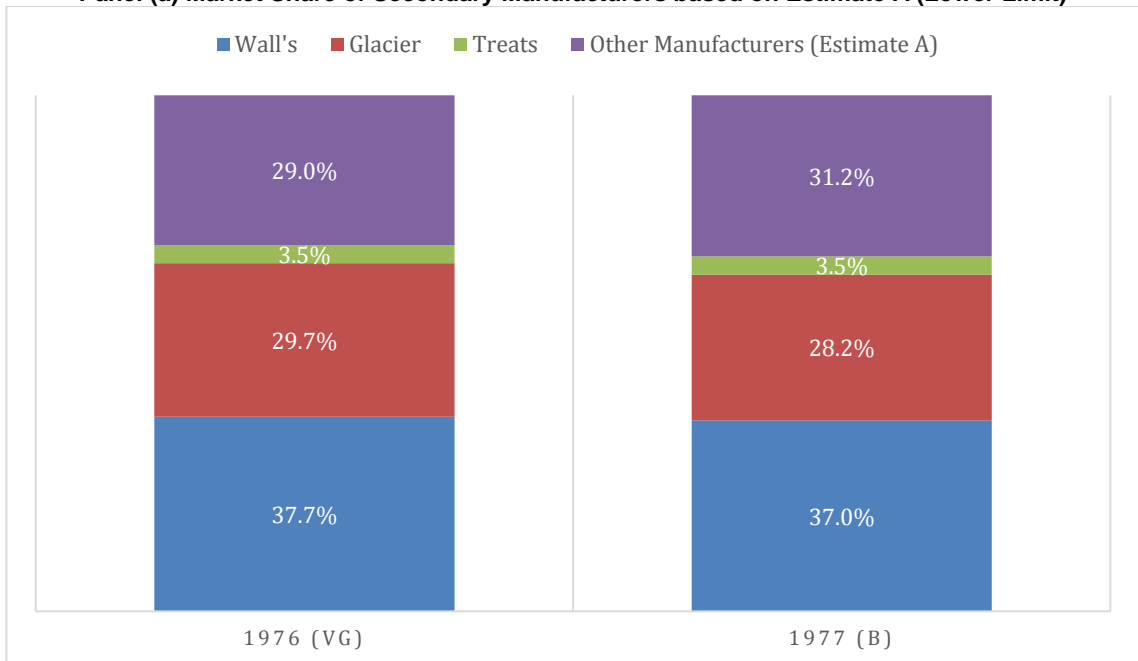
Unfortunately evidence with respect to the susceptibility of Wall’s behaviour to the aversive consequences generated by encroachment during the first generation-situation within the traditional trade for impulse products is relatively scant. The said, however, the spate of acquisitions by Glacier between 1947 and 1969 changed the competitive landscape within the traditional trade and functioned to constrain the scope of the behaviour setting within the segment (Figure 175).

⁵⁸⁹ Refer to the Ice Cream Report (1979, §43).

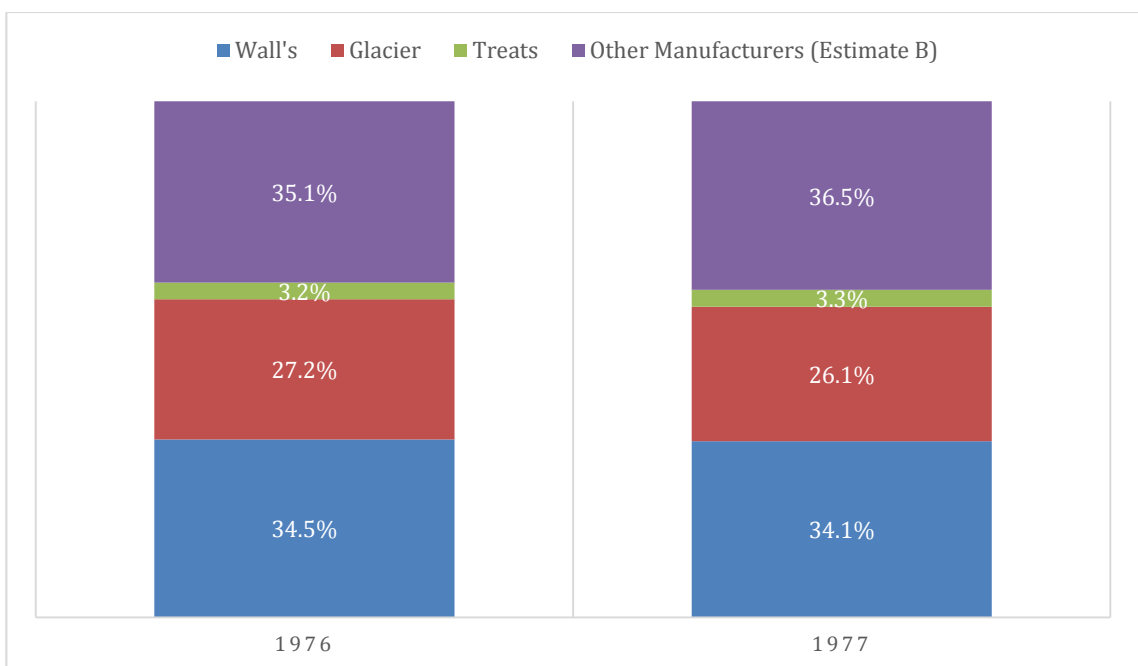
⁵⁹⁰ Refer to the Ice Cream Report (1979, §43).

Figure 175 – Comparison of Market Share of Secondary Manufacturers (Net Sales Value, 1976 to 1977)

Panel (a) Market Share of Secondary Manufacturers based on Estimate A (Lower Limit)



Panel (b) Market Share of Secondary Manufacturers based on Estimate B (Upper Limit)



Source: Section A5.7.1E

During this first generation-situation, Glacier concentrated acquiring relatively large manufacturers who were involved in the production of ice cream for impulse and catering purchase and consumption (Table 10). By 1963, for example, Eldorado, a nationwide contender, was absorbed by Glacier and its brands together with those of Nielson were incorporated under the Lyons Maid brand umbrella⁵⁹¹.

⁵⁹¹ See Section A5.11.

Table 10 – Acquisitions of and Mergers by JLC (1947 – 1973)

Year	
1947	Acquisition: Ice cream business of Walker Dairies Limited a substantial manufacturer in the Liverpool area.
1951	Acquisition: Glacier Foods Limited a manufacturer of ice lollies in Maidenhead.
1954	Acquisition: Massarellas Supplies Limited a substantially large manufacturer based in Doncaster.
1959	Franchise Agreement: Exclusive manufacturing and distribution rights of Mister Softee and Tastee-Freez.
1962	Acquisition: Nielson (Ice Cream & Frozen Foods) Ltd from Associated British Foods. Associated exits the ice cream industry.
1963	Merger: Eldorado Ice Cream Company Limited, a subsidiary of Union International Limited (UIL) and a major national rival to Glacier and Wall's. In addition, UIL, JLC, and Associated Fisheries merged their respective frozen food interests to form Fropax Eskimo Froot Limited to compete with Bird's Eye (Unilever) which dominated the frozen food industry. Alpine Refrigerated Deliveries was activated for distribution for Fropax and for Glacier.
1965	Acquisition: Bertorelli's (London) Limited a manufacturer of high quality ice cream targeting the upper end of the market and served mainly in catering establishments.
1969	Acquisition: Tonibell Manufacturing Co Limited was acquired for its range of soft and hard ice creams and its retail network of mobile sites, static outlets, and ice cream parlours.
1973	Acquisition: Midland Counties Dairies Ltd located in Birmingham acquired for its strong market share in the Midlands and its distribution network.

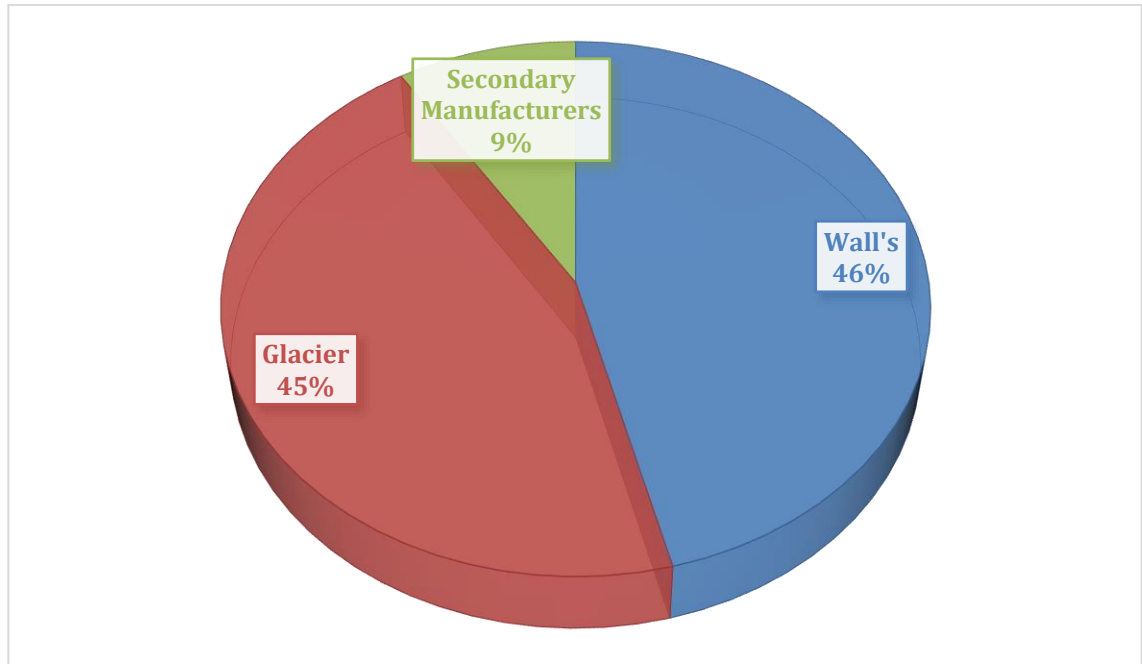
Source: Section A5.11

From the perspective of secondary manufacturers, the scope of the competitive behaviour setting within the traditional trade became relatively closed, as Glacier and Wall's expanded their operations and barricaded retail outlets as routes to consumer ice cream expenditure with freezer and outlet exclusivity. To the extent that the share of the secondary manufacturers of the segment comprised of CTNs and similar outlets remained relatively small⁵⁹². If the claims by Wall's in the Ice Cream Report (1994, p. 18, §3.19) were true, then thirty-four secondary manufacturers held less than a 10% share of the traditional trade among them (Figure 176)⁵⁹³. Therefore, Wall's would have been more sensitive to the actions by Glacier than to those of other manufacturers within the Traditional Trade.

⁵⁹² Refer to the Ice Cream Report (1979, §44). The distinctions noted and used by the Commission between the two markets appear to contradict arguments put forward by industry participants that the ice cream market was to be considered, in broad terms, as a single market. See also Section A5.2.3.

⁵⁹³ See also Section A5.2.3.

Figure 176 – Market Shares of Impulse Market Provided by Wall's (Net Sales Value, 1976)



Source: Ice Cream Report (1994, p.18, §3.19)

On the other hand, Wall's sensitivity to competition emerges clearly within the emergent grocery trade already in the 1960s. Encroachment therein continued fiercely throughout the second generation-situation. As shall be seen, Wall's was significantly more vulnerable to encroachment in grocery trade due to several differences in the features of this segment including a significantly larger number of retailers investing in their own refrigerating equipment and, hence, a decreased likelihood of tying these retailers in with exclusivity. This meant that the behaviour setting scope of the grocery trade segment was populated by a greater number of competitive offerings and retailers faced a relatively more open setting⁵⁹⁴.

The evidence also demonstrates a developed sensitivity to rival encroachment within the traditional trade during the 1970s. For example, Wall's claimed that one of the risks of its product development efforts arose from regular imitation of its products by other manufacturers (especially Glacier) and the relatively short time frame to gain profits from successful variation⁵⁹⁵. Wall's claimed that, according to its market research, the secondary manufacturers supplied some 55% of consumer expenditure within the take-home segment. And, the share of their take home sales within CTNs rose from 8.5% (1972) to about 15.45% (1977).

As the Commission pointed out, however, despite the reduced importance of the CTN segment in relation to other segments (and the resultant general decline of the traditional trade) and this level of encroachment from secondary manufacturers, both Wall's and Glacier retained a leadership position of impulse product supply among CTNs (as the locus wherein most impulse in-hand products were sold)⁵⁹⁶.

⁵⁹⁴ See Section A5.4.3.

⁵⁹⁵ See Section A5.4 and the Ice Cream Report (1979, §336, §345-348).

⁵⁹⁶ Refer to the Ice Cream Report (1979, §39).

It thus seems important to further qualify the Commission's conclusions and emphasise the likelihood that the substantial share of ice cream sales by the secondary manufacturers was a phenomenon that was located predominantly at the intersection of the grocery and take home market segments, and that it occurred during the latter half of the 1960s. As shall be seen, the phenomenon emerged from (a) the developments in the frozen food industry, (b) changing consumer habits, and (c) probably, as a response to the contraction effects on the behaviour setting scope faced within the traditional trade by the widespread and highly diffused adoption of exclusivity contracts among retailers therein.

On a more general note, the presence of secondary manufacturers was an aversive stimulus signalling the relative stricture of the behaviour setting scope. Saliency of the stimulus appears to have also depended on the rate and strength of encroachment to a given segment with increased strengths signifying increased saliency depending upon the importance of the segment and the learning history of the organisation.

A5.2.7 Distribution: Activity and Market Organisation

An intermediate stage existed wherein ice cream was transported at low temperatures from manufacturing facilities to a central storage point located either on the factory premises or elsewhere to the various retail outlets. Distribution generally appears to have occurred in two stages: in the central distribution stage, relatively large or bulk vehicles transported the ice cream from the factory to central and/or subsidiary cold storage depots. The second stage, radial distribution, involved relatively smaller refrigerated vans transporting ice creams from the various centralised/subsidiary depots directly to the storage facilities of the larger retailers or to the outlets themselves⁵⁹⁷.

Distribution of ice cream from manufacturing to retail, therefore, required access to either a proprietary or a third-party network of cold storage and depots and specialised refrigerated vans that provided manufacturers with timely route to their local, regional, and national spheres of operation and that retained the integrity of product quality while maintaining per unit logistical costs of this relatively low value product to a minimum⁵⁹⁸. As already noted in Section A5.2.5, the requirement for refrigeration qualified the behaviour setting scope limiting the range of possible practices: firms had little choice but to either invest in cold storage and specialised refrigerated distribution vehicles themselves or enter into arrangements with third party specialised distributors⁵⁹⁹.

Until the 1970s, the Commission noted that two salient aversive antecedent events further constrained the market behaviour of all manufacturers: the limited refrigerated space at the more prominent and significantly more numerous small retail outlets (namely, CTNs) coupled with the unpredictability of demand generally compelled manufacturers to supply their retail customers directly⁶⁰⁰.

⁵⁹⁷ Refer to Chapters 1 to 3 of the Ice Cream Report (1979).

⁵⁹⁸ Refer to the Ice Cream Report (1979, §23).

⁵⁹⁹ Refer to the Ice Cream Report (1979, §23). See also Section A5.2.5.

⁶⁰⁰ Refer to the Ice Cream Report (1979, §23).

Manufacturers distributed their products via a range of contractual arrangements. National and secondary manufacturers operated a mix of owned and hired assets (central and subsidiary storage depots, bulk vehicles, and small vans) and engaged the services of independent distributors (Table 11)⁶⁰¹.

In contrast to Wall's, Glacier bound its wholesalers and independent distributors Table 11 via exclusive distribution arrangements precluding them from selling ice cream other than the Lyons Maid brand⁶⁰².

Table 11 and Table 12 present a comparison of the distribution networks of Glacier, Wall's, and other secondary manufacturers. Clearly, the distribution networks of the two national manufacturers were relatively vertically integrated and significantly larger than those of their closest rivals.

⁶⁰¹ Small-scale manufacturers operated in similar fashion within their locality and very rarely engaged with wholesalers. Some of these also operated their own retail outlets (§45). According to the Frozen Foodstuffs Report (1976, §55), a number of organizations provided specialized refrigerated transport services besides contract distribution. The Ice Cream Report (1979, §38) appears to imply that these specialised transport services were a relatively recent addition to the distribution services available.

⁶⁰² Refer to the Ice Cream Report (1979, §187). The conditions of the arrangements entered into by Wall's are discussed in detail in Section A5.4.5.

Table 11 – Comparison of Distribution Network of Wall’s and Glacier

Name of Company	Description of Distribution to Retailers
<p>Wall’s (§85-86, §88) and Appendix 5, Section A5.3)</p>	<p>Operated two production facilities in Acton and in Gloucester.</p> <p>Once ice cream is manufactured, the products were transferred to a cold store within the factory to a third party cold store for quality control inspection (products are held for 48 hours).</p> <p>Products were delivered either (a) directly from cold storage to customers (certain grocery, cash and carry, or home freezer centres) or (b) to one of the 15 main or 21 subsidiary depots throughout the country. SPD owned 6 of these depots. The function of depots was to retain inventory of ice cream, compose the orders of customers, and deliver these orders. In addition to these functions the main depots also provided invoices, prepared stock records, and fulfilled order replenishment. Wall’s ran a fleet of 348 vehicles.</p> <p>Distribution was generally made directly by Wall’s to retailers via SPD Ltd a wholly owned subsidiary of Unilever which also handled the distribution of frozen food products manufactured by Bird’s Eye, another subsidiary of Unilever (see also Section A5.3.4 and the Frozen Foodstuffs Report (1976, §54, §104-105)).</p> <p>By 1976, an increasing part of these direct deliveries was shifted towards independent distributors and cash and carry organizations (from the Frozen Food Stuffs Report (1976, §54, §104-105), it appears that independent distributors took over those retailers which were less economical for SPD to run.) Some 5000 small retail outlets were served in this way. These distributors also provided backup facilities during summer peaks to the customers of Wall’s.</p> <p>The main area of operations was national with Wall’s supplying 72,330 retail outlets of various types in 1967 compared to 57,760 outlets in 1976.</p>
<p>Glacier (§16, §141, §160-161, §176-179) and Appendix A5.11)</p>	<p>Glacier operated factories in Barking, Birmingham, Liverpool, and Middlesex.</p> <p>The distribution network of Glacier was somewhat more complicated by the fact that it retained two separate networks, one for its principal Lyons Maid brands and another for its Midland Counties brands and other secondary brands.</p> <p>In similar fashion to Wall’s, Glacier delivered all products branded as Lyons Maid directly to retailers through a JLC subsidiary, Alpine Refrigerated Deliveries. Save for certain agreed upon exceptions, Lyons Maid exclusively used the services of Alpine.</p> <p>Alpine utilised 84 bulk and 485 radial vehicles.</p> <p>Upon manufacture, ice cream was transported from the cold stores on factory premises and then onward to retailers, wholesalers, and even independent distributors. The latter were long standing distribution customers of Glacier and covered</p>

Name of Company	Description of Distribution to Retailers
	<p>retail outlets located in certain areas of the UK (North and South West Scotland, South West Wales, and West England).</p> <p>Midland Counties brands were distributed through a separate system because the lines could not be “practically added to those already handled by Alpine” (Monopolies and Mergers Commission 1979, p. 66). Ice cream was transported from the Birmingham factory via a central depot at Wolverhampton to a chain of seven depots in the North of England and the Midlands. The London depot was utilised for Glacier’s catering product ranges.</p> <p>The main of area of operations was national. By 1976, JLC brands were available in 55,000 retail stores in all the retail segments and through 2,800 mobile vans.</p>

Table 12 – Comparison of Distribution Networks of Secondary Manufacturers

Name of Company	Description of Distribution to Retailers
Treats (§131-132)	Treats had no direct exchange relationships with CTNs. It channelled its products from a centralised depot in Leeds via five subsidiary depots using its own fleet operating its own refrigerated bulk vehicles to deliver its products to wholesalers, freezer centres, and larger supermarkets. The company engaged the services of four appointed distributors (who did not have exclusive rights to their geographical area of operation) and secondary wholesalers to all types of retail outlets (including mobile vendors). Ross Foods was one of these distributors because the organisation had national coverage. The organisation handled about 30% of the business of Treats (especially ice lolly products). 35% of Treats' products were sold through mobile vendors and 57% through home freezer centres. 60% of volumes sold were mostly bulk items. The main area of operation was national.
Northern Dairies (§231)	Central storage facilities at factory premises in Belfast. Subsidiary depots across Northern Ireland owned by other divisions of its parent company. Owned depots in Glasgow and in Dublin, Ireland. Operated fleet of shop delivery vans from central and subsidiary storage to 100 supermarkets, 40 home-freezer centres, 1500 grocery stores, 1200 CTNs, and 500 catering outlets. The main of area of operations was Northern Ireland, the Republic of Ireland, and Scotland.
Ross Foods (§231)	Ross Foods was a subsidiary of Imperial Foods the second largest supplier of frozen foods in the UK. The organisation has a distribution fleet with national coverage (§131). Owned a distributive organisation with products transported from factory premises at Henley-in-Arden either to its own depots or directly to the depots of major supermarket chains for their own distribution to their outlets or to wholesalers. The main area of operations was the North of England and the Midlands.
Creamery Fare Continental Ice Cream (§231)	Creamery Fare operated an owned fleet of small light vehicles for deliveries in close proximity to its factory premises and hired heavy transport for longer hauls. Supplied supermarkets, small retailers, catering establishments, freezer centres, and wholesalers. The main area of operations was the London and the South Eastern area.
Hortons Ice Cream Company (§231)	Operated a total of six storage depots in various locations across Southern England. Supplied catering outlets, numerous small retail outlets, mobile vans, freezer centres, and cash and carry and distribution wholesalers. Together with a franchisee made deliveries directly to customers using its own fleet of delivery vehicles. The main area of operations was South and South West UK.

Establishing a nationwide refrigerated distribution service involved significant capital expenditure. In addition, operating refrigerated depots and vehicles involved high overheads. Hence, significant volumes were required to achieve economies of scale to make the investment tenable.

Among the national manufacturers, distribution operations were expanded organically (as was largely the case with Wall's) or via mergers and acquisitions (as was generally the case with Glacier; see for example, Table 10)⁶⁰³.

As stated already, the developments in frozen food distribution occurring in the 1970s relaxed the stricture of the market setting scope. Besides providing smaller manufacturers with opportunities for entering new and existing market segments thereby broadening their business, wholesalers began alleviating the burdens of the national manufacturers by taking up those outlets that otherwise would have been uneconomical to serve⁶⁰⁴. This said, however, by the end of the investigation period "frozen food wholesaling [had] not developed to a degree that [enabled] ice cream to be stocked and delivered all over the country to large numbers of retail outlets" (Monopolies and Mergers Commission 1979, p. 10). And, the proportion that [was] not distributed to retailers direct by the manufacturer [was] still relatively modest" (Monopolies and Mergers Commission 1979, p. 10)⁶⁰⁵. Both Glacier and Wall's registered their intentions with respect to further improving their distribution networks.

A5.2.8 Retailing: Activity and Market Organisation

A nationwide network of retail outlets functioned as a critical route to generating exchange in a manufacturer's brand repertoire on a relatively large scale. The network had to have proper refrigeration in order to preserve the quality of the product and 'cold' space to maintain adequate stocks of a wide variety of ice creams. Variety was critical to shaping and maintaining consumer behaviour within traditional *and* grocery trade.

Figure 177 presents a convenient and broad conceptualisation of the UK ice cream market during the mid-1970s. The figure is drawn in conclusion from the considerations in Section A5.2.3 regarding the classification of consumer situations, products categories, and retail outlet groups, the degrees of overlap between situations and categories, the lack of correspondence between product and retail outlet categories, and, the difficulties in estimating market segment sizes, and other evidence presented in the Ice Cream Report (1979).

⁶⁰³ Refer to Section A5.3 and Section A5.11.

⁶⁰⁴ Refer to the Ice Cream Report (1979, §177-178).

⁶⁰⁵ See also Glacier's more detailed explanations on the subject of distribution in paragraph 351 of the Ice Cream Report (1979, pp. 127-128).

Figure 177 – Analytically Distinct Retail Markets

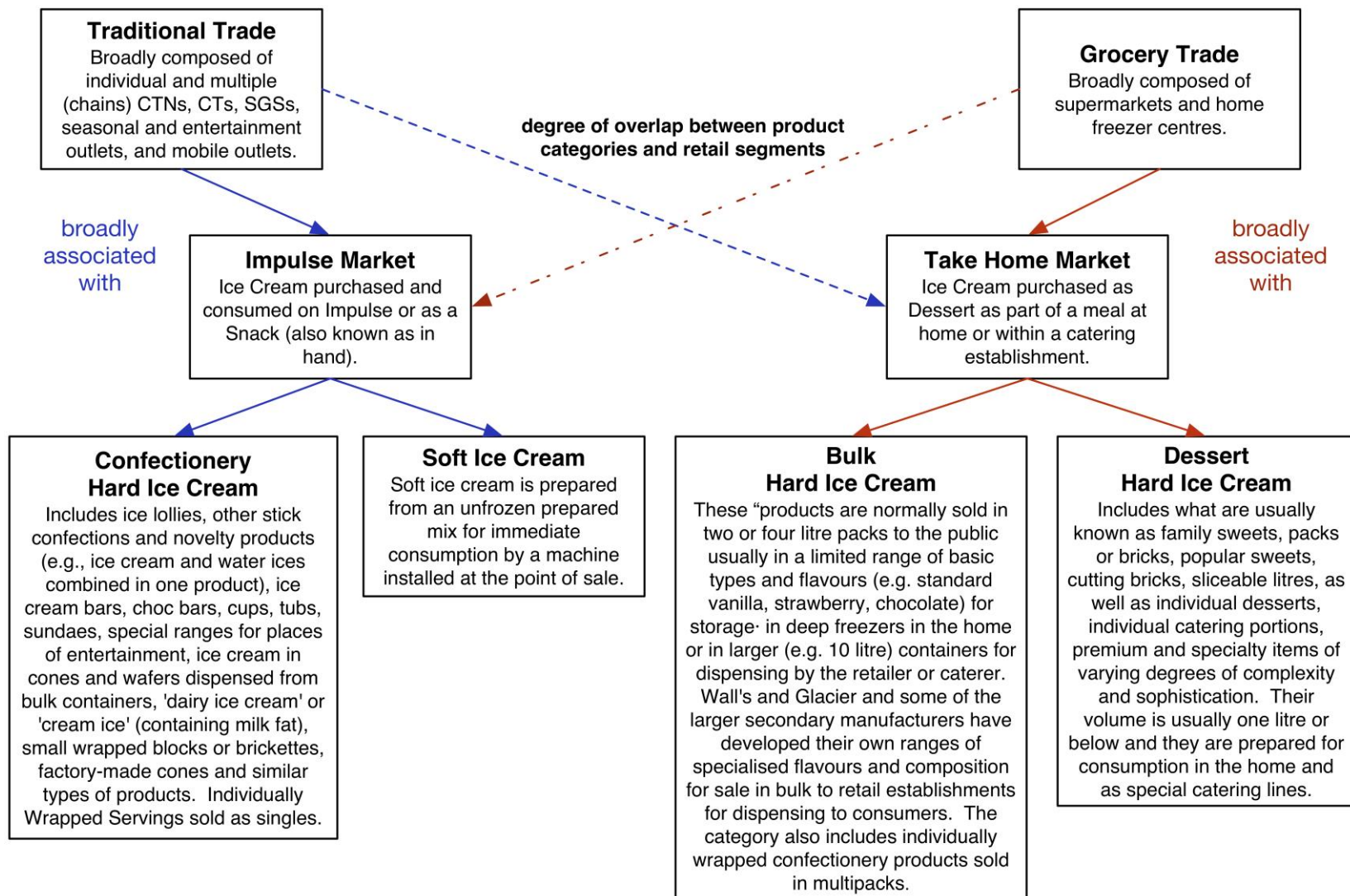
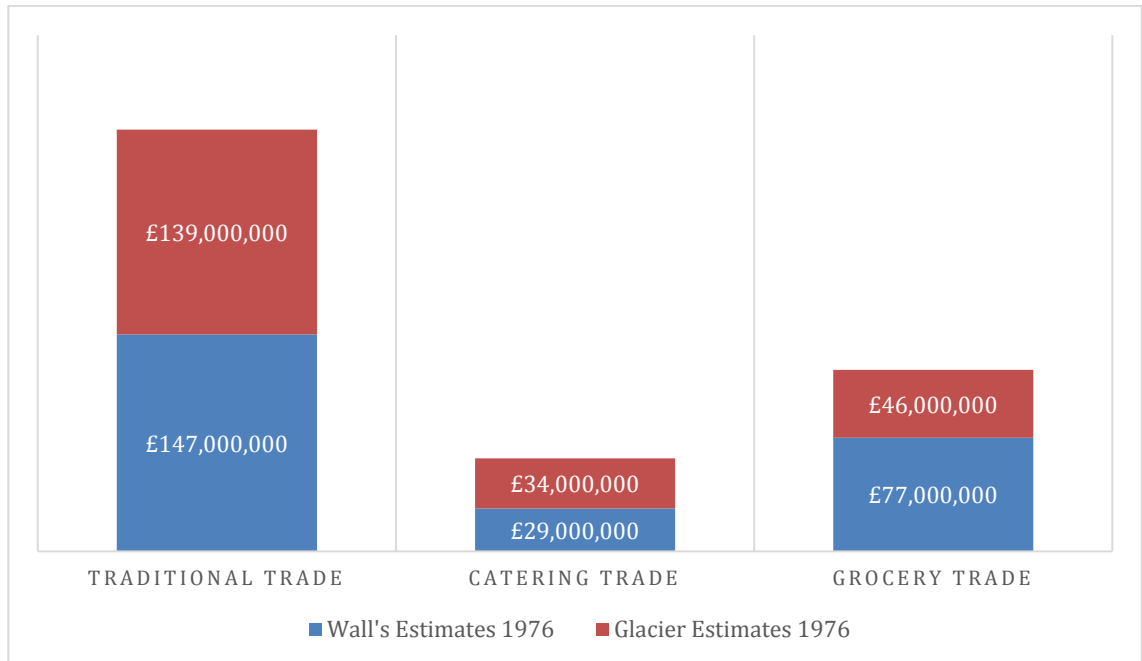


Figure 178 presents an approximation of the size of the traditional, grocery, and catering trade at consumer market prices in 1976.

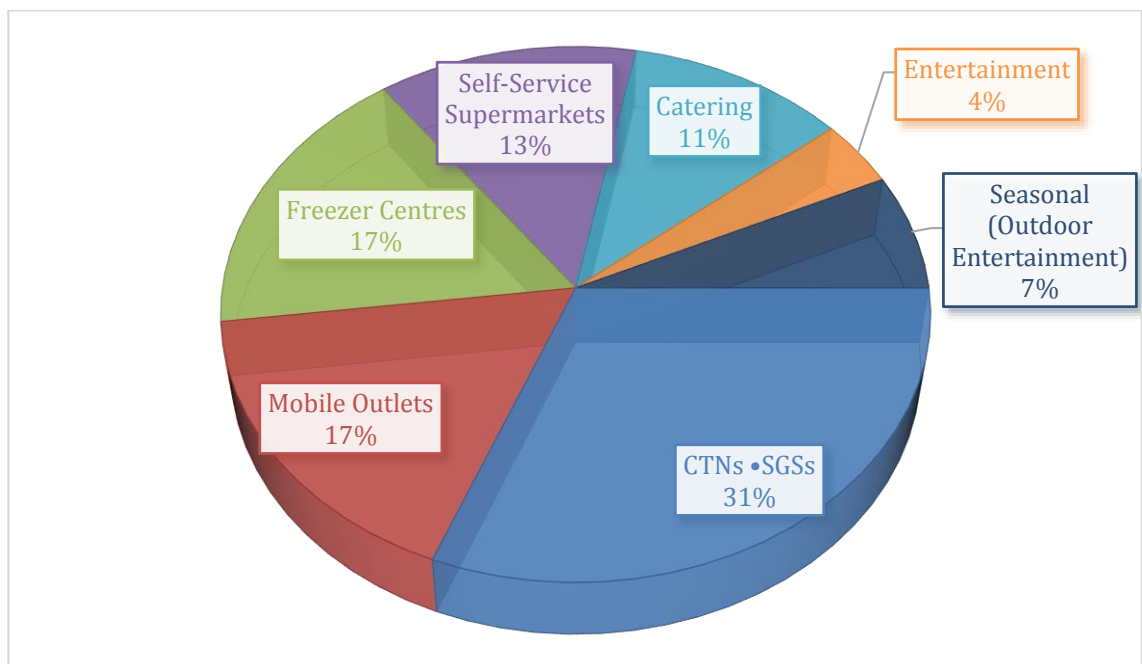
Figure 178 – Estimated Size of the Traditional, Grocery, and Catering Trade Segments at Consumer Market Prices (1976)



Source: Section A5.7.3B

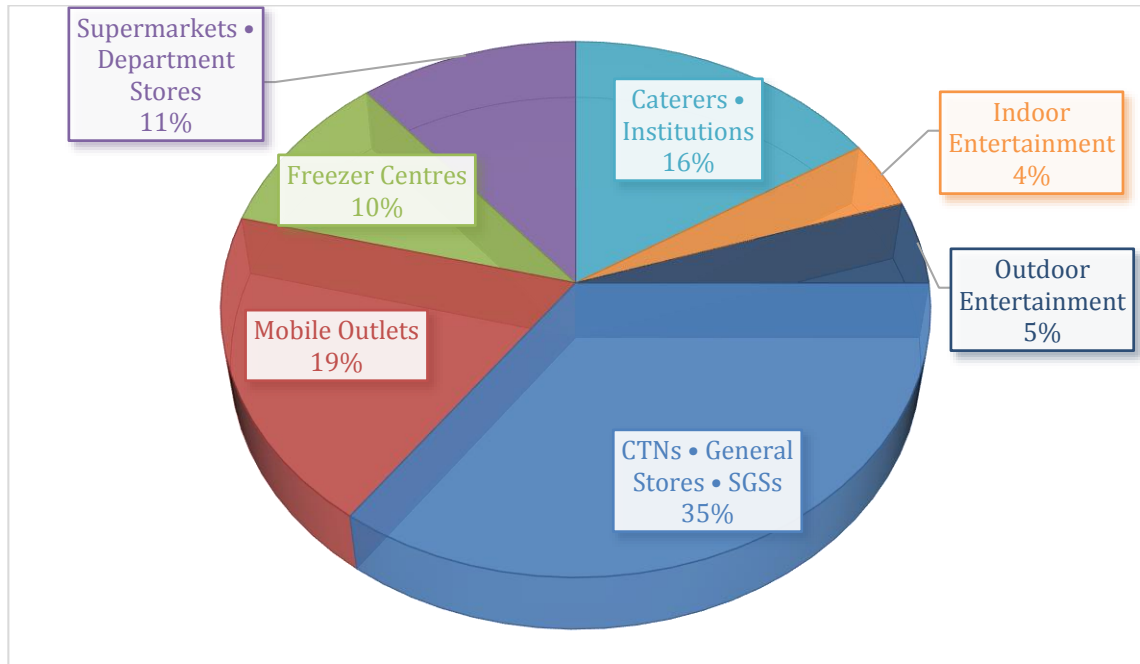
Figure 179 and Figure 180 contrast the percentage share each outlet type was estimated to contribute to the market.

Figure 179 – Estimated Percentage Share of Individual Outlet Types by Wall's (at Consumer Market Prices, 1976)



Source: Section A5.7.3A

Figure 180 – Estimated Percentage Share of Individual Outlet Types by Glacier (at Consumer Market Prices, 1976)



Source: Section A5.7.3A

Most importantly, the conceptualisation brings to the fore the trends emerging (changes to the rules of the game) during the 1970s and the significant differences in conducting business within the two distinct behaviour settings composing Traditional and the Grocery Trade. Important trends included: (a) growth in the rate of domestic refrigeration; (b) changes in consumer purchase patterns favouring self-service stores and one stop shopping; (c) the decline in numbers of certain smaller neighbourhood retail outlets (including CTNs) in favour of larger supermarkets and home freezer centres; and, (d) trends in urban development. Notable distinctions of the two behaviour settings arise from differences in the business models, size, and bargaining power of the retailers that served the two broad categories of consumer situations. For example, the grocery trade was relatively more homogenous than the traditional trade and populated by relatively larger price conscious organisations with greater bargaining power (e.g., supermarket chains), demanding ice cream packaged in bulk (two litre packs and higher), and relatively less sensitive to branding (to the extent that most major grocery chains demanded unbranded ice cream for rebranding purposes)⁶⁰⁶. In addition the net positive utilitarian and informational rewards contingent upon signing an exclusivity contract offered by the national manufacturers were significantly diluted within the grocery trade segment because most supermarkets and home freezer centres had their own refrigerating equipment⁶⁰⁷. Indeed, the “most important development of the 1970s” was the emergence of supermarkets and freezer centres and their gradual rise to prominence within the market (Monopolies and Mergers Commission 1979, p. 15). And, as noted earlier, these changes occasioned and facilitated relatively inexpensive access for the secondary manufacturers⁶⁰⁸.

⁶⁰⁶ Refer to the Ice Cream Report (1979, §29-40). These themes are explored in further detail across Sections A5.3 and A5.4.

⁶⁰⁷ Refer to the Ice Cream Report (1979, §39) and Section A5.2.6.

⁶⁰⁸ Refer to the Ice Cream Report (1979, §37). See also Section A5.2.6.

Both Wall's and Glacier faced possible threats given their decades long reliance on and investment in heavily branded quality ice cream and in marketing, distributing, and manufacturing products based on very high volumes of consumer and retailer approach. Wall's, for example, remarked that "its business was built up to serve consumer demand through outlets in the traditional trade (and it still relied heavily on this trade for the distribution of confectionery products)" (Monopolies and Mergers Commission 1979, p. 29, §72). In 1976, Wall's sold 53.2% of its total net sales value through the traditional trade, 29% through supermarkets and home freezer centres, and 17.8% to other outlets including catering wholesalers. Glacier sold 54% of its total NSV to small retail stores and similar sized outlets and mobile vendors. 20% of NSV was sold to supermarkets, home freezer centres, and wholesalers⁶⁰⁹.

Overall, the practices emitted by rivals and retail customers in the relatively more open grocery trade behaviour setting signalled a significant threat: the trading conditions of the grocery trade were completely unlike those within the traditional trade where sales were rendered stable, unassailable and guaranteed through exclusivity arrangements (bar weather fluctuations). The significance of the threat may be observed from the fact that both Wall's and Glacier had over 50% of their turnover by NSV tied in CTNs and similar outlets in contrast to 29%/20% in supermarkets and home freezer centres. Glacier's position was worse off because (a) the firm underestimated the importance of the sector and entered late⁶¹⁰, (b) it did not develop the sales of its bulk ice cream products between 1972 and 1976⁶¹¹, and, (c) it faced severe problems that resulted in its inability to take advantage of higher consumer demand for ice cream during the exceptionally good 1975 and 1976 seasons⁶¹².

In contrast, Wall's claimed to have "pioneered the development of the grocery trade" (Monopolies and Mergers Commission 1979, p. 27, §67) in the early to mid-1960s. Market development was prompted by a succession of bad summers and the introduction of a purchase tax both of which set the market back severely⁶¹³. Since then, Wall's appears to have engaged directly and continuously in the development of the grocery trade segment.

Until the 1970s, however, supermarkets and freezer centres were less prominent than the smaller independent CTNs and SGSs (traditional trade)⁶¹⁴. As shall be detailed in Section A5.3, historically CTNs and SGSs were the most important segment to both national manufacturers: the Commission pointed out that establishing a nationwide network of these outlet types through the provision of refrigerated cabinet was "the major marketing development of the earlier post war years" (Monopolies and Mergers Commission 1979, p. 13). The CTN and SGS segments and the traditional trade in general were a

⁶⁰⁹ Refer to Section A5.7.8.

⁶¹⁰ Refer to the Ice Cream Report (1979, §161).

⁶¹¹ Refer to the Ice Cream Report (1979, §264).

⁶¹² Refer to the Ice Cream Report (1979, §263). The problems mentioned by the Commission related to industrial action in 1975 led to the dislocation of Glacier brands at various storage depots, and, consumer resistance to 1976 price increases that made Glacier brands than those of Wall's.

⁶¹³ Refer to the Ice Cream Report (1979, §66).

⁶¹⁴ Refer to the Ice Cream Report (1979, §29-40).

relatively heterogeneous and fragmented sector populated by a large number of disparate outlets. Activating and nurturing this category facilitated increasing access to a significant mass of consumers for the two national manufacturers despite the relative small order size of individual retailers⁶¹⁵.

According to Wall's the CTN/SGS sector accounted for 31.2% of the total market at consumer prices (Figure 179) while Glacier estimated the share at 35.1% (Figure 180). The Commission estimated a total of over 150,000 outlets at which ice cream was available for immediate consumption. Of these 85,000 were small shops of which around 40,000 were either CTNs or CTs⁶¹⁶. In addition, retailing the product during 1976/1977, only contributed 1% to 2% of total the turnover of individual CTNs⁶¹⁷. Wall's claimed that the average value of sales to CTNs stood at £530 in 1977⁶¹⁸.

This made CTNs and SGSs particularly prone to entering exclusivity arrangements: the positive utilitarian and informational consequences of entering into exclusivity arrangements for CTNs and SGSs included: (a) the removal of high capital expenditure involved in owning the freezer, (b) the removal of costs involved in maintaining the owned freezer, (c) the reduction of the risk of remaining without stock since manufacturers may have given tied-in retailers priority during peak seasons, and (d) the reduction in the costs resulting from spoilage and damage to ice cream inventories when freezers broke down (with exclusivity, although retailers were not liable for damage they were advised to issue an insurance). Given that most of the small-sized retail outlets welcomed exclusivity, it would appear that these positive consequences far outweighed the costs of investing in proprietary freezers to the extent that it was argued that in the absence of exclusivity many smaller retailers would have ceased offering ice cream⁶¹⁹. To Wall's and Glacier offering exclusivity arrangements resulted in a significant, protracted (between 3 to 5 years on a renewable basis), and protected source of retailer exchange transactions which fuelled and sustained the practice itself and following further scale economies in marketing, distribution, and production. The sources of sales were relatively unassailable by virtue of the legally enforceable contingencies that bound consenting parties.

On such a large scale, the aggregate utilitarian and informational rewards of offering exclusivity (high volumes enabling large scale operations and scale economies in marketing, distribution, and production; market share; real growth and so on) shaped and maintained the practice among manufacturers over several decades. Both Wall's⁶²⁰ and Glacier⁶²¹ noted that the segment was more profitable. However, outlets traditionally associated with the retail of

⁶¹⁵ Refer to the Ice Cream Report (1979, §29-40). These themes are explored in further detail across Sections A5.3 and A5.4. It is also reasonable to assume that most of the CTNs and small outlets were dispersed across the UK roughly following the geographical distribution of the general population. Wall's, in fact, commented on the benefits of pursuing economies of scale given it faced geographically dispersed retail demand occasioned by the pursuit of nationwide brand coverage (Monopolies and Mergers Commission 1979, §81).

⁶¹⁶ Refer to the Ice Cream Report (1979, §16-17).

⁶¹⁷ Refer to the Ice Cream Report (1979, §17, §297).

⁶¹⁸ Refer to the Ice Cream Report (1979, §17 fn. 1).

⁶¹⁹ Refer to Section A5.1 and Section A5.9.1.

⁶²⁰ Refer to the Ice Cream Report (1979, §72).

⁶²¹ Refer to the Ice Cream Report (1979, §161).

confectionery and impulse items (especially CTNs and SGSs) registered declines in ice cream sales during the 1960s and especially in the 1970s due to a variety of reasons including “major” changes in consumer purchase behaviour patterns (Monopolies and Mergers Commission 1979, p. 16). The trends also reflected (or caused) the already noted shift towards greater proportion of purchases of bulk ice cream.

As such the transformation of prevailing retailing contingencies (changing rules of conducting business, changing retailer reinforcement criteria) appeared to have been the more important problem being faced by both Glacier and Wall’s during the time of the investigation. Section A5.3 and A5.4 examine these contingencies in greater detail.

A5.3 The Learning History of Walls and Developments of the Ice Cream Trade: 1920s to *circa* 1969

The supply of ice cream is a “very old established trade” (Monopolies and Mergers Commission 1979, p. 12) and pre-hardened and individually wrapped factory-made ice cream for national distribution was first mass-produced in the UK during the period between WWI and WWII⁶²².

The “modern history of the industry” (Monopolies and Mergers Commission 1979, p. 26) is inexorably tied to the early entrepreneurial drives of Wall’s.

First, the mass production of ice cream within the UK was pioneered by Wall’s in 1922 via the installation within its existing Acton facility of an apposite small manufacturing plant acquired from the US. According to the Commission this marked a “major development in the modern history of the ice cream industry” (Monopolies and Mergers Commission 1979, p. 26). The Commission records that the move into the ice cream market was triggered to counter the cycle of seasonality T Wall and Sons experienced in their original business, the pork trade.

Second, The Commission pointed out that “the business developed on the basis largely of Wall’s *own designed production and distribution equipment*” (Monopolies and Mergers Commission 1979, p. 26). This occurred since at the time the infrastructure necessary to support the mass production, mass distribution, and the mass retail of branded ice cream for its mass purchase and consumption did not exist⁶²³. During this period of the history of the industry, ice cream manufacturing was populated by family businesses producing an artisanal item⁶²⁴ available for purchase and consumption in small retail shops, cafes, restaurants, kiosks, and static or mobile outlets located in close proximity to the place of manufacture⁶²⁵.

⁶²² Refer to the Ice Cream Report (1979, §29).

⁶²³ Refer to the Ice Cream Report (1979, §29).

⁶²⁴ Refer to the Ice Cream Report (1979, §45-46).

⁶²⁵ Refer to the Ice Cream Report (1979, §9, §29, §45, §63). The evidence states that early in the history of the market some vendors plied their trade selling artisanal ice cream and serving consumers from hand carts (§29).

Third, the entry of Wall's into the trade and the subsequent early developments marked **"the first time in Britain** that ice cream had been factory-made, pre-hardened, and wrapped for mass distribution, branded and retailed through a network of outlets (Monopolies and Mergers Commission 1979, p. 26, emphasis added).

Fourth, Wall's ice cream achieved the status of a national brand very early in the history of the trade following a strategy that emphasised organic growth. Wall's already had "a market share and a presence in retail outlets of major proportions" by the start of World War II (Monopolies and Mergers Commission 1979, p. 26).

In contrast, although JLC also entered the market in the 1920s, it only achieved a brand of national standing comparable to Wall's through the acquisition of Eldorado and Nielson, in the early 1960s⁶²⁶. The business model of JLC was also geared towards mass consumption via mass production, distribution, and national coverage retailing. However, its route to accomplish this model was characterised by a series of mergers and acquisitions between 1947 until circa 1973. The evidence suggests that freezer exclusivity probably originated as a practice by JLC in 1926. This form of exclusivity was the most significant factor facilitating the growth of the ice cream market and the emergence of a nationwide retail network in the period early after WWII⁶²⁷. As an innovation, this was a probable defensive response by Glacier to Wall's growing trade and the potential threat Wall's represented to its budding wholesale business to retailers⁶²⁸.

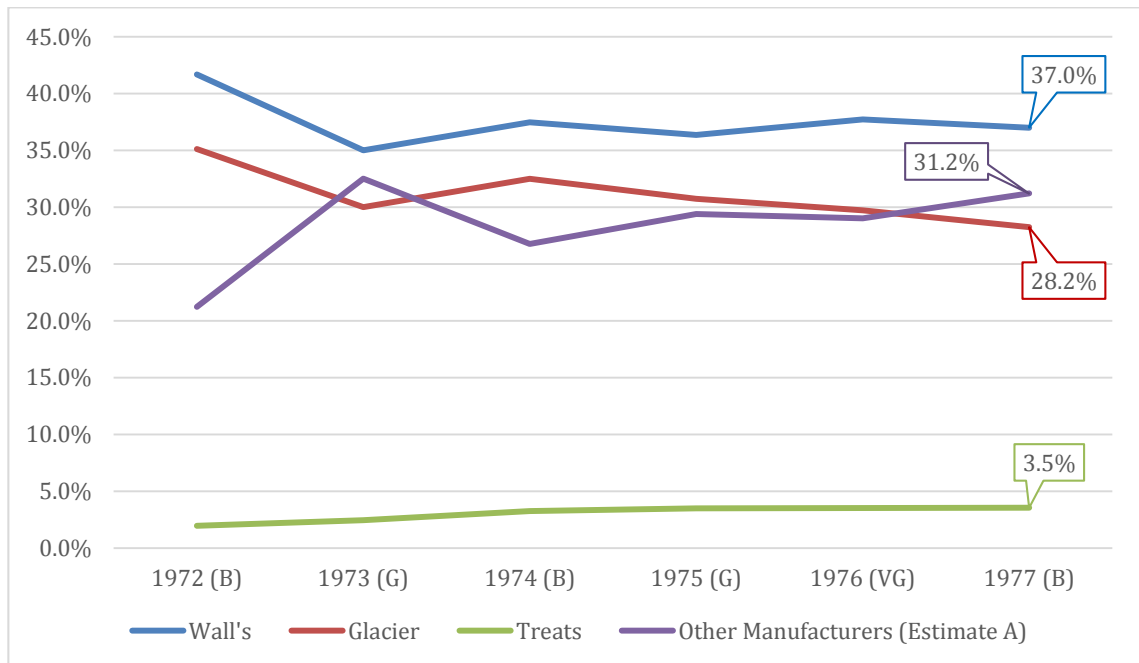
Figure 181 contrasts the market shares achieved by Wall's and Glacier in relation to the rest of the industry. No data relating to earlier periods was available in the Ice Cream Report.

⁶²⁶ See Section A5.2.

⁶²⁷ Refer to Ice Cream Report (1979, §31).

⁶²⁸ Refer to Ice Cream Report (1979, §29). Although there is evidence that Wall's did engage in exclusivity early in the history of the market, there is no evidence that such a strategy was adopted before 1926. The Commission would have surely correctly attributed the emergence of this strategy to Wall's in the same manner it did by attributing the introduction of mass production to the firm. Thus, it is assumed that Wall's responded to JLC's exclusivity strategy in kind even though it is reasonable to expect that the fleet of tricycles probably did not carry rival brands. In addition, there is no indication whether freezer and outlet exclusivity emerged in parallel or in a staggered fashion.

Figure 181 – Comparison of Market Shares based on Estimates Calculated by the Commission (by Net Sales Value, 1972 – 1976)



Source: Section A5.7.1E

The Commission briefly described the changing landscape in the manufacture and marketing of ice cream between the early 1920s and the late 1960s as a prelude to the more recent developments of the 1970s. In its opinion, three factors “transformed” the industry, namely, (a) mass production techniques, (b) development of a nationwide network of retailers via the provision of freezer cabinets for comprehensive geographical coverage, and, (c) “the demands of an affluent society” (Monopolies and Mergers Commission 1979, p. 12). The Commission claimed that provision of freezer cabinets was “the major marketing development of the earlier post war period” (Monopolies and Mergers Commission 1979, pp. 12, §31).

With the introduction of the Frozen Foods Report (1976), a fourth set of factors is suggested as an additional environmental agent of change that propelled the industry forward – the development of refrigeration technology which led to the emergence of nationwide refrigerated value chain within the frozen food industry and the proliferation of home freezing. The Commission, on the other hand, does not recognise these factors as critical success factors to the expansion of the ice cream market.

The remainder of this section analyses and interprets the learning history of Wall’s between the early 1920s to circa 1969, the first generation-situation.

A5.3.1 Large Scale Retailing, Distribution, and Production for Mass Consumption of Ice Cream

Wall's originally began manufacturing meat and the production of ice cream was occasioned by the aversive consequences of the seasonal summer downturns inherent to meat manufacturing⁶²⁹.

The contingency relations describing the flow of the patterns of consequences of trading within the meat business under the condition of seasonality specified an arrangement analogous to a *fixed interval ratio schedule* with the winter months being the peak period. Wall's responded to the adverse consequences (low summer trading volumes, revenues, and heavier incidence of costs on profits) by searching for and entering an industry running a counter seasonal cycle. The most obvious functions of such behaviour were to equalise the incidence of consumer and retailer demand and profitable exchange transactions over the year by compensating for the delays in registering sales and profits due to seasonality in one business by the counter flows of another business. Thus, Wall's could reduce its vulnerabilities to seasonality in its main business. In addition, and given the evidence with respect to the early state of the ice cream trade, Wall's entry must have also been a response to the potential net positive consequences of providing ice cream for mass consumption via mass production, distribution, and retailing.

In response to the then absent infrastructure necessary to support such a move and to provide for the special requirements of marketing ice cream, Wall's imported an apposite small ice cream plant from the US and installed it in its factory at Acton in 1922⁶³⁰.

Wall's ice cream was "an immediate success" (Monopolies and Mergers Commission 1979, p. 29, §63). Consumers widely accepted the product on offer and Wall's branded ice cream was "an immediate success" (Monopolies and Mergers Commission 1979, p. 29, §63). Originally, the product was mainly retailed through of Wall's owned tricycles with insulated boxes using dry ice as a refrigerant⁶³¹.

By 1939, Wall's produced both the ice cream and the dry ice used in static and mobile outlets and distribution vehicles to store the product in two factories (at Acton and in Manchester). In addition, the firm also owned about 8,000 tricycles through which it retailed ice cream **directly** to consumers via a network of 136 depots that also served around 15,000 retailers nationwide (Table 13)⁶³². These retailers already included a relatively small proportion of CTNs⁶³³. In 1939, Wall's registered a turnover of £1,500,000 of ice cream and, as already indicated, had a substantial market share and retail presence. The product range of Wall's was relatively narrow at the time and only confectionery (impulse) items were sold⁶³⁴.

⁶²⁹ Refer to the Ice Cream Report (1979, §63).

⁶³⁰ Refer to the Ice Cream Report (1979, §29, §64).

⁶³¹ Refer to the Ice Cream Report (1979, §63).

⁶³² Refer to the Ice Cream Report (1979, §64).

⁶³³ Refer to the Ice Cream Report (1979, §31).

⁶³⁴ Refer to the Ice Cream Report (1979, §64).

Therefore, the rate and quality of consumer and retailer approach appears to have reinforced the practices Wall's employed thus far. In aggregate, the retail channel (including the CTNs) achieved discriminative function as a set of positive reinforcers signalling the presence and availability of an access route (of certain size and quality) to a relatively large and growing number of consumers whose behaviour had the potential for terminating in the exchange of Wall's brands.

Table 13 – Types of Outlets Served by Wall's (1939, 1967, and 1976)

	1939	1967	1976	1976 % of Total
CTNs		21,120	17,620 (1)	30.5%
General Stores and Small Grocers		29,500	16,530	28.6%
Seasonal Outlets and Kiosks		4,550	3,490	6.0%
Cinemas, theatres, and bingo halls		1,050	870	1.5%
Supermarkets		720	5,060	8.8%
Home Freezer Centres			980	1.7%
Institutions		2,930	2,910	5.0%
Expensive and Economy Restaurants, Canteens		11,460	8,370	14.5%
Cash and Carry Stores			500	0.9%
Wholesalers			230	0.4%
Mobile Vehicles	8,000	1,000	1,200 (2)	2.1%
	<u>23,000 (4)</u>	<u>72,330</u>	<u>57,760 (3)</u>	<u>100%</u>

Note 1: The evidence shows that there were around 40,000 CTNs in 1976. Therefore, Wall's would account for 44% of the market share for this segment (§17).

Note 2: The report points out that there were approximately 9,000 mobile vans with Wall's accounting for a 13.3% share (§17).

Note 3: The totals provided by the Commission in its table contrasting the number of outlets between 1967 and 1976 (see the Ice Cream Report 1979, p. 35, §88) contains an error in computation. The Commission wrongly placed the totals for 1967 and 1976 at 72,320 and 57,750 respectively.

Note 4: The evidence states that Wall's had 8,000 tricycles selling directly to the public. In addition, Wall's already had a network of 15,000 retailers. Both mobile vendors and retailers were supplied through a network of 136 depots (§64).

Source: Monopolies and Mergers Commission (1979, p. 35, §88).

Given its pioneering effort and subsequent commercial success, Wall's entry marked a remarkable variation within the trade and an important innovation. It is not clear whether Wall's entry into the market in 1922 was a response solely attributable to the adverse consequences of seasonality on sales and profits in the meat business. The Commission provides no other evidence in this respect.

T Wall and Sons had its origins in the 18th century⁶³⁵ and the business seems to have been very successfully even during WWI⁶³⁶. The Wall family, however, sold T Wall and Sons to Mac Fisheries Ltd in 1920. The evidence also recorded the year of sale of Wall's to the Lever Brothers as 1927⁶³⁷. However, according to the Unilever website⁶³⁸, Wall's was purchased by Lever Brothers

⁶³⁵ Refer to the Ice Cream Report (1979, §58).

⁶³⁶ See Thomas Wall Trust (2014).

⁶³⁷ Refer to the Ice Cream Report (1979, §58).

⁶³⁸ See <http://www.unilever.com/aboutus/ourhistory/1920s/>.

Ltd (the co-founder of Unilever⁶³⁹) in 1922. If this were the case, then the time of entry into the ice cream market coincided with the time of acquisition by Unilever. In reading through the timeline of the history of Unilever, the sensitivity to market opportunity, the emission of novelty and variation via new or improved production techniques, new product technologies, and relatively durable and heavily marketed brands to capture and deliver market value, and the drive towards strong expansion to harness mass consumption were characteristic behaviours of this conglomerate⁶⁴⁰. Overall, the evidence demonstrates that Wall's repeatedly emitted practices sharing similar characteristics to that of its parent over the entire period of its history. Section A5.4 also provides a description of Wall's managerial behaviour setting wherein the behavioural interactions within the bilateral contingency relation between Unilever and Wall's are discussed to demonstrate strict objectives, targets, and relatively long-term plans. Taken together this evidence suggests that these behavioural interactions may have selected for the shared characteristics.

Therefore, it is reasonable to conclude that Wall's market entry was also occasioned by the potential qualitative and quantitative patterns of benefits contingent upon encouraging mass ice cream purchase and consumption. However, these full benefits could accrue only through following strategies of large-scale mass production and mass distribution, retailing, and consumer marketing.

Large Scale Retailing and Distribution: After the end of WWII, Wall's galvanised a restructuring of its retailing strategy because resuming the tricycle operation on any significant scale were deemed "impracticable" (Monopolies and Mergers Commission 1979, p. 26). According to the Commission "the substantial expansion of wholesale supply to CTNs" was "the main marketing development" in the early post war history of Wall's (Monopolies and Mergers Commission 1979, p. 26)⁶⁴¹.

Thus, in operant terms, post war external environmental conditions appear to have signalled severely punishing consequences of retailing via tricycle operations. This may be surmised given evidence just discussed with respect to (a) the business model of Wall's was already geared towards national coverage since well before the war, and, (b) its pre-war learning history was characterised by relatively rich patterns of utilitarian and informational reinforcement (retailer and consumer approach, sales, and market share) contingent upon marketing to the mass market via an embryonic but relatively large retail segment (including CTNs). (c) In addition, the war must have adversely effected the infrastructure that Wall's had already constructed leaving the firm with a relatively high level of deprivation⁶⁴².

There is no indication with respect to the level of demand for ice cream during the early post war years or the number of businesses populating the retail

⁶³⁹ Lever Brothers and Jurgens & Van den Bergh (owners of Dutch Margarine Unie) merge to form Unilever in 1929/1930 (Unilever 2014).

⁶⁴⁰ Section A5.13 carries a brief timeline of Unilever's history take from the website of the group.

⁶⁴¹ Refer to the Ice Cream Report (1979, §65).

⁶⁴² The Commission used such words as "resume" tricycle operations and "re-established a retail operation" (1979, p. 26, §65) implying that the operation of Wall's was stopped or seriously curtailed during the war thereby drying up pre-war sources of sales revenues and routes to market.

segment. However, given Wall's learning history so far and its business model, it is reasonable to conclude that the general conditions signalled the potentially greater positive consequences contingent upon engaging *indirectly* with a significantly larger volume of consumers via an intermediate tier. This intermediate tier was populated by a relatively large number of CTNs who, in aggregate, would have also provided Wall's with an extensive degree of geographical coverage.

Wall's provided the CTNs with freezer cabinets, which substituted the pre-war insulated dry ice cabinets⁶⁴³. The evidence is not clear with respect to the exact year when Wall's adopted the practice of exclusivity. As already indicated, the report states that by 1926 JLC was already tying retailers with exclusivity contracts in return for providing free cabinets⁶⁴⁴. Although there is evidence that Wall's did engage in exclusivity early in the history of the market, there is no evidence that such a strategy was adopted before 1926. Thus, it is assumed that Wall's responded to JLC's exclusivity strategy in kind even though it is reasonable to expect that the fleet of tricycles it owned probably did not carry rival brands. In addition, there is no indication whether freezer and outlet exclusivity emerged in parallel or in a staggered fashion.

The probable advantages of circumscribing manufacturer and retailer exchange relationships in freezer exclusivity during the early years may only be inferred from the Report⁶⁴⁵.

The main incentives of trading in ice cream to any given retailer included: a positive contribution to sales revenues and costs (utilitarian reinforcers and punishers) of the product relative to other confectionery and substitute items and to overall outlet profitability and return on investment (informational reinforcers). Depending upon the type and size of the retailer, the contribution could be relatively large. The evidence suggests that the types of retailers during the period included CTNs, places of entertainment, and seasonal outlets. For CTNs, for example, ice cream provided only a relatively small contribution to total turnover (about 1 to 2%). Wall's claimed that the average value of sales to CTNs stood at £530 in 1977⁶⁴⁶.

According to Wall's, the aversive consequences of ice cream trading at retail arose from two issues: (a) the costs associated with the fact that ice cream would typically be the only frozen item on sale at CTNs and entertainment/seasonal outlets (in contrast to grocery stores), and (b) the susceptibility of financial performance to carrying a relatively high-risk item of inventory because of the unpredictability of weather conditions⁶⁴⁷. Thus, the negative consequences contingent upon retailers purchasing their own freezer cabinets included two important deterrents: (a) relevant capital expenditure and

⁶⁴³ Refer to the Ice Cream Report (1979, §65).

⁶⁴⁴ Refer to the Ice Cream Report (1979, §143).

⁶⁴⁵ Since the available evidence with respect to freezer exclusivity deals only with the practices of Wall's, Glacier, and other manufacturers during the 1970s, a more comprehensive analysis is conducted in Section A5.4.5. Therefore, only inferences may be proposed as to the possible advantages of freezer exclusivity to retailers during the early years. That said, it is reasonable to assume that the main advantage of exclusivity was always about releasing retailers from the burden of investing and maintaining their own freezers.

⁶⁴⁶ Refer to the Ice Cream Report (1979, §17 (fn. 1), §297, §316).

⁶⁴⁷ Refer to the Ice Cream Report (1979, §316).

installation costs plus repair and replacement overheads⁶⁴⁸, and, (b) a greater susceptibility to the vagaries of British weather. To the extent that Wall's⁶⁴⁹ and Glacier⁶⁵⁰ claimed that most of the small retailers would have *escaped* the negative consequences of retailing ice cream by ceasing to offer the item on sale at their stores. There also seems to have been a relative consensus among all those who provided evidence to the Commission with respect to the reasons for which freezer exclusivity was retained among small retail outlets until the late 1970s since its early appearance in the later 1920s: any profits arising from the contribution to revenues of retailing ice cream were insufficient to cover the costs of investing in freezer cabinets and maintaining them in a good state of repair⁶⁵¹.

If this were truly the case, then Wall's was correct in arguing that "only by providing refrigeration that it had been possible to establish ice cream in small shops on the present scale" (Monopolies and Mergers Commission 1979, p. 113) given its learning history, state of deprivation during the early post war years and business model orientated around capturing the benefits of mass consumption net of the costs of large-scale production, distribution, retailing and consumer marketing. (In conjunction with freezer exclusivity, tying in outlets served to further barricade against possible intrusion by rivals onto additional retail space and legally circumscribing relations with those retailers who already possessed a freezer.)

Thus, through exercising exclusivity within the Manufacturer↔Retailer bilateral contingency, Wall's minimised the risks and costs associated with the ice cream trade for the retailers (mutuality through a significant reduction of the punishers involved) in return for exclusive custom (literal exchange). Wall's and others assumed most of the aversive consequences arising from these business risks but in return benefitted from a faster and broader retail penetration and a guaranteed source of income (reciprocity, mutuality and exchange). Other associated advantages of exclusivity related to stabilising and making more certain the rate and quality of retailer approach given the vulnerability of the market to seasonality and the unpredictability of the weather. In turn, exclusivity had additional benefits with respect to protecting sources of revenues from rivals, constricting the setting scope effectively barring access to profitable routes to consumer sales, improved production and distribution planning and costs, more efficient raw material purchasing, better inventory management and so on.

⁶⁴⁸ Refer to the Ice Cream Report (1979, §316).

⁶⁴⁹ Refer to the Ice Cream Report (1979, §316).

⁶⁵⁰ Refer to the Ice Cream Report (1979, §364, §365).

⁶⁵¹ Section A5.9.1 presents a detailed summary of the views expressed by a number of various organizations involved in the industry. The general sentiment expressed reflects the arguments put forward by Wall's. For example, the CTNs argued, that the costs of prompt and reliable equipment repair and replacement especially during periods of high demand were a significant deterrent to owning a freezer cabinet. Other comments made include: first, for any single store, the presence of rival brands was not economical and increased the costs of operation by attending to such issues as having additional price lists, point of purchase displays, sales rep visits and so on. Second, the presence of rival brands was claimed to have no appreciable increasing effect on sales revenues. Third, only an unspecified few of these multiple CTNs claimed that they considered the products of Wall's and Glacier to be appreciably different in the range on offer (§298). To the extent, therefore, that there seemed little incentive to offer one set of brands over another. What did matter with respect to generating consumer demand were the investments made by manufacturers in advertising and marketing promotions (§298).

The aggregate volumes of sales and revenues (positive reinforcers) and the total contributions to the reduction in the unit cost of operating (punishers) in combination with other potential benefits or reduction of aversive consequences occasioned and reinforced the exclusivity practices by Wall's⁶⁵².

The Commission also reports that Wall's re-established its direct retail operations to service consumers. However, Wall's used vans instead of tricycles and by the 1963 the firm had a fleet of 900⁶⁵³ engaged in retailing hard ice cream to the public⁶⁵⁴.

By 1963, however, the aversive consequences of managing direct mutuality-plus-exchange relationships with consumers in parallel to managing direct relations with retailers from a single set of storage depots occasioned further variation (via specialisation) on the part of Wall's. The direct selling retail vans operation of Wall's and a leading soft ice-cream company called Mr Whippy Ltd (Mr Whippy was a subsidiary of Fortes Ltd) were merged within a new firm called Wall's-Whippy. Fortes and Wall's each maintained a 50% stake until, in 1966, Unilever acquired Fortes' share. The interest of Unilever in Wall's-Whippy was terminated in 1974 and assets were transferred to T Wall and Sons Ltd. Thus, Wall's-Whippy took over the management of Wall's mutuality-plus-exchange relations with consumers. After 1963, Wall's-Whippy resumed a process that was already taking place in Mr Whippy Ltd: it replaced its entire direct selling operations (foregoing the sales and profits therefrom while reducing related retailing overheads and risks) by developing a system of franchising⁶⁵⁵. Franchisees were bound by a three-year contract to a specified area, to purchase a specified value of ice cream, and to exclusively sell Wall's brands among other conditions. Operators were *not* provided with freezer equipment; however, they were offered the option of buying their specialised vehicles from Wall's-Whippy⁶⁵⁶. The net benefits of such a franchising operation replacing direct consumer selling are similar to running a retail operation with the added benefits of reduced associated risks, which are passed on to the franchisee. For example, Wall's and later Wall's-Whippy no longer required incurring the costs of employing sales people to man the fleet of 900 vans⁶⁵⁷ and of maintaining and replacing these specialised vehicles. By the reasonable conduct of business, it is logical to conclude that the costs of marketing to and monitoring franchisees were significantly lower than retailing directly to a cross section of an increasing group of consumers. Also, whereas individual franchisee orders were larger (and, hence, relatively more rewarding) because they aggregated the demand of several consumers (and included a minimum order quantity guaranteed by contract), the patterns contingent upon the purchase behaviour of individual consumers were relatively smaller and more random. Thus, the contingency relations specifying the flow of the patterns of net rewarding consequences from running a franchising operation under the conditions specified within the contract may be described to being

⁶⁵² Several other behaviours in Wall's repertoire were occasioned by the transaction costs including rationalisation of production as shall be discussed later.

⁶⁵³ Refer to the Ice Cream Report (1979, §65).

⁶⁵⁴ Refer to the Ice Cream Report (1979, §127).

⁶⁵⁵ Refer to the Ice Cream Report (1979, §127).

⁶⁵⁶ Refer to the Ice Cream Report (1979, §128).

⁶⁵⁷ Refer to the Ice Cream Report (1979, §65).

analogous to a *ratio* schedule of reinforcement that was less variable. Greater *net* rewards were contingent upon less effort. The flow of patterns of net rewarding consequences from dealing directly with consumers is also analogous to a *variable ratio*. However, the schedule was relatively more variable and lesser *net* rewards were contingent upon greater effort.

Until the late 1960s, Wall's seems to have run a relatively vertically integrated direct route to retailers and, with the advent of Wall's-Whippy to a significantly decreasing extent, to end consumers⁶⁵⁸. For example, Unilever owned a general distribution company (including a refrigerated transport division) via its wholly owned subsidiary SPD Limited. The latter also owned a number of cold storage depots six of which were used by Wall's to service its customers besides other depots owned by third parties⁶⁵⁹. The refrigerated transportation business run by SPD operated solely for use by Birds Eye Ltd (a sister company of Wall's and wholly owned by Unilever)⁶⁶⁰.

Wall's continued supplying most of its retailers directly well into the 1970s to the extent that distributive wholesalers were treated as retailers on preferential terms⁶⁶¹.

In 1955, Unilever separated the ice cream and the meat businesses into two individual companies with separate management⁶⁶².

By the late 1950s, the demand for ice cream was relatively high and in a growth phase. However, a number of bad weather years in the early 1960s set the market back. Demand seems to have also been adversely effected by a purchase tax of 15% in 1962. The tax was increased successively up to 22% between 1962 and 1968 and retained at that level until 1971. Consumer demand, however, appears to have picked up during the later 1960s⁶⁶³. In parallel, however, several factors adversely effected the number of CTNs and small retail outlets⁶⁶⁴, and, therefore, the quality and quantity of the patterns of reinforcement contingent upon trading in impulse products with the traditional trade segment.

The aversive consequences on the business associated with these phenomena occasioned further instances of exploratory behaviour and variation. The organisation is recorded to have engaged in "more sophisticated techniques of market research" geared towards the identification of new products (Monopolies and Mergers Commission 1979, p. 27)⁶⁶⁵ given that among the main reinforcement criteria governing purchase and consumption appeared to be variety and novelty among child consumers and novel relatively differentiated premium impulse products among adults⁶⁶⁶. Perhaps, this was one way of rejuvenating against stagnation experienced by Wall's⁶⁶⁷.

⁶⁵⁸ Refer to the Ice Cream Report (1979, §66).

⁶⁵⁹ Refer to the Ice Cream Report (1979, §85-86).

⁶⁶⁰ Refer to the Ice Cream Report (1976, p. 28, §104).

⁶⁶¹ See Section A5.4.5C and the treatment of distributive wholesalers as National Accounts.

⁶⁶² Refer to the Ice Cream Report (1979, §66).

⁶⁶³ Refer to the Ice Cream Report (1979, §32).

⁶⁶⁴ Refer to the Ice Cream Report (1979, §33) and Sections A5.2.6 to A5.2.7.

⁶⁶⁵ Refer to the Ice Cream Report (1979, §66).

⁶⁶⁶ Refer to the Ice Cream Report (1979, §13). See also Section A5.4.4.

⁶⁶⁷ Refer to the Ice Cream Report (1979, §71).

The evidence also points out that the market setbacks during the 1960s also made the patterns of reinforcement contingent upon selling ice cream to larger grocery outlets more salient. Wall's, in fact, increased its efforts towards this sector⁶⁶⁸ for similar reasons it escaped direct selling to consumers.

The contingency relations specifying the flow of the patterns of net rewarding consequences from larger grocery retailers under the conditions of setback in the demand for ice cream due to taxes and to bad weather and the decline of the traditional trade may be also described to being analogous to a *ratio* schedule of reinforcement. Since the orders from any such retailers were significantly larger than those from individual small outlets, the patterns of reinforcement contingent upon trading with a large grocery outlet were greater than those arising from transactions with individuals in the traditional trade. In addition, outlets within the grocery sector seemed less likely to require a freezer. This could have compensated for the lower profitability experienced with these types of outlets. As such, therefore, the grocery sector probably required expending less effort for the same level or greater of patterns. Hence, the ratio in operation when trading with groceries may have been less variable.

That said, Wall's did not abandon the traditional trade – the segment remained of great importance and salience, as stated before. Wall's "increasing attention to the development" of the grocery trade (Monopolies and Mergers Commission 1979, p. 27) seems to have been a case of spreading the risk (indemnifying against the possible over-reliance on the traditional trade) and diversifying through the exploration of new and seemingly attractive business opportunities (the grocery trade). It should be noted that take home items (sold mainly in the grocery trade) were less susceptible to seasonality and the vagaries of the weather than impulse items (sold mainly in the traditional trade)⁶⁶⁹.

The ice cream Wall's sold via the traditional trade segment declined from 68% (1971) to 47% (1977) of total whereas sales from the grocery sector increased from 10% (1971) to 34% (1977) of total. Thus, already at the beginning of the 1970s, Wall's seemed to have significant vested interests in both retail segments⁶⁷⁰.

In conclusion, until the end of the 1960s, Wall's was largely responsible for the distribution of its products directly to its retail customers. The change in this strategy seems to have been initiated in 1969⁶⁷¹.

A5.3.2 Large Scale Manufacturing

The period between 1949 and 1964 was also characterised by an expansion, rationalisation, and consolidation of Wall's manufacturing base to gear the organisation towards rapidly moving high volumes and achieving economies of scale⁶⁷². In operant terms, the efforts on the part of Wall's were occasioned by

⁶⁶⁸ Refer to the Ice Cream Report (1979, §66).

⁶⁶⁹ Refer to the Ice Cream Report (1979, §201). See also Section A5.2.4.

⁶⁷⁰ Refer to the Ice Cream Report (1979, §72).

⁶⁷¹ Refer to the Ice Cream Report (1979, §86). See also Section A5.4.

⁶⁷² Refer to the Ice Cream Report (1979, §66, §79-81, §340).

the potential reduction in utilitarian and informational punishers (costs) and increases in utilitarian and informational reinforcers (namely, profits and profitability).

By 1949, Wall's opened a third ice cream factory in Edinburgh. In 1959 a fourth factory was opened in Gloucester to replace the Manchester (1961) and Edinburgh (1962) factories. The London head office also moved to Gloucester by 1964⁶⁷³. The period culminated in a move towards centralised production with large-scale plants and a very close integration of manufacturing and distribution facilities⁶⁷⁴. Wall's claimed the Gloucester factory to be "the largest and most modern of its kind in the world" (Monopolies and Mergers Commission 1979, p. 27, §66) – it was highly mechanised and automated and several tasks were computerised. This led to significant increases in the range, variety, and complexity of the products manufactured. Very often, the engineers of Wall's designed the production machines themselves with an overarching emphasis on product innovation⁶⁷⁵.

In 1964 Wall's divested its cone and wafer manufacturing plus distribution organisation in favour of acquisition of the business by Total Investments (a joint venture between Unilever and Glacier)⁶⁷⁶. The newly formed wholly owned subsidiary of Total Investments, Embisco Ltd, was charged to supply cones and wafers to both Wall's and Lyons Maid (which had previously sourced these raw materials elsewhere)⁶⁷⁷. According to the report this collaboration was occasioned by the potential benefits of rationalisation and resulted in "significant economies of scale in the production of wafers and cones" (Monopolies and Mergers Commission 1979, p. 116, §324) for both organizations⁶⁷⁸. Glacier in fact commented that in the first nine months of 1977 it had saved about 23% on the purchase of cones and wafers when compared to the equivalent offers by leading suppliers⁶⁷⁹.

A5.3.3 Mass Consumer Marketing

Little information is given in the report with respect to consumer purchase and consumption behaviour patterns between 1920 and 1969 or to the entire range of practices involved in mass consumer marketing during that period. The

⁶⁷³ Refer to the Ice Cream Report (1979, §66).

⁶⁷⁴ Refer to the Ice Cream Report (1979, §66, §340).

⁶⁷⁵ Refer to the Ice Cream Report (1979, §66). §80 presents an explanation by Wall's with respect to the reasons for which it sought to rationalise and consolidate its production towards two plants to the extent that the company claimed that were to start afresh, it would have only a single factory.

⁶⁷⁶ For information on Total Investments see Section A5.3.5.

⁶⁷⁷ Refer to the Ice Cream Report (1979, §214). The organisation and management of Embisco are described in paragraphs 216, 217, and 225 of the Report.

⁶⁷⁸ Significant economies of scale were achieved despite the fact that the personnel engaged in the production and distribution activities of Embisco were still employed by Wall's. (Refer to the Ice Cream Report (1979, §217)). It is not clear whether Wall's continued footing the labour cost of these employees or whether they were seconded and their salaries and wages were Embisco's burden.

⁶⁷⁹ Refer to the Ice Cream Report (1979, §373).

Commission, however, does provide details with respect to the more salient and complex characteristics that predominated during the 1970s⁶⁸⁰.

The evidence available does suggest, however, that the latter characteristics of ice cream purchase and consumption patterns did appear earlier with relatively less salience and less complexity thereby implying a gradual development. For example, the evidence discussed in Section A5.3.1 and A5.2, suggests that consumer approach was originally oriented around the reinforcement patterns derived from purchasing and consuming ice cream on impulse (especially confectionery). Gradually patterns changed to display a marked approach to take home ice cream⁶⁸¹.

Although no quantitative data is provided in respect to the size of consumer demand, the Commission notes that overall consumer approach patterns to ice cream of all kinds experienced considerable growth since the 1920s despite a susceptibility to consequences of seasonality and unpredictable changes in weather, and a negative sensitivity to upward revisions in prices. For example, the imposition of a purchase tax in 1962 with later increases up until 1968 seemed to have initially curbed demand.

The report states that, at some point during the history of the trade, the product was considered a luxury item and this implies that the purchase and consumption of ice cream was confined to a certain social class⁶⁸². The growth in affluence among the general population influenced this characteristic feature of purchase and consumption patterns⁶⁸³ and by 1976 ice cream was being eaten by all regardless of social class and age as a pleasure product item⁶⁸⁴. The report does not specify when the change occurred; however, as discussed, it seems that early during the period between first and second world wars ice cream purchase and consumption was relatively confined to specific narrow artisanal product ranges, impulse situations and locations close to product manufacture. As stated earlier, Wall's pioneered mass produced ice cream in the UK in 1922.

Wall's estimated that consumer expenditure (at consumer prices) hit the £47.2m mark by 1972 (and £117.5m in 1976)⁶⁸⁵. The Commission calculated a total between 207.7m to 226.7m litres in manufactured and sold volumes⁶⁸⁶. There seems to have been different views expressed on the total demand trends. Glacier argued that the rising trend of consumer demand peaked in 1973 and the market size remained relatively static thereafter. Wall's, on the other hand, estimated an annual 4% growth in volumes between 1971 and 1976⁶⁸⁷.

⁶⁸⁰ Section A5.4.4 examines 1970s purchase and consumption patterns in greater detail. Of relevance to this section are the consumer approach conditions faced by Wall's between 1920 and 1969.

⁶⁸¹ Refer to the Ice Cream Report (Monopolies and Mergers Commission 1979, §33) for factors involved in this gradual change.

⁶⁸² Refer to the Ice Cream Report (1979, §9).

⁶⁸³ Refer to the Ice Cream Report (1979, §29).

⁶⁸⁴ Refer to the Ice Cream Report (1979, §9).

⁶⁸⁵ See Section A5.7.2A.

⁶⁸⁶ See Section A5.7.2B.

⁶⁸⁷ Refer to the Ice Cream Report (1979, §49).

A: Long-Term Shifts in Demand and its Localised Variability

Besides the long-term gradual shifts in demand patterns occurring as a result from changes in the macro-environment, the evidence suggests a relatively high variability occurring during each *consumer situation*⁶⁸⁸.

The macro shifts mentioned by the Commission include urbanisation and urban redevelopment (e.g., the development of new town centres), the allocation of purchase and consumption behaviour to self-service stores and “one stop shopping⁶⁸⁹”, changes in the distribution of retail outlet types (in part arising from changes in purchase and consumption patterns and related factors), and, changes in the composition of the population with fewer children. Children were particularly important purchasers of impulse products and several product lines were developed, over the years, to attend to their specific criteria for reinforcement⁶⁹⁰. The report also mentions “other factors” that effected the purchase and consumption of ice cream resulting in “a major change in consumer purchasing habits in relation to ice cream” (Monopolies and Mergers Commission 1979, p. 16, §37). However, the Commission fails to provide any other examples of such changes besides that relating to the move from the impulse to the take home segment and the apparent durability of this shift⁶⁹¹. Wall’s remarked that during the early 1970s right until the time of the investigation it was experiencing a relatively stagnant demand for its confectionery and desert ranges the sales of which rose only in good seasons to retreat during bad weather years⁶⁹². Around the same time, Wall’s embarked in (a) upgrading the sophistication of its market research techniques, (b) intensifying its product development efforts within the impulse market, and, (c) turning attention towards the grocery trade. As a result, Wall’s claimed annual growth in consumer approach to ice cream. Glacier, on the other hand, claimed that after 1973, demand remained relatively static. Glacier admitted that it arrived late within the grocery trade and did not seek to develop its sales of bulk products to that trade between 1972 and 1976 with the proportion of the sales of these items to total sales remaining at around 18%⁶⁹³. During the same period, and aside from the declines in sales due problems of industrial action (1975) and higher prices (1976)⁶⁹⁴, Glacier seems to have experienced a degree of stagnation and decline, a case, which might have also arisen from shifts in relation to demand for ice cream unrelated to Glacier’s brands.

Figure 182 and Figure 183 compare indices used by Wall’s and Glacier respectively with respect to actual sales and “weather-corrected” sales showing relative stagnation in the former and decline in the latter on the sales correction metric.

⁶⁸⁸ The term “consumer situation” is understood here in terms of the BPM.

⁶⁸⁹ Refer to the Ice Cream Report (1979, §33).

⁶⁹⁰ Refer to the Ice Cream Report (1979, §13).

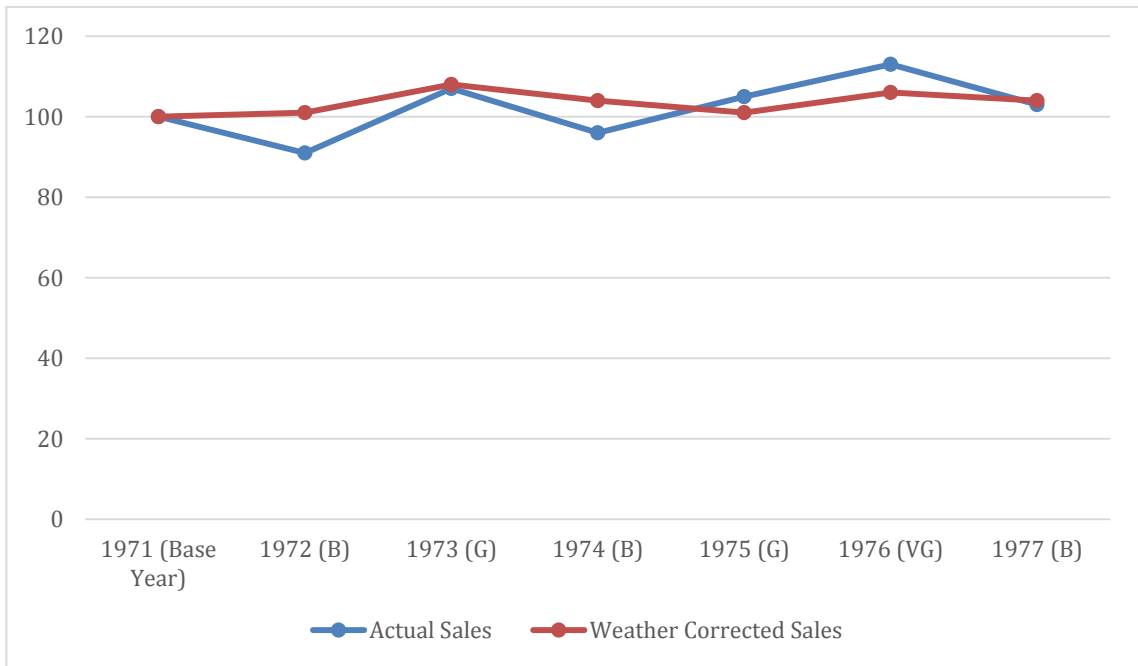
⁶⁹¹ Refer to the Ice Cream Report (1979, §37).

⁶⁹² Refer to the Ice Cream Report (1979, §71).

⁶⁹³ Refer to the Ice Cream Report (1979, §264).

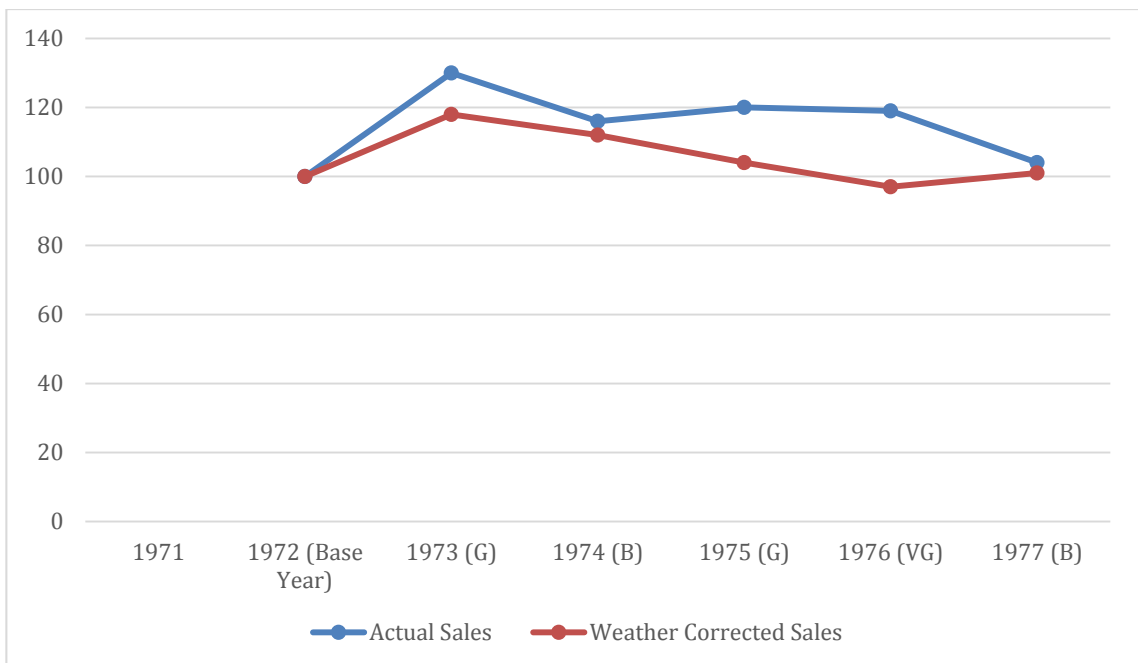
⁶⁹⁴ Refer to the Ice Cream Report (1979, §263).

Figure 182 – Actual and Weather Corrected Sales Indices by Wall's



Source: Section A5.7.3H

Figure 183 – Actual and Weather Corrected Sales Indices by Glacier



Source: Section A5.7.3H

The evidence suggests a relatively high variability occurring during each consumer situation⁶⁹⁵ or variation in purchase and consumption patterns localised at the actual point of sale and functioning in a manner analogous to a *variable ratio schedule*. The effects of such localised consumer behaviour variation appears to have been cumulative.

The evidence includes five main sources of localised variability: First, the variability of demand inherent to seasonality and to the weather as has been

⁶⁹⁵ The term “consumer situation” is understood here in terms of the BPM.

already established. In addition, the type of consumer situations themselves exhibit variability, impulse versus take home are characterised by a greater susceptibility of the former set of products to the vagaries of seasonality and the weather⁶⁹⁶.

Second, the Commission fails to examine the exact nature of impulse products. Impulse and convenience items are usually characterised by relatively frequent purchasing, little advanced planning or brand comparison on the part of the consumer. Marketing is characterised by mass distribution targeting as many locations and consumer situations as is possible, relatively low pricing, and mass promotion on the part of manufacturers. The evidence described so far supports this characterisation. With respect to mass promotion, the evidence demonstrates heavy promotional and advertising expenditure in the national media and at point of sale by industry incumbents to construct and maintain product and brand approach through mass awareness campaigns⁶⁹⁷. The National Federation of Retail Newsagents, representing 30,000 related organizations, claimed that members had little choice but to carry the products of the national manufacturers due to the extent to which Wall's and Glacier advertised their products among consumers⁶⁹⁸. The report points towards advertising and promotional expenditure having recurred (hence, reinforced) throughout most of the history of the industry.

Further, the Retail Confectioners and Tobacconists Association⁶⁹⁹, the Co-operative Organisations UK⁷⁰⁰, and a number of multiple CTNs who together own 3,000 outlets among them⁷⁰¹, claimed that their member organizations generally found a very high degree of similarity among competitive offerings in terms of products, brands, and pricing. To the extent that: (a) rival ice cream products were considered to be sufficiently similar so having more than one supplier would mean carrying "duplicate varieties of several suppliers" (Monopolies and Mergers Commission 1979, p. 107, §295); (b) similarity of products, pricing, and margins compelled retailers to remain 'loyal' to a single supplier⁷⁰²; (c) the presence of several rival brands was claimed to have no appreciable increasing effect on sales revenues⁷⁰³; and, (d) the main factors influencing consumer demand were advertising and marketing promotions⁷⁰⁴. In addition, Wall's claimed that it was particularly susceptible to adverse effects

⁶⁹⁶ Refer to the Ice Cream Report (1979, §201).

⁶⁹⁷ Refer to the Ice Cream Report (1979, §124).

⁶⁹⁸ Refer to the Ice Cream Report (1979, §289). Wall's claimed that in 1977, 75% of its advertising budget was spent on promoting impulse and family items through CTNs (§124). Earlier figures with respect to advertising and promotion are not available. However, between 1972 and 1976 Wall's spent between 2.3% to 4.5% of NSV (mean of 3.6%) on advertising on the media, at point of sale, and through related promotions. Glacier, on the other hand, spent between 3.1% to 5.8% (mean of 4.7%)(§205). Glacier expressed its advertising and promotional expenditure in terms of Sales at Standard Wholesale Prices. Section A5.7.1K provides calculations based on NSV for comparative purposes.

⁶⁹⁹ Refer to the Ice Cream Report (1979, §291-2). See also Section A5.9.1. The Association represents 8000 members who, in turn, own between 10,000 and 12,000 confectionaries and tobacconists most of which retail ice cream.

⁷⁰⁰ Refer to the Ice Cream Report (1979, §295). See also Section A5.9.1.

⁷⁰¹ Refer to the Ice Cream Report (1979, §297-298). See also Section A5.9.1.

⁷⁰² Refer to the Ice Cream Report (1979, §291).

⁷⁰³ Refer to the Ice Cream Report (1979, §298).

⁷⁰⁴ Refer to the Ice Cream Report (1979, §298).

of having its successful products copied by other manufacturers⁷⁰⁵. It also stated that secondary manufacturers could compete economically through specialising on a narrow and focused product range comprising “directly substitutable products” (Monopolies and Mergers Commission 1979, p. 120), a move which created further competitive pressures and potential for variability in demand.

If retailer opinions reflected consumer purchase patterns vis-à-vis manufacturer brands, then the brands within particular quality and product ranges appeared to have been functionally equivalent substitutes and variability among these brands reflected the typical purchase patterns of Fast Moving Consumer Goods (FMCG) products. As such, therefore, once source of variability was inherent to trading in an FMCG impulse item.

Third, variability in demand also arose from seasonal movements (e.g., holidaying during summer)⁷⁰⁶ and concentration (e.g., holiday sites attracting tourism)⁷⁰⁷ of purchase in purchase and consumption patterns.

Fourth, during the early post war period the efforts by Wall’s and Glacier with respect to the development a retail network of CTNs and similar outlets significantly broadened the scope of the market. Whereas the main reinforcing consequence of such efforts was the sales derived from a “greatly increased ... availability of ice cream to the general public,” a considerable aversive consequence related bringing ice cream into direct competition with other confectionery products (Monopolies and Mergers Commission 1979, p. 13, §31). To the extent that both national suppliers pointed toward “their constant preoccupation with competition from other products” that were retailed throughout the same types of outlets and that were promoted heavily by their respective manufacturers (Monopolies and Mergers Commission 1979, p. 11) (Table 14)⁷⁰⁸.

Table 14 – Imperfect Substitutes for Ice Cream

Ice Cream Products	Alternative Products	Consumer Situation
Ice Cream Confectionery	Chocolate and sugar confectionery, soft drinks, savoury snacks, and children’s sundries.	Impulse • Products available at CTNs, seasonal, entertainment, and other outlets.
Ice Cream Dessert	Frozen, chilled, and other convenience deserts of every kind including mousse, yoghurt, instant desserts, canned fruit, and other items.	Take Home • Products available at most grocery outlets.

Source: (Monopolies and Mergers Commission 1979, §27)

The fifth and final source of localised variability seems to have arisen from the differences in reinforcement criteria of consumers. Both manufacturers recognised the importance of children as important purchasers of impulse products and the idiosyncrasies of child and adult behaviour patterns. By 1976,

⁷⁰⁵ Refer to the Ice Cream Report (1979, §336).

⁷⁰⁶ Refer to the Ice Cream Report (1979, §327).

⁷⁰⁷ Refer to the Ice Cream Report (1979, §28).

⁷⁰⁸ Refer to the Ice Cream Report (1979, §27, §335).

behaviour patterns among children favoured variety and novelty in flavouring. Adult patterns, on the other hand, were “more conservative” with respect to flavouring and favoured distinctiveness and “premium” quality products (Monopolies and Mergers Commission 1979, p. 5, §13)⁷⁰⁹. Despite these differences, both patterns exhibited a susceptibility to variety. Indeed, competition in outlets classed under the traditional trade segment was such as to constrain manufacturers to supply and market “a wide range of products and constant novelty and variety in order to compete with the larger variety of alternative products on sale” (Monopolies and Mergers Commission 1979, p. 12, §27). Thus, this suggest that each impulse consumer situation was characterised by the allocation of consumer behaviour patterns among the various patterns of reinforcement on offer by ice cream (as a product category) and available brands and by imperfect substitute products and related brands.

These instances of localised variability appear to have had their origins somewhere between the late 1940s and the late 1960s and thus constitute a part of the learning history of Wall’s. Presumably, these changes were gradual and complexity increased as manufacturers, retailers, and consumers interacted within respective bilateral contingencies wherein behaviour was reciprocally reinforced and punished. Thus, it would appear that variability was co-shaped⁷¹⁰.

B: Practices Emitted in Response to the Characteristic Features of Demand

Environmental conditions where such that the patterns of utilitarian and informational reinforcement contingent upon trading in ice cream were regulated by and particularly sensitive to patterns of ice cream purchase and consumption behaviour, the trends of and shifts in these patterns, and the localised variability of the patterns within a particular setting or segment of setting.

Purchase and consumption patterns functioned to signal the rate and strength of consumer approach to and escape-avoidance of situations during which ice cream was purchased and consumed, to ice cream as a product, and to the particular product ranges and brands available. Localised variability, for example, was a relatively aversive stimulus event signalling the relative unpredictability of consumer behaviour terminating in profitable exchange transactions. Good summers increased the quantity of sales and profits (utilitarian reinforcers) and profitability, average return on capital employed, and market shares (informational reinforcers). In parallel, a good season reduced per unit costs of production, distribution, retailing, and mass consumer marketing (utilitarian punishers) and associated informational punishers. Bad seasons worked in the opposite direction increasing punishers and reducing reinforcers. The vagaries of the weather also effected the quality of these reinforcers and punishers as could be surmised from the relatively high peaks of

⁷⁰⁹ Refer to the Ice Cream Report (1979, §13).

⁷¹⁰ This point is taken up in the following section to show how Wall’s and others emitted variety in their offering.

good summer sales figures and low troughs in bad season data while fixed overheads remained relatively stable at an increasing pace⁷¹¹.

The other elements of localised variability also appear to have similar effects as is attested by the weather corrected sales indices provided by Wall's and Glacier (Figure 182 and Figure 183).

Purchase and consumption patterns and related factors regulated the flow of patterns of reinforcement and punishment contingent upon trading in ice cream in an arrangement analogous to those specified in a *variable ratio schedule*.

The national manufacturers intensified certain activities paralleling the qualitative and quantitative upswings in sales and others paralleling downturns or emitted continually to reduce the depth of the trough during such downswings. Activities related to upswings included intensified sales (including visits to retailers), distribution, and production. These activities functioned to improve the ratio schedule: an increase in the number of responses before punishment is generated. All efforts geared towards generating sales (ranging from advertising to sales people doing the rounds with retailers to exclusive freezers) during good seasons had a higher probability of terminating in exchange. Due to this improved sales closure rate, increasing marginal returns set in delaying (and reducing) the incidence of cost (punishment).

National manufacturers emitted practices that functioned to reduce the depth of the trough during such downswings on a more long-term basis thereby attempting to improve the ratio schedule by reducing its variability or avoiding the more adverse of its consequences.

First: Freezer and outlet exclusivity appears to have functioned in a manner that rendered the utilitarian and informational patterns of reinforcement contingent upon consumer exchange in the various brands of ice cream less variable and more predictable and certain by establishing barriers to eliminate rival offerings in ice cream.

Second: The evidence records that the growth strategy of Wall's and Glacier centred around offering a comprehensive range of ice cream products composed of a huge variety of product lines in response to patterns of purchase and consumption⁷¹². Table 15 presents a comparison of the product lines carried by Wall's, Glacier, and Treats⁷¹³.

⁷¹¹ Although the figure used here relate to the post 1970s period, there is no evidence to suggest that this case of affairs did not exist before since expenditure on refrigeration was the highest source of capital and maintenance cost in the production and supply of ice cream.

⁷¹² Refer to the Ice Cream Report (1979, §30).

⁷¹³ Appendix 1 of Ice Cream Report (1979) provides a non-exhaustive and extensive price list of the products Wall's and Glacier offered during 1976.

Table 15 – Comparison of Number of Product Lines

Product Type	Wall's (January 1977)	JLC (Lyons Maid and Midland Counties Only, Mid-1976)	Treats (February 1977)
Confectionery	41	79	25
Dessert	20	40	15
Catering	16	16	0
Bulk	22	27	24
Own Label	41	45	0
Total	140	207	64

Source: (The Monopolies and Mergers Commission 1979, §68, §131, and §165)

In contrast, in 1939 Wall's offered an extremely narrow range of products consisting only of 4 product types⁷¹⁴. One of the main strategies used by Wall's and Glacier to develop the market and retain consumer interest throughout the entire period covered by the report emphasised offering variety and novelty to consumers. To the extent that the broadening of the scope of the behaviour setting scope through the increase in the number and types of retail outlets stocking ice cream even evoked increased competition from similarly marketed imperfect substitutes. Indirect competition compelled ice cream manufacturers to continually offer more variety and greater novelty (and, perhaps, this increased variety and novelty in ice cream products generated further variety and novelty within the categories of imperfect substitutes)⁷¹⁵. In addition, both Wall's and Glacier pointed out that secondary manufacturers providing directly substitutable products could only be combatted through further and continual emissions resulting in product variation and novelty to maintain the extensive comprehensiveness of the product ranges⁷¹⁶. The impulse trade was characterised by consumers highly sensitive to wider product ranges than the grocery trade, and, subject to competitive prices, greater considerations of the extent of product quality, innovation, and brand equity⁷¹⁷. The series of acquisitions by Glacier in the 1960s illustrates the attempts by the organisation to broaden the variety of its product lines and acquire innovative products⁷¹⁸.

Increased variety and novelty resulted in increased complexity. Arguably, increasing variety may have, together with the similar efforts of suppliers of imperfect substitutes and despite the associated patterns of punishment⁷¹⁹, reinforced variety-seeking behaviour among consumers themselves⁷²⁰. In any case, the generation and variety among manufacturers functioned to improve their susceptibility to patterns of reinforcement on a variable ratio schedule specified by the contingencies relating to consumer purchase and consumption patterns of the impulse product class.

⁷¹⁴ Refer to the Ice Cream Report (1979, §64).

⁷¹⁵ Refer to the Ice Cream Report (1979, §27).

⁷¹⁶ Refer to the Ice Cream Report (1979, §336, §340, §164).

⁷¹⁷ Refer to the Ice Cream Report (1979, §36, §39, §67, §107-8,).

⁷¹⁸ Refer to Section A5.10.1 on the subject and on the acquisition of Bertorelli's high quality premium ice cream, for example.

⁷¹⁹ The aversive effects of increasing and maintaining variety on such areas including production and marketing are discussed in Section A5.4.1.

⁷²⁰ There is no direct evidence to support this latter conclusion.

Third: Associated with maintaining comprehensive product lines were efforts in product development and innovation, technical and technological progressiveness, and related research and development. These practices were characteristic of the emissions of Wall's since the emergence of mass production. And, as shall be discussed, Wall's increased these practices during the 1960s. Glacier also included comments on its efforts in following others' innovations and producing its own⁷²¹. Product development, in turn, functioned to further intensify competition and fuel consumer demand patterns (and variability therein). Wall's argued that "without innovation and the frequent introduction of new and varied lines, overall sales would fall and it would be more difficult to retain retail outlets" (Monopolies and Mergers Commission 1979, p. 119). To the extent that relinquishing expenditure on innovation and advertising would only permit a 2.5% to 3% reduction in prices (i.e., an average 10 pence per product) which would have a negligible effect on quantities sold⁷²².

Technical progressiveness was demonstrated in the installation and operation of increasingly more modern sophisticated production equipment that could handle the wide variety of product lines on offer and significantly large scale production volumes to support mass consumption in a way that *avoided* some of the aversive consequences of competition from secondary manufacturers⁷²³. This trend already appeared during the 1950s when increases in demand occasioned the development of and investment in higher output equipment capable of handling an ever-increasing variety of ingredients and product packaging⁷²⁴. The Commission also remarked that Wall's business developed on the basis of its proprietary manufacturing and distribution equipment⁷²⁵.

The Commission concludes that these innovations emitted within the consumer behaviour setting were indeed "genuine" (Monopolies and Mergers Commission 1979, p. 202) remarking "the increased sophistication of new product development" having had an effect on consumer demand over the years (Monopolies and Mergers Commission 1976, p. 11).

Fourth: One of the sources of variability (especially among the adult segment⁷²⁶) related to the nature of marketing impulse products. As part of the product and market development efforts, Wall's and Glacier appeared to be actively attempting to develop a niche of speciality ice cream – a relatively high quality premium confectionery product with very distinctive branding marketed in specific locations, particularly in cinemas, theatre, entertainment outlets⁷²⁷ and in catering⁷²⁸. The effort by Wall's seems to have appeared later than that of Glacier⁷²⁹. Whereas Wall's mode of entry within this niche was first

⁷²¹ Refer to the Ice Cream Report (1979, §164; see also §336, §340).

⁷²² Refer to the Ice Cream Report (1979, §335).

⁷²³ Refer to the Ice Cream Report (1979, §57, §74-76, §166-175). Appendix 24 to the report contains examples of the technical and technological progressiveness and innovations introduced by Glacier within its factories.

⁷²⁴ Refer to the Ice Cream Report (1979, §30).

⁷²⁵ Refer to the Ice Cream Report (1979, §63).

⁷²⁶ Refer to the Ice Cream Report (1979, §13).

⁷²⁷ Refer to the Ice Cream Report (1979, §13).

⁷²⁸ Refer to the Ice Cream Report (1979, §17).

⁷²⁹ Section A5.4 details the efforts by Wall's in this respect.

importation and later manufacturing⁷³⁰, Glacier acquired Bertorelli's a manufacturer of "distinctively high quality products" (Monopolies and Mergers Commission 1979, p. 53, §141) in 1965⁷³¹. These products were a "more expensive special dessert" (Monopolies and Mergers Commission 1979, p. 60, §163) aimed principally at the catering trade for consumption among the members of the upper end of the market⁷³². Glacier expanded distribution of this product wherever there was demand.

Fifth: An additional and recurring strategy that consumer demand patterns occasioned among national manufacturers was improving the number *and* quality of retailer types on the books to capture as many occasions for ice cream purchase and consumption as possible.

Sixth: The national manufacturers engaged in extensive market research and weather forecasting⁷³³. With respect to the latter, both Wall's and Glacier used advanced statistical modelling designed specifically to attempt to isolate the variability of sales due to weather from other factors⁷³⁴. This form of forecasting was already in use by Glacier since the mid-1950s and was particularly useful in performance monitoring and production planning. There is no evidence to suggest that Glacier implemented this form of forecasting first or when Wall's started using this method of forecasting. Suffice it to say that such exploratory behaviour functioned to increase understanding the relevant contingencies effecting sales, profits, and localised variability and to reduce the aversive effects of uncertainty on the business.

Finally, it should be noted that these demand related factors also regulated the *effectiveness* of the reinforcers (sales and profits) and punishers (costs of production, marketing, retailing). As such, given the history described so far, these environmental conditions functioned to withhold or award reinforcement to those involved in the ice cream trade effecting their levels of deprivation and the extent to which respective business models were satisfied.

C: Variations and Variability in Consumer Demand as Motivating Operations

By the mid-1960s the shifts in consumer demand patterns and the related variability in those patterns experienced by Wall's in its learning history acquired motivating rather than discriminative function.

The learning history of Wall's, its business model, the acquired sensitivity of its behaviour to the relatively high fixed overheads associated with (1) its existing large-scale operation⁷³⁵, (2) an increasing sensitivity of the marketing practices of Wall's to relatively unpredictable variability of the flow of the net patterns of reinforcement contingent upon trading under an increasing variability of demand (due to the weather and other factors), (3) its plans for continued expansion,

⁷³⁰ See Section A5.4.3A.

⁷³¹ Refer to the Ice Cream Report (1979, §149).

⁷³² Refer to the Ice Cream Report (1979, §149, §193).

⁷³³ Sections A5.2.2 and A5.2.3 explain the types of information each manufacturer collected on the market and the various sources from which this information was collected.

⁷³⁴ Refer to the Ice Cream Report (1979) paragraphs 25, 62 (fn. 1) and 155 (fn. 2).

⁷³⁵ Refer to the Ice Cream Report (1976, §66).

and, (4) its recurring objectives of growth and positive return on capital employed⁷³⁶, *established* more prominently the *punishing effects* of long-term decreases in sales due (1) to the successive bad seasons occurring early in the 1960s, (2) to the emerging signs of an imminent decline in the traditional trade (especially the decrease in the number and the importance of CTNs among consumers), and, (3) to the adverse effects the introduction of and subsequent increases in the purchase tax⁷³⁷. These aversive events threatened the significant investments Wall's made in the market since the 1920s and the returns it accumulated over the years. The factors unique to Wall's *established* and intensified the effectiveness of the punishing effects of the various aversive environmental events (the *value-altering effect*).

The evidence shows that Wall's increased or refined the behaviours typically occasioned by demand variations and pattern variability (the *behaviour-altering effect*), namely, technical and technological progressiveness (including replenishment of its existing capital base), rationalisation and reducing the relative cost burden of the large-scale operations in production, distribution and marketing, increasing product variety, generating novelty through product development, and exploratory behaviour through market research and market development (including increasing the number and the quality of retail outlet types).

First, between 1962 and 1964 it invested heavily in extensively modernising its production facilities in Gloucester to include highly automated, computerised, and mechanised facilities that allowed a more extensive and comprehensive product range to be manufactured. Second, the new plant also included redesigned layout and production methods. Third, the equipment used by Wall's was proprietary designed and developed by its engineering team. Fourth, Wall's placed emphasis on further product innovation and broadening product lines. Fifth, Wall's also utilised more sophisticated market research techniques to identify opportunities for developing new products. Sixth, Wall's embarked into developing the grocery trade diversifying from its reliance on the traditional segment⁷³⁸ while improving increasing the number and the quality of retail outlet types within the traditional trade as part of its on-going operations within the segment. Wall's continued offering outlet and freezer exclusivity even to the smaller entities within the grocery trade⁷³⁹. Seventh, the value-altering effects also probably instigated the formation of Wall's-Whippy in order to shed direct mutuality-plus-exchange relations with consumers.

A5.3.4 Development of Refrigeration Technology and the Proliferation of Home Freezing

The analysis of the Report also suggests that development of refrigeration technology together with the emergence of nationwide refrigerated value chain

⁷³⁶ Refer to the Ice Cream Report (1976, §61).

⁷³⁷ Refer to the Ice Cream Report (1976, §66).

⁷³⁸ Refer to the Ice Cream Report (1976, §66).

⁷³⁹ Refer to the Ice Cream Report (1976, §316).

and the proliferation of home freezing as an additional environmental agent of change that propelled the industry forward⁷⁴⁰.

For the sake of providing an overview, however, the following features emerging from the Frozen Foodstuffs Report (1976) have particular resonance. First: Described as one of the fastest growing sectors in the UK, the origins of the frozen food manufacturing (including confectionery) industry lie in the period between the two world wars with substantial growth being a phenomenon tied to the post second world war period⁷⁴¹. Expansion of the frozen food industry was facilitated by post-war technical developments in frozen food production. For example, Bird's Eye pioneered consumer-sized packaging of frozen foods for nationwide distribution through a network of retailing establishments⁷⁴².

Second: During the years immediately after WWII, the growth of the quick freezing industry was hampered by the absence of networks (especially nationwide) for distributing frozen foods to wholesalers and retailers. The main aversive consequences of operating frozen food distribution included considerable capital investment in cold storage, refrigerated distribution from plant to storage to wholesaler and retailer as a prerequisite to manufacturing, and appropriate refrigeration at retail store level as a prerequisite to maintaining product quality. The Frozen Foodstuffs Report also claims that manufacturing companies seeking regional or national coverage found it necessary to establish proprietary distribution systems, which increased the incidence of costs⁷⁴³. This is especially apparent when one considers, for example, the histories in the ice cream market of both Wall's and Glacier explained earlier in this section.

It is reasonable to conclude that given these considerable investments and recurring expenditure in maintaining a cold chain of production and delivery, the environment would favour either of three strategic options available to ice cream manufacturers: (1) exiting the industry (at one extreme); (2) approaching the segment through niche marketing strategies serving a small sector of the consumer market well (for example, some secondary manufacturers could compete effectively and profitably in the production and supply of ice cream either by focusing on a specialist range of products (e.g., bulk ice cream) or by distributing within a relatively smaller geographic area thus being able to serve customers more quickly and flexibly); and, (3) taking full advantage of the true potential of the market through manufacturing and selling high volumes of this

⁷⁴⁰ This is inferred from the frequent references by the Commission to a parallel investigation into the supply of Frozen Foodstuffs conducted by Monopolies and Mergers Commission (1976) that also featured one of Unilever's subsidiaries in competition with JLC.

⁷⁴¹ According to the Frozen Foodstuffs report there are 4 main categories of frozen foods, fish, vegetables, meat, and confectionery and fruit. In 1964, confectionery and fruit accounted for 10.5% of the total tonnage consumed in the UK. In 1973, the percentage increased to 12.3%. In 1964 the percentage of the total tonnage of confectionery and fruit that was frozen stood at 0.5% and climbed to 2.19% by 1973. The share of the frozen confectionery and fruit segment in relation to total frozen foods climbed from 3.7% in 1964 to 7.3% in 1973 respectively. Refer to Section A5.12 were Appendix 3 is reproduced.

⁷⁴² Refer to the Frozen Foodstuffs Report (1976, §14, §19, §21)

⁷⁴³ Refer to the Frozen Foodstuffs Report (1976, §20). This raises the question whether technology available to Bird's Eye was easily transferable to Wall's via their shared Unilever shareholding. It does seem that in the post-WWII period Wall's followed a similar strategy to Bird's Eye (Refer to the Ice Cream Report (1979, §30, §340)).

frozen food product⁷⁴⁴. It is reasonable to conclude that generating such high volumes meant an organisation establishing regional or national coverage (hence, the strategies described earlier). According to the Frozen Foodstuffs Report⁷⁴⁵, national coverage required heavy investments in the advertising of frozen foods. The net result was severe financial burdens upon industry players including the larger players despite the rapid growth of demand characterising the 1950s and 1960s⁷⁴⁶. Advertising also played an important role in the ice cream market especially with regard to establishing national brands.

Third: By the early 1950s, among the firms emerging as the prominent manufacturers and distributors of frozen foods were Birds Eye Foods Ltd and J Lyons & Company (Monopolies and Mergers Commission 1976, §23). By the late 1950s, Bird's Eye achieved dominance at retail with its growth fuelled by scale economies achieved in procuring and distributing frozen foods. This dominance triggered consolidation in the market via a series of acquisitions and mergers so that by the 1970s only three main suppliers remained.

Fourth: Two additional and relevant developments reported in the Frozen Foodstuffs report emphasise and shore the evidence reported in the Ice Cream investigation. First, during the period 1950 and 1970, there was a shift within the grocery trade from independent (relatively small) grocery stores to supermarket chains. Second, the introduction and development of specialist frozen food retail outlets (home freezer centres) that targeted and supplied households owning freezers. The parallel proliferation of freezers among households is of note. The Frozen Foodstuffs Report indicated the enormous leap in the number of home freezer owners in the UK from 36,000 households in 1967 to 850,000 households in 1973. By 1974, 18.7% of households sampled by the National Food Survey owned a freezer⁷⁴⁷.

A5.3.5 Total Investments Ltd

Until around 1964 a major refrigeration supplier performed freezer cabinet installation, servicing, and maintenance at various retail outlets, on behalf Wall's. When the supplier decided to terminate its servicing arm, Unilever and Glacier formed Total Refrigeration Limited (later renamed as Total Investments and reorganised⁷⁴⁸) to assume this role. Total was also responsible for sourcing and purchasing all refrigeration equipment including the cabinets according to the specifications of its customers as well as installing and servicing vehicle refrigeration and cold store equipment on a cost recovery basis. The newly formed specialised organisation provided the service to Glacier and Wall's, their subsidiaries, and associated companies (including, for example, members of the Unilever and JLC groups) but not to any other ice

⁷⁴⁴ Indeed, the Commission notes: "Wall's and Lyons Maid developed their national brands by increasing the product variety and their range of distributive outlets, while many small-scale makers retained their position as ice cream suppliers often as family businesses with purely local sales" (Monopolies and Mergers Commission 1979, p. 13, §30).

⁷⁴⁵ Refer to the Frozen Foodstuffs Report (1976, §20, §22).

⁷⁴⁶ Refer to the Frozen Foodstuffs Report (1976, §22).

⁷⁴⁷ Refer to the Frozen Foodstuffs Report (1976, §30).

⁷⁴⁸ For more information on the scope of the reorganization refer to the Ice Cream Report (1979, §212). As such the reorganisation has no bearing on the case. Neither Unilever nor Glacier maintained control of Total Investments.

cream manufacturers. The main benefits of the formation of this new specialised organisation included (a) economies of scale in sourcing equipment and in servicing such equipment, and, (b) providing access to the skill base of Total in industrial refrigeration. All equipment remained the property of or was leased to Glacier or Wall's⁷⁴⁹.

Total Investments thus functioned to reducing the costs involved with managing freezer exclusivity contracts.

In 1970, Total created a subsidiary, Barnwoods Insurance Company Ltd to provide on an exclusive basis the customers of Wall's and Glacier with insurance against losses arising from the deterioration of ice cream as a result of breakdown from refrigerated cabinets provided by the two rivals⁷⁵⁰.

A5.3.6 The Performance of Wall's until 1970

There is very little quantitative evidence offered by the Commission with respect to Wall's performance prior to 1972. The evidence available suggests that right up until the early 1960s Wall's benefitted from an increasing growth in sales, market share, and profitability. After these years the firm seems to have struggled with declining demand due to bad weather, taxation, and general stagnation. The grocery trade, on the other hand, provided some opportunity for growth. However, the level of competitor encroachment was significant in this area.

A5.4 The Practices of Wall's During the 1970s

A5.4.1 The Market Problem Faced by Wall's During the 1970s

The 1970s (especially the period between 1972 and 1977) were one of intensified competition and continually changing business conditions⁷⁵¹. Wall's entered the 1970s facing a substantial market problem of increasing salience and proportion. One of the more fundamental dimensions faced by Wall's is best summarised in the Commission's own words: "Wall's explained that its business was built up to serve consumer demand through outlets in the traditional trade (and it still relied heavily on this trade for the distribution of confectionery products) but it had been compelled to develop outlets in the grocery trade over recent years and its experience was that there has been a movement towards greater discounting and from the more profitable 'impulse' to the less profitable 'take-home' sector. The process of change between outlets had continued into 1977" (Monopolies and Mergers Commission 1979, p. 28, §72).

The evidence describes a seven year period of gradual and on-going change in the practices of Wall's that is analogous to the operant process of shaping via differential reinforcement that also saw the discontinuation of outlet exclusivity

⁷⁴⁹ Refer to the Ice Cream Report (1979, §213).

⁷⁵⁰ Refer to the Ice Cream Report (1979, §215).

⁷⁵¹ Refer to the Ice Cream Report (1979, §342).

in the repertoire of Wall's in 1975. As may be surmised from previous sections, the class of practices typically emitted by Wall's in the traditional trade (impulse) segment was maintained by a relatively high pattern of utilitarian and informational reinforcement within an environment best characterized as a virtual duopoly. The rules governing competitive behaviour within the traditional trade emphasized wider product ranges and a greater emphasis on product quality, innovation, and brand reputation⁷⁵². The two main rules governing competition in the grocery trade were (a) adopting strategies appropriate for a highly price-conscious sector, and, (b) offering alternative selling propositions that reflected a lesser reliance on the provision of freezers (hence, difficulty in pitching freezer exclusivity) and a tendency to shun outlet exclusivity⁷⁵³.

Wall's' inculcated orientation towards the traditional trade and its history of being a pioneer and relatively more innovative in contrast to other manufacturers have already been noted. Therefore within an environment characterised by the increasing importance of the grocery trade, on the one hand, and the stagnation and decline in the traditional trade segment, on the other, the acquisition of a new set of repertoires more appropriate to satisfying the reinforcement criteria of supermarkets and home freezer centres would seem a reasonable expectation of Wall's practices.

The shaping of novel repertoires or of adapting existing ones to suit the changing market conditions was slow and on-going especially because of the extent of the investments made by Wall's in developing and mastering the traditional trade over the previous decades and the degree of permanence in the relative growth of the grocery trade and decline of the traditional trade could only be anticipated. In addition, the changes that occasioned and fuelled the grocery were themselves gradual⁷⁵⁴.

The quantitative evidence available does present a compelling broad indication into the gradual changes that Wall's was experiencing during the time: Panels (b) and (d) of Figure 184 show that although Wall's dominated in terms of net sales values, its share of volumes declined. By 1975, secondary manufactures surpassed both Glacier and Wall's in terms of aggregate volumes of ice cream supplied to the market. In all cases, the fast rate of growth by the secondary manufacturers may be observed between 1972 and 1973⁷⁵⁵.

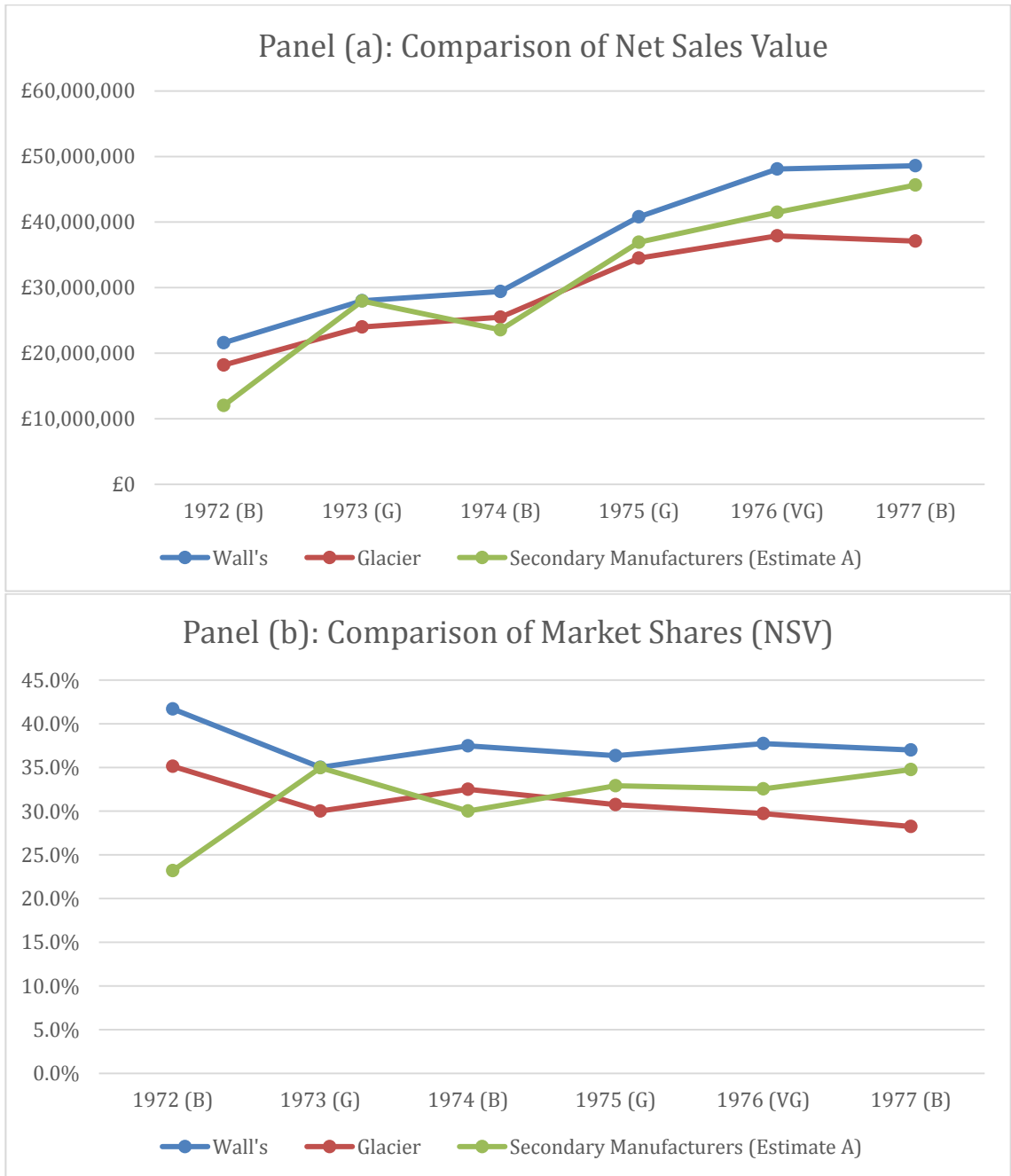
⁷⁵² See Section A5.3.3B.

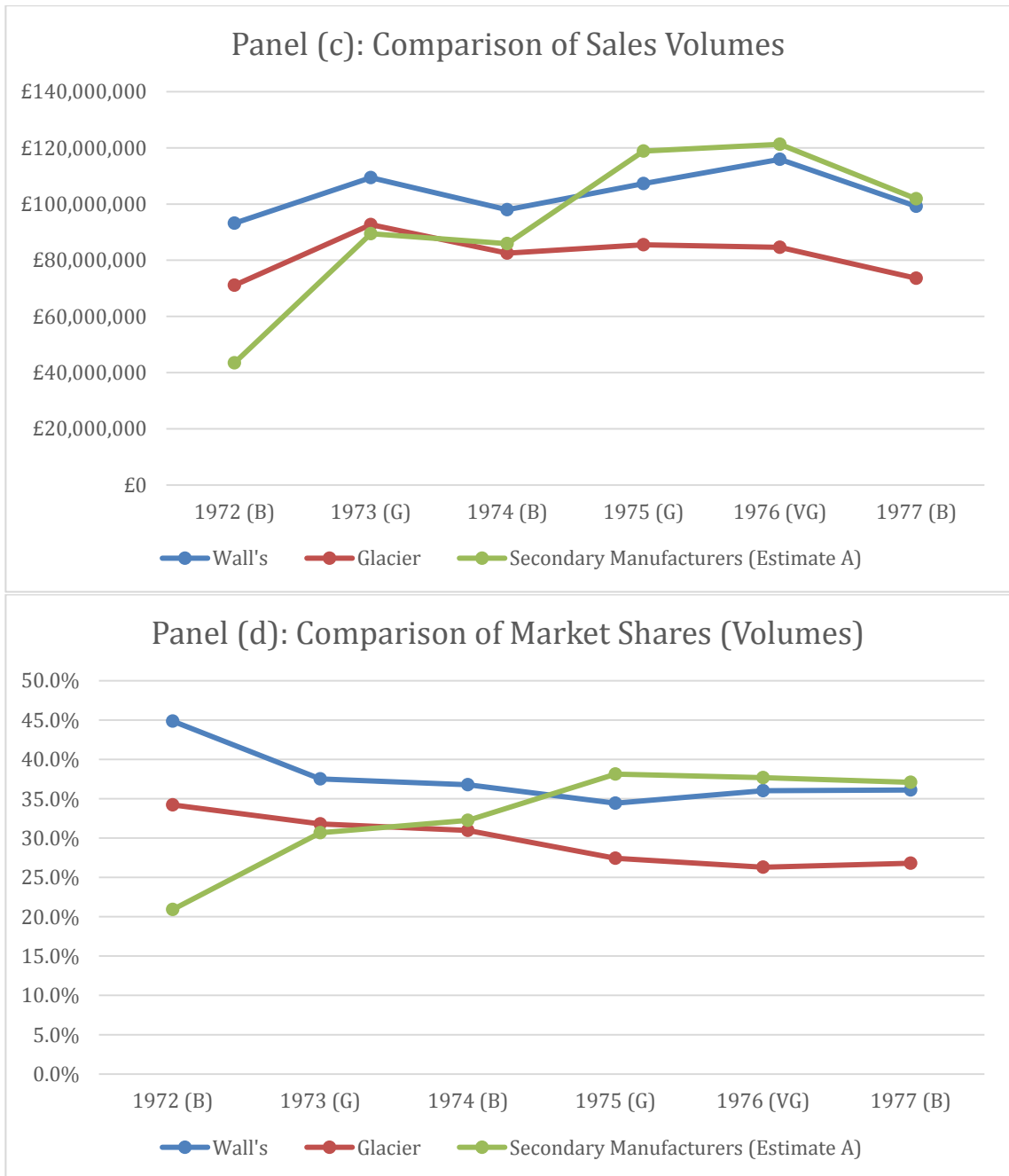
⁷⁵³ See Section A5.9.1 with respect to the views of interested parties who seem to have favoured freezer exclusivity but who, on the whole, opposed outlet exclusivity.

⁷⁵⁴ See, for example, the Ice Cream Report (1979, §37-38). When presented with the estimates provided by Wall's with respect to the distribution of consumer expenditure among the various retail outlets, the Commission was convinced of the general upward/downward trends in the two segments and of the fast-growing importance of the products sold through larger grocery outlets (namely, multipacks, bulk products and dessert ice cream). However, it was unsure with respect to the extent to which the grocery trade grew at the expense of the traditional trade, and believed that the fast growth rate in take home products would slow to a lower rate of increase (Refer to the Ice Cream Report (1979, §37)).

⁷⁵⁵ The analysis is based on the lower limit of estimate provided by the Commission. For further details refer to Sections A5.6.4, A5.7.2, and A5.7.3. It should be noted that the Commission stated that the figures it estimated for sales volumes were less reliable than the estimate it produced for net sales value (1979, Appendix 4).

Figure 184 – Comparisons of Sales Values and Volumes and respective Shares of Wall's vis-à-vis Competition



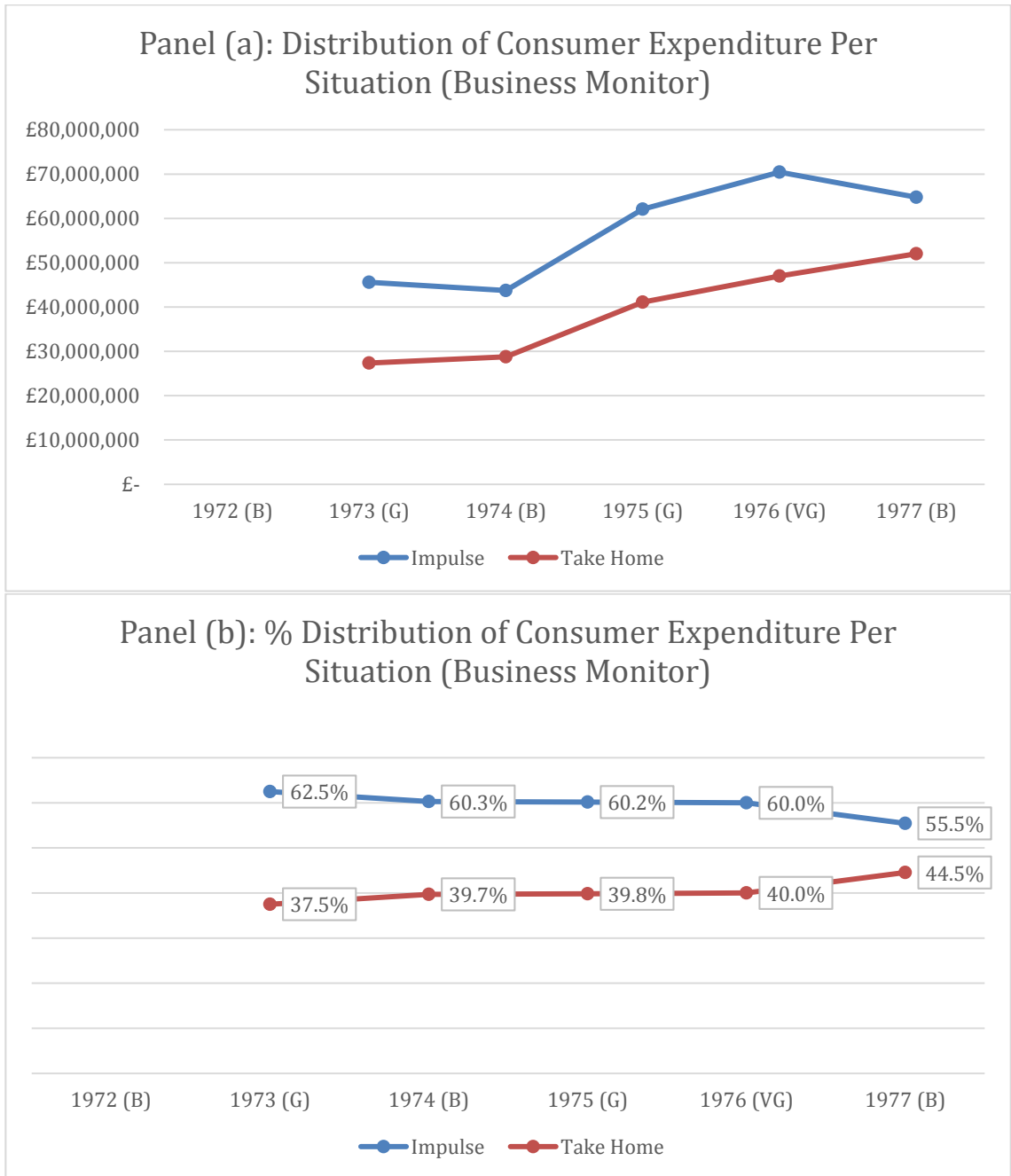


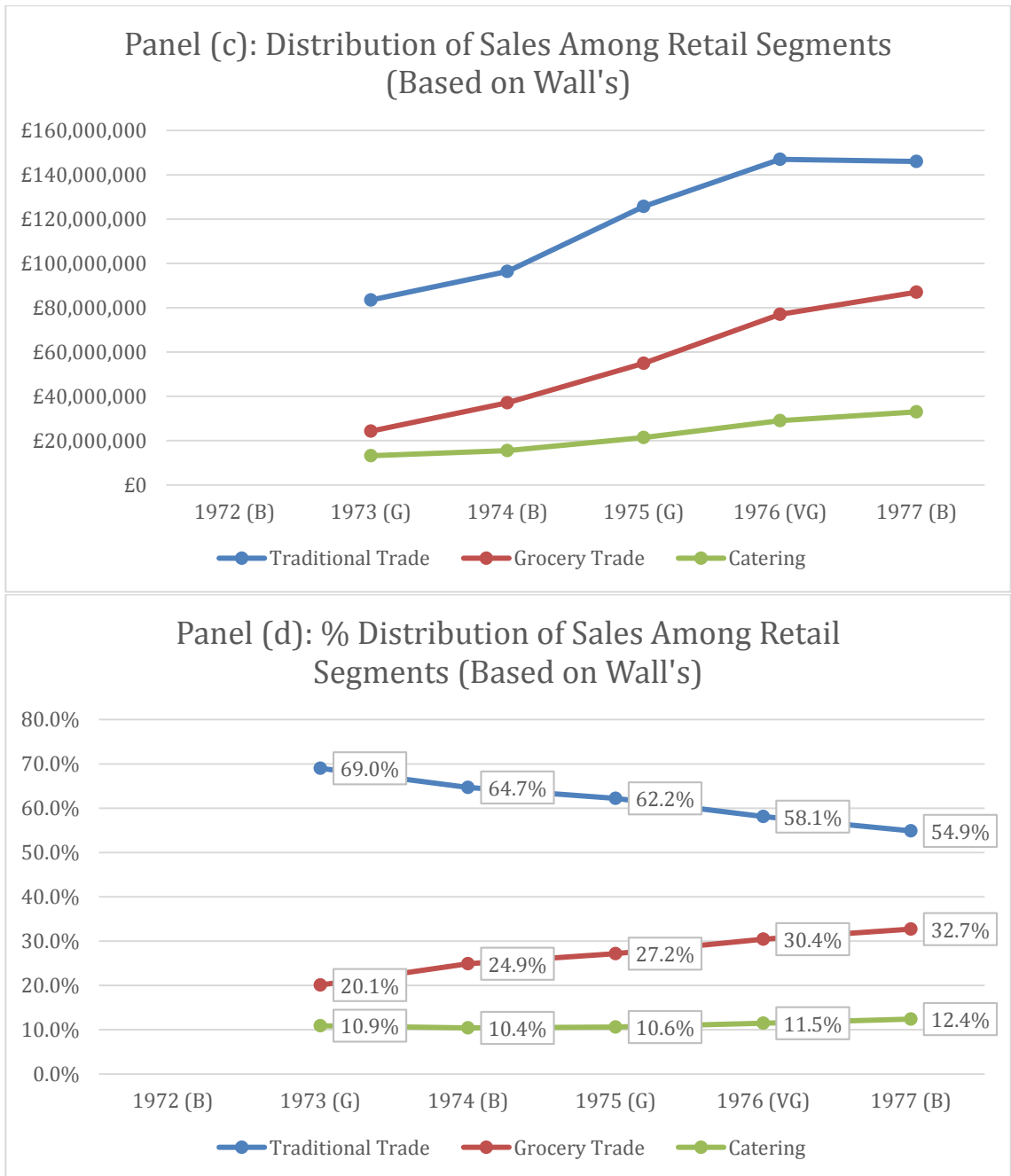
Section A5.7.1B to A5.7.1E

Figure 185 presents unverifiable estimates produced relying on the quantitative evidence provided the BSO and Wall's and the qualitative definitions of the consumer situations and retail segments within the report. The figures provide further insights into the declining importance of the traditional trade and the rising importance of the grocery trade at the intersection with the impulse and take home situations and products⁷⁵⁶.

⁷⁵⁶ It should be borne in mind that there were reservations with respect to the accuracy of these estimates and the issue of overlap made estimation difficult. See Sections A5.2.3, A5.6.4, A5.7.2, and A5.7.3 for the derivation of these estimates, the problems in their compilation recorded by the Commission, and the problems with regard to the overlap of the products sold in each segment and to each consumer situation.

Figure 185 – Estimated Distribution of Sales Between Consumer Situations and Among Retail Segments

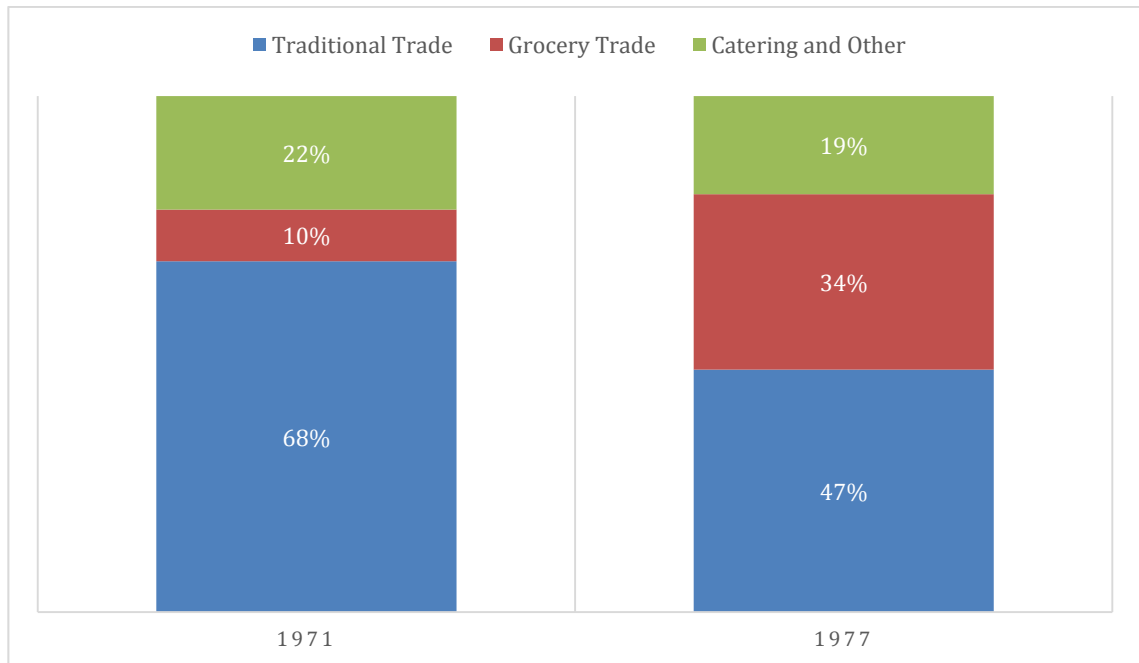




Source: Sections A5.7.2, A5.7.3, and A5.6.4

Thus, the 1970s were a period of transition with traditional trade practices coexisting with the newer ones within the grocery segment because both classes were reinforced. For example, Figure 186 shows the change in the mix of Wall's sales to the different retail segments following the changes occurring in the market.

Figure 186 – Wall's Sales Mix among Retail Segments (1971 and 1977)

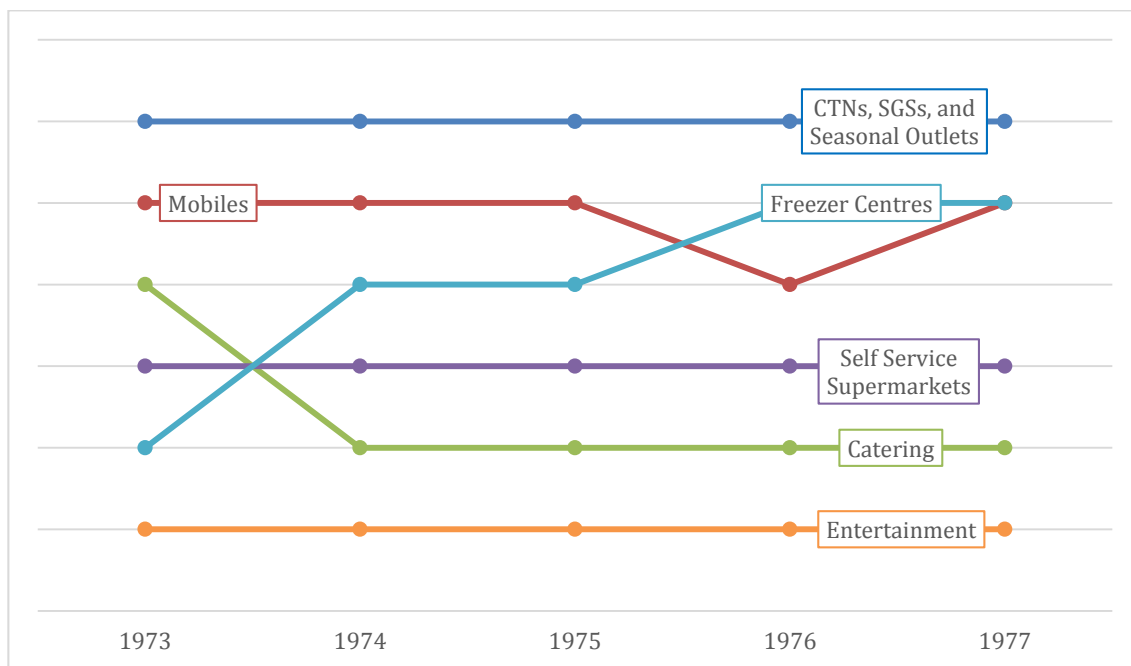


Source: Section A5.7.2E

The estimates that Wall's provided with respect to the distribution of consumer expenditure among various retail outlet types yields an indication of the possible salience of each outlet type to the firm as a route to patterns of reinforcement (Figure 187). CTNs and SGSs remained the more important outlet by way of total consumer expenditure during the 5 years while the major change seems to have been occurring among freezer centres whose importance rose to share a second place with mobile sites. Catering declined in importance while super markets remained relatively important.

This suggests a further reason why traditional trade practices resided in parallel to the practices geared towards the emerging grocery segment: consumer expenditure reinforced a focus on *both* segments during the period and the amount of consumer expenditure at CTNs, SGSs and seasonal outlets relative to the other outlet types remained the highest.

Figure 187 – Ranking of Outlet Type According to Consumer Expenditure at Consumer Prices (1973 – 1977)



Source: Section A5.7.3F

The practice of freezer exclusivity was maintained because of a number of reasons, as shall be seen from Section A5.4.5. Clearly, however, the manner in which Wall's was organised required maintaining sufficient sales volumes despite the negative downturns in the traditional trade and increasing rival encroachment in the grocery trade⁷⁵⁷.

To provide a more comprehensive interpretation of the influences of the environment on Wall's practices and on the patterns of practices emitted by Wall's in interaction with its changing environment, it is essential to analyse the history of the 1970s with special reference to the elements of the managerial behaviour setting of Wall's (Section A5.4.2) and each of the main bilateral contingencies of reinforcement with rivals (Section A5.4.3), consumers (Section A5.4.4), and retailers (Section A5.4.5).

A5.4.2 The Elements of the Managerial Behaviour Setting

The preceding sections demonstrate how the various elements delineating the managerial behaviour setting of Wall's, namely, business model, managerial objectives, learning history, and levels of deprivation, function as rules governing the behaviour of the firm in interaction with its environment. The evidence with respect to these elements during the early years was relatively patchy – the Commission did not provide much information on such issues as changes in objectives over the years, the influence of Unilever during the period covered so far, and the aspects of performance prior to 1971.

⁷⁵⁷ As stated earlier, the grocery trade was a market Wall's had originally pioneered to reduce its susceptibility to the significantly aversive consequences of the all the sources variability in its sales, costs, and profits within the traditional trade.

A: Learning History

Figure 188 presents a summary of the sensitivities of behaviour to the patterns of reinforcement and punishment signalled by the consequential stimuli in the behaviour setting and by the extent of relative setting scope stricture therein acquired over its learning history to the beginning of the second generation-situation.

Figure 188 – Summarised Learning History of Wall's (1922 to 1969) and Acquired Susceptibilities

Learning History

The practices of Wall's have been shaped, maintained, and weakened by the patterns of utilitarian and informational rewards contingent upon mass consumer marketing as supported via (1) a nationwide refrigerated network of retailers of all types and covering as many purchase and consumption situations as is possible, and, (2) large scale manufacturing and distribution. • Utilitarian Reinforcement was predominantly a function of sales and profits • Utilitarian Punishment was a function of costs of operation (production, distribution, marketing), of product development to generate variety and novelty, of market maintenance and development, and of technical and technological progressiveness • Informational Reinforcement and Punishment patterns were a function of increases and decreases in market share, profitability, extent of scale economies, real growth, and of return on average capital in relation to the contingencies expressed in 'Five Year Plans' and 'Annual Operating Plans and Capital Budgets' submitted and approved by Unilever. • Sales and profits were a function of (1) Rate and strength of Consumer Approach and extent to which approach terminated in exchange at any given retail location (and in aggregate); (2) Rate and strength of Consumer Escape Avoidance of ice cream (the product category) and its brands, and, extent to which escape-avoidance terminated in exchange with rival brands and imperfect product substitutes at any given retail location (and in aggregate); (3) Costs associated with large scale manufacturing, mass refrigerated distribution and retailing, and mass consumer marketing. For example, relatively high fixed overheads inherent to large scale production. • These elements are interpreted as *reinforcers* and *punishers* on the basis a fifty year history.

Regulation of Patterns of Reinforcement and Setting Scope Qualification

Environmental Conditions Effecting Regulation of Patterns of Reinforcement and the manner in which these operate. • The Setting Scope Qualification effects by the various environmental and the manner in which these operate: imperfect and imprecise information, seasonality and within-season fluctuations, requirements particular to the manufacture (including production technologies), storage, distribution of ice cream, technological contingencies related to large scale production, the organisation of an independently-owned and specialised retail trade as these reflect ice cream purchase and consumption situations, the organisation of an independently-owned and specialised distribution channel, consumer demand trends and variability of patterns therein.

Acquired Susceptibilities

Wall's appears to have acquired susceptibilities to the positive and aversive consequences on its business by: (a) the availability of more precise and comprehensive information about environmental conditions, the performance of firms (self and others) given these conditions, and the possible opportunities and threats on offer (and associated considerations of uncertainty and the level of complexity of the various contingencies operating independently, simultaneously and in combination with each other); (b) seasonality and the cumulative effects of the within-season fluctuations in weather; (c) the special requirements of producing, storing, and distributing ice cream; (d) the technological dimensions of ice cream production and the contingencies implied by large scale manufacturing as a route to mass consumption; (e) issues with respect to large scale operations (as defined in the business model); (f) the volume of consumer exchange in its brands, to extent of access to various consumer situations via different retailer types, to the types of products that could be placed on offer to consumers, and, to the degree of variability in consumer approach within and across consumer situations; (g) the quantity and quality of retailer types across available consumer situations and the degree to which these retailer types are homogenous types and amenable to a clear-cut categorisation into relatively unique market segments; (h) the conditions that effected the traditional trade as the main source of business for Wall's and the main market around which its business had been designed and developed; and, (i) Level and Cumulative Effects of Past Performance.

Source: Section A5.3

B: Mutuality plus Exchange Bilateral Contingency Relations with Unilever and Managerial Objectives

The nature of relationship between Wall's and Unilever is relatively unexplored within the evidence probably because it appears that the latter allowed both

Wall's and Treats to operate with a significant degree of latitude and autonomy⁷⁵⁸.

The presence of Unilever as a shareholder in Wall's functioned to qualify the setting scope and regulate the patterns of reinforcement of the latter in the following ways:

First, Unilever monitored the performance of Wall's exercising a relatively broad control over its operations while providing a range of management and advisory services⁷⁵⁹. Wall's, via its centralised Operations Planning Department and according to the rules stipulated by the board approved Company Operating Guidelines, was required to draw up and keep updated Five Year Plans and Annual Operating Plans and Capital Expenditure budgets covering various aspects of the business including projections. On a quarterly or more frequent basis Wall's was expected to provide feedback on its level of achieved and projected performance with respect to sales, profits, cash flows, return on capital employed, and other financial and efficiency metrics⁷⁶⁰. Thus, informational reinforcement and punishment from Unilever by way of an assessment and appraisal of the level and accuracy of performance according to set plans and budgets appears to have operated on a *fixed interval schedule of reinforcement*.

Unilever examined these metrics in relation to the plans, budgets, and projections providing feedback as was necessary through the Chairman/CEO of the organisation and other full-time executive board members. Unilever also conducted regular management and efficiency audits providing further feedback on the level and accuracy of Wall's performance as a firm within the ice cream market⁷⁶¹. In this manner, Unilever established the underlying operating principles (e.g., stocks to sales ratio, trading profit to NSV ratio⁷⁶²) and the patterns of utilitarian and informational reinforcers and punishers that governed Wall's behaviour within the market place. For example, Wall's considered (and probably Unilever approved) that 8% was the minimum acceptable after tax return on capital employed calculated on a replacement cost weather corrected basis⁷⁶³. Thus it is reasonable to infer that Unilever's presence and the metrics it stipulated as rules to govern the behaviour of Wall's also functioned to make market events more or less salient within the latter's marketing situation at retail. Thus, metrics indicating aversive declines were primed by these rules. Among the more salient reinforcers and punishers established by Unilever were (a) measurements of volume performance against targets calculated to take into account variations in the weather, the market, and competition, and (b) financial objectives expressed in terms of accounting ratios to provide a relatively comprehensive understanding of the return on capital⁷⁶⁴. The various metrics employed functioned to specify the relative frequency with which behavioural emissions were to be followed by reinforcers or punishers on a *ratio or interval*

⁷⁵⁸ Refer to the Ice Cream Report (1979, §59).

⁷⁵⁹ The nature of the services provided by Unilever to Wall's are detailed in (§59).

⁷⁶⁰ Refer to the Ice Cream Report (1979, §59-61).

⁷⁶¹ Refer to the Ice Cream Report (1979, §59-61).

⁷⁶² Refer to the Ice Cream Report (1979, §61 fn. 2).

⁷⁶³ Refer to the Ice Cream Report (1979, §105, §246). Paragraph 246 explains how the metric was calculated.

⁷⁶⁴ Refer to the Ice Cream Report (1979, §61, §105, §246).

schedule. Unilever stipulated the debtors to sales ratio⁷⁶⁵, for example, as a measure of the percentage of turnover that remained outstanding. Improvement in debt collection, for example, would improve the ratio schedule implied by debtors to sales. A reduction in the time element of credit terms across debtors would generally improve the interval schedule by reducing the time before debtors paid outstanding amounts. In addition, Unilever stipulated Wall's criteria of reinforcement via the specification of targets and the approval or rejection of the objectives and projections (as precurrent informational stimulus events).

Second, Unilever charged a fee for management and advisory services rendered⁷⁶⁶. As a cost, the fee functioned as a utilitarian punisher reducing the quantity and quality of patterns of reinforcement contingent upon ice cream trading by reducing profits, profitability, and the attainment of scale economies since the fee increased fixed overheads. The fee operated analogously to a *ratio schedule of reinforcement* weakening any of Wall's market practices that increased the burden of the fee on the per unit cost base of Wall's (given the requirement of scale economies, see Section A5.4.2C). Practices that decreased the incidence of the fee reduced the effect of the punisher. Three examples with respect to the abandonment of unsuccessful practices or the continuous efforts to improve the profitability of operations given the sensitivity of Wall's practices to the aversive consequences of fixed and variable overheads are: (a) a recurring concern with sales economies, rationalisation and "close integration" of manufacturing to produce as wide a range of ice cream products as possible and of distribution to channel this wide range of products to all types of retail outlets nationwide at competitive prices⁷⁶⁷; (b) the termination of newly generated product variations or of entirely new products if these fell below an expected return⁷⁶⁸; and, (c) the explanation given by Wall's with respect to the significant advantage of having a single large production facility instead of its own historical two factory circumstance⁷⁶⁹. In conjunction with other contingencies, for example, a bad season, the salience of the fee would increase since the patterns of reinforcement contingent upon selling ice cream were reduced due a decrease in demand.

Third, the rules imposed by Unilever also functioned to qualify the behaviour setting faced by Wall's. The imposition of standardised methods for recording and measuring performance described above functioned as an informational setting scope stimulus event restricting the number of ways Wall's could measure its own performance. Other methods of calculation may have also reduced the acceptable level of return to Unilever. Any opportunity that would have not contributed towards achieving a minimum 8% return would have been rejected. For example, at one point Wall's and Treats considered having a coordinated pricing policy as a means of expanding into the grocery trade. The strategy was rejected on the basis that it would have been detrimental to the business of both and, instead, opted to "go their own ways for whatever market opportunities achieved the highest profit" (Monopolies and Mergers Commission

⁷⁶⁵ Refer to the Ice Cream Report (1979, §61 fn. 2).

⁷⁶⁶ Refer to the Ice Cream Report (1979, §110).

⁷⁶⁷ Refer to the Ice Cream Report (1979, §340).

⁷⁶⁸ Refer to the Ice Cream Report (1979, §336).

⁷⁶⁹ Refer to the Ice Cream Report (1979, §80).

1979, p. 116, §326)⁷⁷⁰. Capital expenditure, the appointment of members to the Board, and employment of senior management were all subject to authorisation and approval by Unilever⁷⁷¹.

Fourth, the relationship with Unilever also provided Wall's access to Unilever subsidiaries for the purchase of raw materials as long as such offers were commercially sound⁷⁷². Such offers may have provided Wall's with advantages that were not available to other organisations. Wall's also benefited significantly from Unilever owned resources, such as SPD, which reduced its overall cost base and from the positive consequences of rationalisation occurring across the relevant members of Unilever⁷⁷³.

Thus, the behaviour of Wall's was reinforced and punished within its mutuality-plus-exchange relationship with Unilever.

Section A5.3.1 suggests that the behaviour of Wall's and Unilever shared common traits over the years.

In conjunction with the presence of Unilever, managerial deliberation was observable in (a) the objectives set by management (e.g., 8% return threshold), and, (b) in the various controls and measures imposed via an Operations Efficiency Department that kept all operations of Wall's under continual examination for improvements and changes⁷⁷⁴. Thus, management also played a role in specifying precurrent discriminative stimuli and in establishing the relative levels of reinforcement and punishment.

The organisation of Glacier shared similar characteristics⁷⁷⁵ and, on this basis alone, there is no indication with respect to whether Wall's behaviour was shaped and maintained by a relatively higher level of informational reinforcement than that of Glacier.

C: The Business Model: Rules for Delivering and Capturing Value

The business model functioned to establish the rules governing Wall's behaviour in: (1) providing value to its consumers through its pricing, comprehensive and continually innovative quality product offering, branding, advertising, and logistical strategies and expressed in terms of quantitatively and qualitatively rich patterns of utilitarian and informational reinforcement that matched their reinforcement criteria; (2) providing value to its retail customers through the delivery of a prominent and commercially successful portfolio of brands that contributed a profitable turnover in relation to perfect and imperfect substitutes; and, (3) capturing value in terms of sales, profits, market share,

⁷⁷⁰ Refer also to the Ice Cream Report (1979, §67).

⁷⁷¹ Refer also to the Ice Cream Report (1979, §59).

⁷⁷² Refer to the Ice Cream Report (1979, §78).

⁷⁷³ See Sections A5.2.6A and A5.3.

⁷⁷⁴ Refer to the Ice Cream Report (1979, §61). Tight controls are exemplified in the prescriptions by management to its sales-force with respect to the way in which retailers tied to rivals could be poached. Discounting, for example, was only permitted if rival terms were less favourable than the standard terms offered by Wall's (Monopolies and Mergers Commission 1979, §101).

⁷⁷⁵ Refer to the Ice Cream Report (1979, §153-156).

return on capital employed and of the components of the metrics explained in the preceding section.

Over a period of forty years, Wall's incessantly focused on achieving and retaining market leadership⁷⁷⁶ operating an intricate business model that focused on reaping the *net* benefits mass consumption via large scale operations within production, distribution, and retail. More specifically, by the 1970s the rules specified in the business model of Wall's and governing the manner in which value was delivered and captured included the following emissions.

First, a **competitive pricing strategy**⁷⁷⁷ that, in operant terms, is interpreted as emissions by Wall's that functioned (a) to approach the net beneficial consequences occasioned by the behaviour patterns of a very large number of consumers and retailers terminating in the exchange of its brands rather than the brands of functionally equivalent and imperfect substitutes⁷⁷⁸; and, (b) to escape-avoid the sanctioning effects of competitive encroachment and a large scale operation (Figure 189)⁷⁷⁹. Wall's priced its products at a premium over secondary manufacturers but at a level lower than that of Glacier whose products were functionally equivalent substitutes⁷⁸⁰. There is evidence to suggest that Wall's behaviour was maintained by the potential long-term patterns of incentives from operating in the ice cream market rather than immediate and quick returns: Aggressively low pricing would have had potentially beneficial short run consequences such as quick access to market share and relatively high positive increases in profitability via relatively low price reductions. However, it appears that such policies would have had long-term aversive consequences including retaliatory pricing by rivals at retail and the permanent reduction of profit margins to compensate for the reduction in prices by a significant increase in sold volumes. In addition, price reductions had little effects on sales volumes during bad seasons. Instead, Wall's behaviour was shaped and maintained by patterns of reinforcement contingent upon continual product development and increasing the more efficient use of resources⁷⁸¹.

The marketing practices of secondary manufacturers were reinforced by the patterns of reinforcement contingent upon extreme discounting and intense price competition⁷⁸² (typically short term strategies for acquiring market share). In contrast, Wall's behaviour was maintained on a longer *interval schedule* (reinforcement is delayed because product development takes relatively longer than slashing prices) and on the relatively higher patterns contingent upon

⁷⁷⁶ Refer also to the Ice Cream Report (1979, §315). There is no *direct* evidence to suggest that market leadership was an explicitly stated objective and, therefore, it is not clear whether this particular stimulus achieved either discriminative or motivating function during the first generation-situation. The evidence relating to the 1970s, however, shows a different story. See Section A5.4.2C.

⁷⁷⁷ Refer also to the Ice Cream Report (1979, §105, §315).

⁷⁷⁸ See Section A5.3.3.

⁷⁷⁹ Refer also to the Ice Cream Report (1979, §315, §340).

⁷⁸⁰ Refer also to the Ice Cream Report (1979, §108).

⁷⁸¹ Refer also to the Ice Cream Report (1979, §108). For further details on the retail pricing policy of Wall's see also paragraphs 110-112. The trade pricing policy of Wall's is discussed in Section A5.4.5.

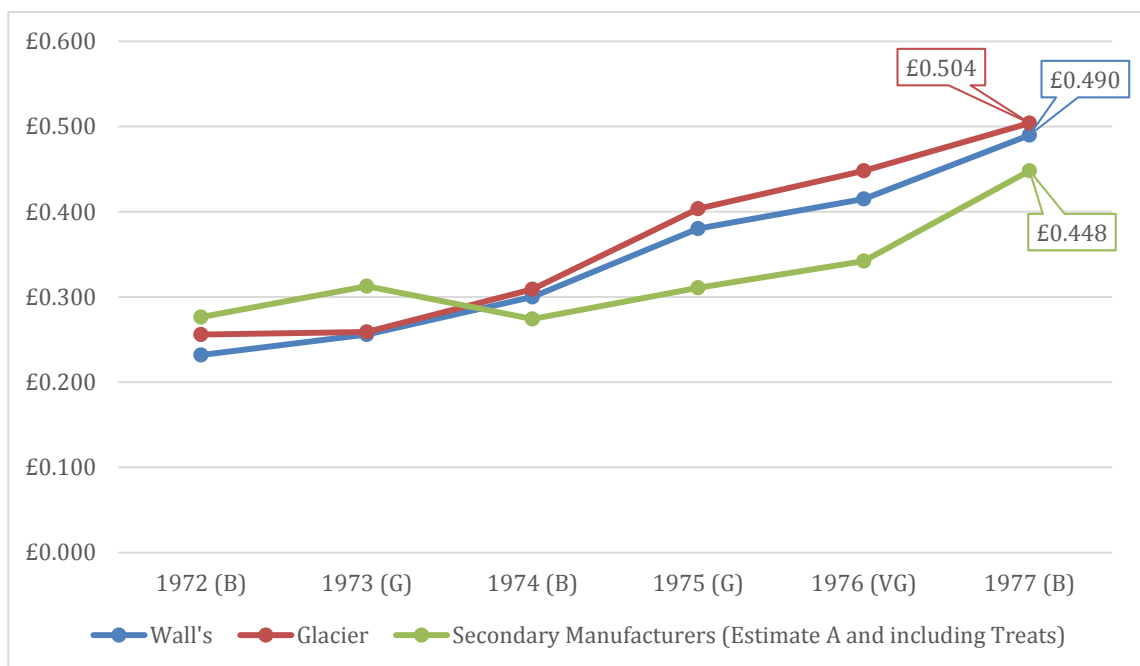
⁷⁸² Refer to the Ice Cream Report (1979, §36, 329) wherein smaller manufacturers are reported to have engaged in aggressive discounting even in colder weather to increase sales.

product development (which also involves significant risk and cost) and on efficiency gains.

Second, delivering an **efficient logistical service to retailers** interpreted as emissions by Wall's that functioned to approach the benefits derived from promptly serving a very large number of heterogeneous and relatively small retailers who were dispersed across the UK and who typically logged relatively small orders of a product that was already of a relatively low value⁷⁸³.

Third, **product development and innovation strategies**⁷⁸⁴ interpreted as emissions by Wall's that functioned to approach the net benefits derived from the reformulation of existing products or the introduction of new attractive⁷⁸⁵ and difficult-to-imitate⁷⁸⁶ lines that continually matched consumer requirements⁷⁸⁷. Either type of variation had to be amenable to mass production⁷⁸⁸.

Figure 189 – Average Net Selling Price Per Litre Wall's versus Other Manufacturers



Source: A5.7.1L

Fourth, **national level branding** interpreted as emissions by Wall's that functioned to approach the net benefits of offering a **quality product** and of maintaining a strong **brand presence and equity**⁷⁸⁹, and **variety**⁷⁹⁰ at **convenient locations of purchase and consumption**⁷⁹¹.

Fifth, **market expansion strategies at retail** that functioned to approach the net benefits of pushing large volumes of ice cream through a very extensive

⁷⁸³ Refer also to the Ice Cream Report (1979, §315, §340).

⁷⁸⁴ Refer also to the Ice Cream Report (1979, §315).

⁷⁸⁵ Refer also to the Ice Cream Report (1979, §69).

⁷⁸⁶ Refer also to the Ice Cream Report (1979, §83).

⁷⁸⁷ Refer also to the Ice Cream Report (1979, §315).

⁷⁸⁸ Refer also to the Ice Cream Report (1979, §83).

⁷⁸⁹ Refer also to the Ice Cream Report (1979, §315).

⁷⁹⁰ Refer also to the Ice Cream Report (1979, §69).

⁷⁹¹ Refer also to the Ice Cream Report (1979, §315).

nationwide network of retail outlets. The characteristic elements of such outlets (e.g., a seasonal kiosk at a beach) functioned to channel consumer traffic in a manner that occasioned a consumer situation for approaching ice cream with some associated probability of terminating in the exchange of the manufacturer's brands. Freezer and outlet exclusivity restricted consumer choice at retail and this seems to have increased the likelihood of purchase and consumption among consumers. By having a significantly large number of retail outlets as its customers, Wall's would be able to push volumes of products downstream. For example, Wall's sales organisation was focused (a) on identifying outlets with potential for product sales, (b) on canvassing retail customers with an existing and relatively large volume of ice cream business from rivals, and (c) on developing the business of existing retailers⁷⁹². In 1976, for example, Wall's canvassed 14,000 outlets, 5% of which were poached from rivals⁷⁹³. Mass consumer marketing campaigns (brand advertising, point of purchase displays) created demand-pull and thus were an integral supplement of market expansion strategies at retail.

Sixth, value was captured through continually emitting behaviour that functioned to approach the potential net benefits of a **very large-scale operation** by continuous monitoring, rationalisation, and consolidation across all areas of the operation and via **technical and technological progressiveness**. In this respect, the Commission describes Wall's relative success in maintaining prices below the retail price index and the price index of key raw materials as a result of the firm's "continuous search for improved efficiency in the control of cost and management of resources" (Monopolies and Mergers Commission 1979, p. 195). Further, Wall's claimed that "it was better to move ahead by reducing costs through the more efficient use of resources and by 'creativity' in innovation with new or improved products" (Monopolies and Mergers Commission 1979, p. 41).

These rules operated independently and in combination to reveal a complex web of contingencies that governed the behaviour of Wall's during the 1970s.

For example, (a) Wall's business was historically subject to the extent to which it developed products with an emphasis on the introduction of novelty. However, between 1972 and 1976 the decline in the relative proportion of consumer sales from CTNs and cinemas and in the relative profitability of catering products occasioned the pruning of the total number of branded lines maintained by Wall's. The firm continually maintained a balance between avoiding the punishing consequences associated with retaining a very wide range of products (including excessive production and distribution costs) on the one hand, and approaching adequate patterns of rewards which contributed to reaching break even that were contingent upon satisfying consumer reinforcement criteria of product and outlet variety⁷⁹⁴.

(b) Such environmental conditions as the increasing costs of maintaining a sales force, the costs of moving freezer cabinets when an account switched

⁷⁹² Refer also to the Ice Cream Report (1979, §100).

⁷⁹³ Refer also to the Ice Cream Report (1979, §101). See also paragraphs (§102) and (§192) on the problems faced by the Commission in reconciling the figures provided by Wall's and Glacier with respect to number of switched retailers.

⁷⁹⁴ Refer also to the Ice Cream Report (1979, §69).

from Glacier to Wall's, and general budgetary and financial constraints, functioned to constrain the range of sales promotion behaviours possible. Thus, there was a limit on the number of salespeople that could be employed and, in certain areas it became more beneficial to increase sales through existing good retailers than attempt to poach customers from rivals⁷⁹⁵.

(c) Pricing, for example, was subject to the stabilising pressures exerted by counter-inflationary legislation (the Price Code) on retail prices and upward pressures exerted by the rises in the costs of raw materials due to such factors as cost inflation. Until the early 1970s, changes in pricing occurred on an annual basis. However, increasing cost inflation and the Price Code occasioned more frequent revisions⁷⁹⁶.

In addition, several environmental conditions functioned to constrain the setting scope when Wall's came to set its retail and trade pricing strategies: (a) other costs of production and of operating on a large scale; (b) extent of efficiency and modernisation in production and distribution; (c) rival pricing policies (and their internal organisation and key market focus) and the extent to which other suppliers would follow price increases by Wall's; (d) the policies of suppliers of competing confectionery and dessert products; and (e) the relative elasticity of demand⁷⁹⁷ and such informational dimensions as consumer behaviour being reinforced by products representing "good value for money" and that a 1p increase on a 5p product resulted in a 20% increase in retail pricing⁷⁹⁸.

Contingencies Relating to Large-Scale Operations

During the first generation-situation, Wall's emitted two important behavioural topographies that functioned to capture value from existing levels of consumer and retailer approach and from market opportunities, namely, 'product development' and 'technical and technological progressiveness'. The two sets of behavioural topographies operated on different aspects of Wall's environment. Product development operated to encourage and expand consumer and retailer approach and thus approach the positive consequences of these latter classes terminating in mass purchase and consumption. Technical and technological progressiveness operated on the cost structure in a variety of ways to economise on the costs of trading in the ice cream market through a continual regard to economies of scale, efficiency, and recurring capital investment to maintain or replace existing facilities. The topographies of behaviour functioned to escape-avoid the patterns of aversive consequences inherent to large-scale operations (and, especially, in conjunction with the risks of seasonal businesses and the uncertainty of within-season weather fluctuations). The history of Wall's, as described in Section A5.3, suggests that both product development and technical progressiveness were rewarded especially when variation was commercially successful, i.e., an innovation.

⁷⁹⁵ Refer also to the Ice Cream Report (1979, §100).

⁷⁹⁶ Refer also to the Ice Cream Report (1979, §104, Appendix 22).

⁷⁹⁷ According to Wall's, a 1% reduction in price led to a 2.5% increase in sales volumes (Monopolies and Mergers Commission 1979, §108).

⁷⁹⁸ Refer also to the Ice Cream Report (1979, §106-112).

During the 1970s, these topographies persisted especially in the light of the market problems faced by Wall's in the period. Thus, product development and technical and technological progressiveness acquired regulatory dimension⁷⁹⁹.

By the 1970s the manufacturing plants of Wall's were organised as relatively centralised large-scale production facilities to take full advantage of the mass ice cream purchase and consumption⁸⁰⁰. The advantage of employing such machinery was greater efficiency and relatively higher product quality, product consistency, and comprehensiveness in the range of products that could be produced⁸⁰¹. Such higher-grade equipment translated into having a fewer number of machines and allowed for more intensive use and greater production capacity of any single machine⁸⁰². On the other hand, equipment was relatively expensive to acquire and maintain because it was technically more complex, highly automated and mechanised and capable of handling a large volumes and variety of bulk ingredients⁸⁰³.

Production was occasioned by patterns of reinforcement signalled by the actual and anticipated levels of retailer and consumer demand. In addition, levels of production were also governed by the technological contingencies of existing equipment that determined the optimum production capacity possible and a combination of other environmental factors (Table 16). Together these contingencies affected the quality and quantity of patterns of aversive consequences of trading in ice cream. For example, according to Wall's it was more economical to have a plant with several lower cost machines. This provided greater flexibility in varying production according to the seasonal and weather fluctuations of demand. The current set up was such that with fewer machines there was a greater risk of not meeting demand during the peak season and, therefore, Wall's had to produce some ice cream inventories during the winter months thereby incurring the relatively high costs of storage⁸⁰⁴. However, there were mitigating circumstances explaining why Wall's had such a structure.

⁷⁹⁹ This section focuses on the main contingencies related to technical progressiveness that governed the behaviour of Wall's. Section A5.4.3 discusses the evidence with respect to the extent of imitation of Wall's product development efforts by rivals.

⁸⁰⁰ See Section A5.3.2.

⁸⁰¹ Refer to the Ice Cream Report (1979, §38, §56).

⁸⁰² Refer to the Ice Cream Report (1979, §75, §80).

⁸⁰³ Refer to the Ice Cream Report (1979, §38, §56, §75-§80).

⁸⁰⁴ Refer to the Ice Cream Report (1979, §75). As also explained in paragraph 80 these were constraints related to path dependence and the capital investment choices in the past. See also Section A5.3.2 in this last respect.

Table 16 – Environmental Factors Influencing Levels and the Costs of Production and Capacity Utilisation

Seasonality	The seasonal nature of demand signalled that the advantages gained by the intensive use of production equipment were offset by the costs of storage during the winter months and the increased labour costs during peak summer months (§75). Seasonality also occasioned pre-season discussions with retailers with respect to expected demand with freezer exclusivity providing a greater degree of predictability (§87). In conjunction with managerial deliberation, these expectations determined the level of productive capacity during winter (§76). Seasonality also effected the number of employees engaged in production and distribution with the winter months experiencing lower labour costs than the summer months (§77).
Within-season fluctuations	Exceptionally good weather created temporary shortages in production. However, it was better to plan manufacturing using more conservative demand estimates (§76).
Storage costs and the nature of ice cream	Per unit storage costs of ice cream are relatively high • Ice cream mix cannot be stored for longer than 48 hours (§75).
Raw materials and Employment	These contributed to the aversive consequences of producing and supplying ice cream and their incidence on costs varied according to planned production and actual sales and resource prices (§77-8).
Retailer and Consumer Demand	Capacity utilisation was a function of retailer and consumer demand levels (§76, §79-81).

Source: (The Monopolies and Mergers Commission 1979)

According to Wall's, the critical success factors for viability within the industry involved several considerations including: (1) the product mix and the breadth of product ranges to be placed on offer to consumers; (2) associated production volumes; (3) the types of outlets within the target retailer segment, the average order size by such outlets, and the selection of product ranges and packaging size within any given order; (4) the degree of geographical dispersion among outlets served and the distance involved in transporting ice cream to storage depots and retail outlets; (5) the extent to which delivery trucks are loaded to capacity; (6) the relation between the size of a given drop and the distance to be travelled, (7) set-up costs (e.g., provision of a freezer), (8) access to an appropriate distribution network; and, (9) flexibility in coping with the variable and unpredictable nature of demand⁸⁰⁵.

Operating a *viable* ice cream manufacturing organisation was not necessarily contingent upon the net benefits possible from large-scale production. Smaller scale alternatives were possible and would still lead to profitability in either of two ways: (1) Specialisation in a very narrow range of products. This allowed for a broader geographical area of operation⁸⁰⁶ and was relatively unencumbered by technological contingencies involved⁸⁰⁷. The focus on a narrow range of products (e.g., bulk items for freezer centres) signified relatively larger production volumes of the same product (reducing per unit production cost, downtime resulting from changes in production runs, and so on) and drops of relatively large orders composed of a limited number of products which maximised the utilisation of delivery truck capacity. Since freezer centres

⁸⁰⁵ Refer to the Ice Cream Report (1979, §79).

⁸⁰⁶ Refer to the Ice Cream Report (1979, §79).

⁸⁰⁷ See Section A5.2.5 on technology.

owned cabinets, they would have required very little manufacturer investment besides such marketing costs as account management and so on. (2) Concentration on a small geographical area while producing a wider range of products⁸⁰⁸.

According to Wall's, however, the relatively richer patterns of reinforcement contingent upon supplying ice cream for *mass purchase and consumption* were *only* contingent upon a business model governed by *large-scale centralised production and highly integrated distribution and production*.

Given the particular risks of seasonality and uncertainty of within-season weather fluctuations, Wall's claimed that through this type of business model it could: (1) Economically produce significant volumes of a very wide and comprehensive range of nationally branded products⁸⁰⁹; (2) Combat the aversive consequences on production requirements, levels of inventories and delivery schedules associated with characteristic demand variability; (3) Inexpensively distribute orders of any size and containing any mix of this relatively low value products; (4) Offer prices that were competitive with Glacier and secondary manufacturers; (5) Finance significant investments in development costs aimed at improving existing products and introducing novelty; (6) Extend coverage to every type of outlet that populated the relatively fragmented, geographically dispersed, and heterogeneous retail channel; and, (7) Offer a unique value proposition to consumers and its channel in terms of product range, quality, novelty, and availability that could not be matched by the slowly encroaching secondary manufacturers.

Only thus could it capture the full benefits of mass purchase and consumption⁸¹⁰.

In addition to large-scale production and distribution economies, the level of business generated across the nation by Wall's resulted in other scale advantages: (1) maintaining a wide range of product lines and having a geographically dispersed retail customer base covered by a national distribution system reduced the vulnerability of Wall's to seasonality and within season fluctuations; (2) maintaining technical, financial, and managerial resources and skills facilitated the identification and development of new market opportunities; (3) relatively low advertising and marketing expenditure resulted in lower per unit costs; and, (4) centralised accounting and administration resulted in informational economies namely high standards of supervision and quality and hygiene control⁸¹¹.

⁸⁰⁸ Refer to the Ice Cream Report (1979, §79, §340). In similar vein, the Commission noted in the Frozen Foodstuffs Report (1976, §56) that considerable cost savings were contingent upon optimizing drop sizes at each location and increasing the number of retail customers served in any given area.

⁸⁰⁹ For example, maintaining a comprehensive product range of 140 product lines (Table 15) required employing a wide variety of production and packaging machines. Total output of a given product line from an individual run had to be large enough to minimise associated unit production costs and achieve the desired scale economies (§80).

⁸¹⁰ Refer to the Ice Cream Report (1979, §79-80, §324, §340-343, Appendix 22) which provide an extensive discussion on the level of scale economies achieved by Wall's and the efficiency gains it managed during the 1970s.

⁸¹¹ Refer to the Ice Cream Report (1979, §81, 341).

The market problem characterising the second generation-situation was such that Wall's was unable to sustain its market leadership position without continual investment in efficiency across its operations and in capital in a manner that did not jeopardise its unique value proposition to the market. Indeed, during the 1970s the threats acquired *motivating* rather than *discriminative* function for reasons similar to what happened in relation to demand variability in the 1960s⁸¹². The factors unique to Wall's (see preceding sections) established and intensified the effectiveness of the punishing effects of the various environmental conditions including intensified competition and increased encroachment, continually changing business conditions, and potential loss of market position built over several decades (the *value-altering effect*). The evidence shows that Wall's increased the patterns of behaviour typically associated with striving for and retaining market leadership (and demand decline and variability) including (a) technical and technological progressiveness and rationalisation in scale of operations via capital expenditure (including investments in new and replacement equipment, computerisation) and an increasing emphasis on efficiency gains (Table 17), and, (b) product development including the generation of novelty and extending variety⁸¹³ (the *behaviour-altering effect*).

Table 17 – Behavioural Topography Occasioned by the Patterns of Positive and Negative Utilitarian and Informational Reinforcement signalled by Economic Rules and the Reasonable Conduct of Business

- | |
|--|
| <ul style="list-style-type: none"> (a) Containing the level of fixed costs per litre relative to inflation and increasing the utilisation of assets; (b) Improvement in plant and labour utilisation and the application of more stringent standards in the use of materials and energy; (c) Effective buying of raw, packing and other materials; substantial reduction in the costs of distribution; (d) Taking full advantage of developments in computers to assist in the more economic control of its integrated storage and distribution system and in administration; (e) Reduction in costs and improvements in supply and servicing of in-store refrigeration; (f) Substantial improvement in capital turnover ratio and in value added and value added per employee relative to the food industry as a whole. |
|--|

Source: Verbatim from Monopolies and Mergers Commission (1979, p. 123, §342)⁸¹⁴

Capital expenditure geared around gaining efficiency gains was approximately £1.7m during the 5 years ending 1977. The total capital expenditure by Wall's during the 1972 to 1977 period was £9.25m most of which was of a replacement nature across three main areas, namely, factories, distribution systems, and retailer freezers. During 1977, Wall's started a process of modernising its ordering process system and distribution and planned to expand the process in improving stock control and management information systems. Wall's also revealed its plans of a major investment programme focusing on the complete rebuilding of its Acton factory (a total of £27m over an 8-year period) and the modernisation of its freezer cabinet base and refrigerated fleet⁸¹⁵.

⁸¹² See Section A5.3.3C.

⁸¹³ See Section A5.4.4 on product development efforts.

⁸¹⁴ Appendix 22 of the Ice Cream Report contains a comprehensive discussion on the improvements in efficiency made by Wall's between 1972 and 1977.

⁸¹⁵ Refer to the Ice Cream Report (1979, §82, §249).

Broadly, behaviour that reduced the burden of relatively high costs of production, of distribution, and of other aversive aspects of ice cream trade was negatively reinforced.

D: Levels of Deprivation: Actual Performance in Relation to Targets and Rivals

Levels of deprivation may be inferred from the extent to which the actual performance of Wall's matched the rules stated in its objectives given its business model and learning history.

The Ice Cream Report (1979) provides an extensive comparison of the performance on Wall's to that of Glacier as the only remaining national manufacturer and to that of Treats as the largest secondary manufacturer⁸¹⁶. The performance comparison here is limited to the more salient utilitarian (sales, profits) and informational (market share, profitability, return on average capital employed) reinforcers⁸¹⁷.

(a) Sales: Figure 184 (page 544) contrasts the net sales values and volumes and the respective shares of the national and secondary manufacturers. Aside from the considerable variations that were experienced mostly due to the weather (Table 18), Wall's seems to have taken advantage of the three good seasons (1973, 1975, and 1976) and the positive effects brought about on consumer demand by the removal of the purchase tax in 1973⁸¹⁸.

Table 18 – Effects on Sales Volumes of Fluctuations in Weather from One Season to the Next

	Change in Sales Volumes between 1972 (Bad Weather Year) and 1973 (Good Weather Year)	Change in Sales Volumes between 1976 (Very Good Weather Year) and 1977 (Bad Weather Year)
Wall's	17.4%	-14.4%
Glacier	30.4%	-13.0%
Treats	93.2%	-15.2%
Other Manufacturers (Estimate A)	108.3%	-16.2%

Source: Calculated on Tables in Sections A5.7.1B and A5.7.1D

⁸¹⁶ Refer to Chapter 6 and Appendices 10 to 20 and 22 of the Ice Cream Report.

⁸¹⁷ The Report, on the other hand, yields further analyses covering such aspects as sources and applications of funds and operating ratios.

⁸¹⁸ Refer to the Ice Cream Report (1979, §244).

However, Wall's growth in sales volumes (Figure 184 Panel (c)) between 1972 and 1977 was relatively minimal (6.4%) even though net sales value in 1977 was 125% greater than the figure for 1972 (Table 19).

Table 19 – Comparison of Growth in Sales Values and Volumes During the 1970s

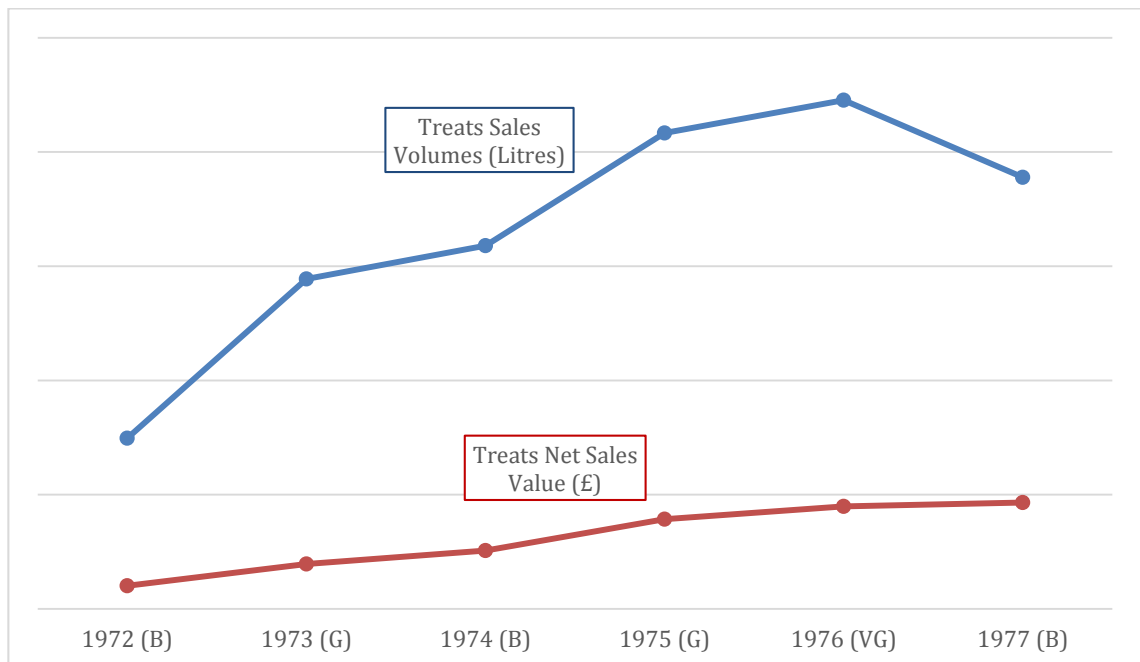
	Growth in Net Sales Volume between 1972 and 1977	Growth in Sales Value between 1972 and 1977
Wall's	6.4%	125.0%
Glacier	3.5%	103.8%
Treats	152.8%	358.5%
Other Manufacturers (Estimate A)	130.6%	272.7%
Total Market	32.2%	153.5%

Source: Calculated on Tables in Sections A5.7.1B and A5.7.1D

No quantitative data was available to determine the segment in which Wall's had made gains and losses. However, as explained in Section A5.2.6B⁸¹⁹, the greatest gains by the secondary manufacturers during the 1970s were in the grocery trade especially with bulk packs and own label ice cream. In contrast, the traditional trade and especially the demand for Wall's confectionery and dessert products was "virtually stagnant" (Monopolies and Mergers Commission 1979, p. 29, §72).

Treats represents an interesting example of a firm altering its business model to fit the changing market conditions during the late 1960s and early 1970s and of a secondary manufacturer achieving phenomenal growth through specialisation (Figure 190).

Figure 190 – Sales Growth of Treats between 1972 and 1977



Source: Sections A5.7.1B and A5.7.1D

⁸¹⁹ See also Section A5.4.3.

From a seasonal manufacturer of ice-lollies in 1969 it transformed itself into a year round ice cream manufacturer climbing to the third largest supplier in the market after Wall's and Glacier⁸²⁰. Treats emphasised a relatively narrow range of products (about 33% of sales in ice lollies as a confectionery item and 60% of sales mostly in bulk packs by 1977) to certain types of outlets (35% of products finally sold to mobile vendors and 57% sold to home freezer centres by 1976)⁸²¹. In contrast, during 1972 bulk products represented less than 25% of sales. In that year, the firm expanded its bulk ice cream manufacturing capacity through the acquisition of Taylors Limited⁸²². Given a lower cost base and a narrow specialisation, Treats exerted pressure on Wall's position within the grocery trade due to the substantially lower prices the former could charge to penetrate and establish itself within the segment⁸²³. The sales of Treats were not as sensitive to weather fluctuations as those of Wall's and Glacier (Table 18). As the firm expanded after 1975, however, Treats became more exposed to competitive encroachment by other secondary manufacturers in its two areas of business. This occasioned heavy capital investments to improve service to retailers across the UK and a fall in profitability⁸²⁴. Figure 184 (page 544) and Table 19 also demonstrate the increasing degree of encroachment by secondary manufacturers whose trade volumes grew 130% between 1972 and 1977.

Glacier, on the other hand, experienced a more precarious situation despite the acquisition of Midland Counties, in 1973, which significantly broadened its brand repertoire and allowed the organisation to hit a peak in sales volumes during a particularly good season. Sales volumes declined after that and, in total, only increased by 3.5% between 1972 and 1977 (Table 18). The primary reason for this decline was due to Glacier not developing the sales of bulk ice cream during the period (Table 20). In addition, Glacier could not take advantage of the 1975 and 1976 good seasons because of industrial action in 1975 and an upward revision of prices in 1976. From the perspective of the typically price sensitive consumers and of retailers serving these consumers, the upward revision in prices increased the effectiveness of Wall's brands as reinforcers. The relatively lower price of Wall's brands signalled richer patterns of reinforcers in terms of value for money to consumers and richer patterns in terms of faster and higher volumes of sales and profits to retailers⁸²⁵.

Table 20 – Shift in Sales Distribution According to Product Type (Glacier)

	1971	1976
Confectionery	59%	57%
Desserts	22%	25%
Catering and Bulk	19%	18%

Source: Section A5.7.2E

⁸²⁰ Refer to Ice Cream Report (1979, §130-131).

⁸²¹ Refer to Ice Cream Report (1979, §131, §255, §325-326). Products that were uneconomical to produced were sourced from Wall's and two other small manufacturers and these accounted for about 7% of sales in 1977 (§131).

⁸²² Refer to Ice Cream Report (§255).

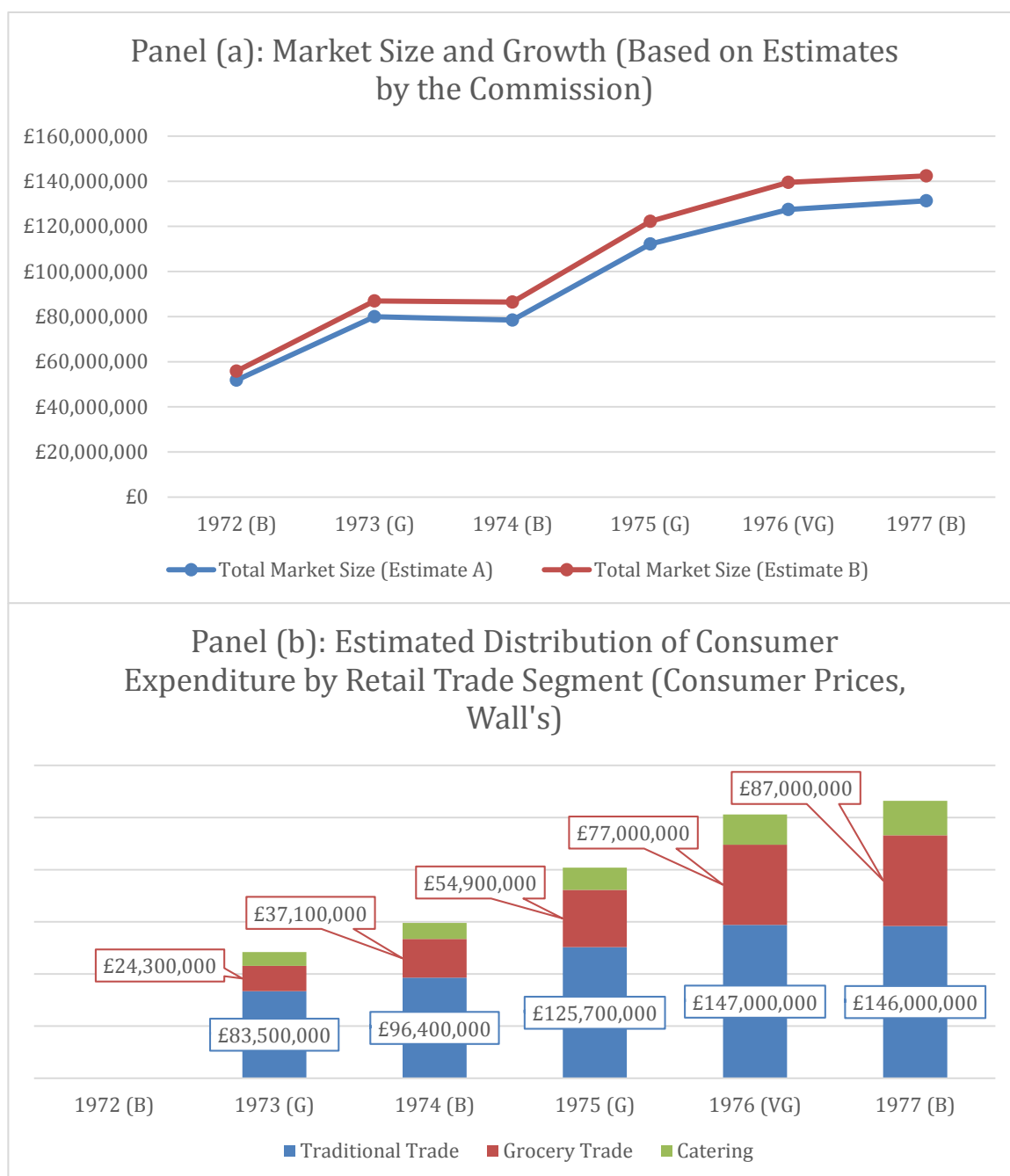
⁸²³ Refer to Ice Cream Report (§326).

⁸²⁴ Refer to Ice Cream Report (§326).

⁸²⁵ Refer to Ice Cream Report (§263-264). See also the explanation of consumer reinforcement criteria in Section A5.4.4.

(b) Market Share: At best, the market expanded by 153% in value (32% equivalent in volume) between 1972 and 1977 (Panel (a) in Figure 191) with significant increases in the sales of bulk items and relative declines in confectionery products (Panel (b) in Figure 192)⁸²⁶. Panel (a) in Figure 192 demonstrates decreasing consumer expenditure at CTNs, SGSs and Seasonal Outlets and significant increases in self-service supermarkets and home freezer centres to the extent expenditure in both segments was almost equal by 1977. Panel (b) in Figure 191 shows a relative stagnation in the overall size of the traditional trade with growth in the grocery and catering segments.

Figure 191 – Market Size and Distribution of Consume Expenditure by Retail Segment

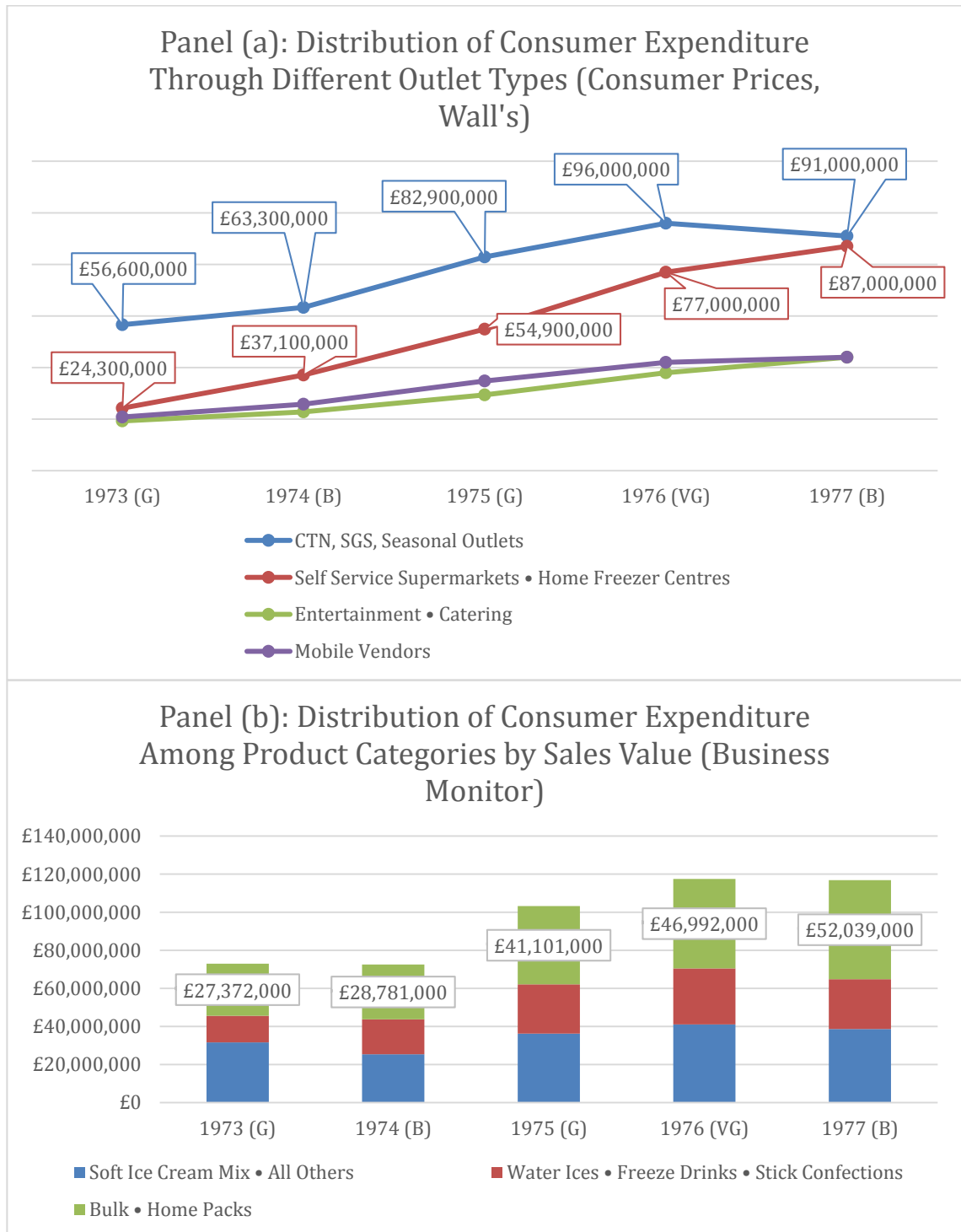


Source: Sections A5.7.1C, A5.7.2A, A5.7.3C and Section A5.7.1D

⁸²⁶ It should be noted that bulk items are relatively inexpensive in contrast to confectionery products.

Secondary manufacturers seem to have taken better advantage of the sudden burst in growth of the grocery trade that occurred between 1972 (a bad season) and 1973 (a good season with the removal of the ice cream purchase tax) and thereafter (Figure 184 and Figure 191). In terms of volumes sold, the secondary manufacturers managed to surpass Glacier after 1975 (Panel (c) in Figure 184).

Figure 192 – Distribution of Consumer Expenditure

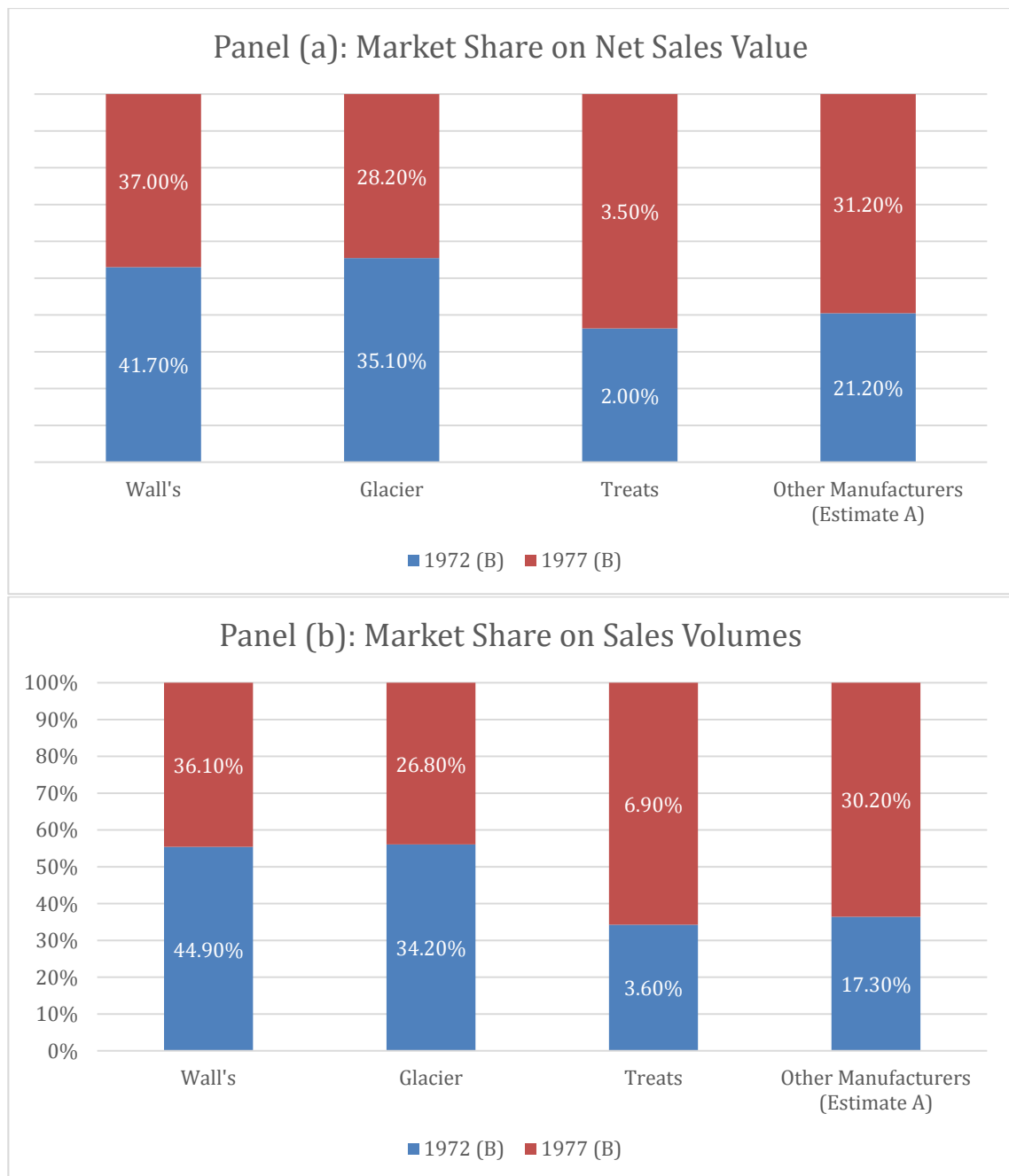


Source: Sections A5.7.1C, A5.7.2A, A5.7.3C and Section A5.7.1D

Figure 193 contrasts market shares between 1972 and 1977 of Wall's and its rivals. Despite total market growth, Glacier's declining share, and Wall's growth

in sales (Table 19), after 1973 Wall's lost relative position within the entire ice cream market as a result of encroachment on the grocery trade and stagnation in the traditional trade.

Figure 193 – Changes in Market Shares between 1972 and 1977



Source: Section A5.7.1E

The competitive pressures within the grocery trade and stagnation in the traditional trade (the most important business to the firm) had important effects on Wall's: First, the organisation was in a position of a relatively increasing level of deprivation of patterns of utilitarian (sales value and volume) and informational (market share and relative leadership position) reinforcement between 1972 and 1977. Both stagnation in the traditional trade and encroachment in the grocery trade functioned to constrain the behaviour setting scope faced by Wall's by exerting downward pressures on the number of consumers available in the market thereby limiting the amount of exchange

transactions (as behaviour) Wall's could make. In addition, these factors functioned to regulate reinforcement patterns in a manner analogous to making an already *variable ratio schedule* more variable. Thus, lesser *net* rewards were contingent upon the same or greater amount of effort (see also the subsection on declining profitability below). Secondly, the shifts in importance from the traditional to the grocery trade shaped a change in the distribution of its sales through differential reinforcement (Table 21 and Table 22).

Table 21 – Shift in Sales Distribution According to Segment Type (Wall's)

	1971	1976	1977
Traditional Trade	68%	53%	47%
Grocery Trade	10%	29%	34%
Wholesale, Catering, and Others	22%	18%	19%

Source: Section A5.7.2E

Table 22 – Shift in Sales Distribution According to Product Type (Wall's)

	1971	1976
Confectionery	52%	50%
Desserts	31%	25%
Bulk, Catering and Own Label	17%	25%

Source: Section A5.7.2E

(c) Profits and Profitability and Return on Average Capital Employed:

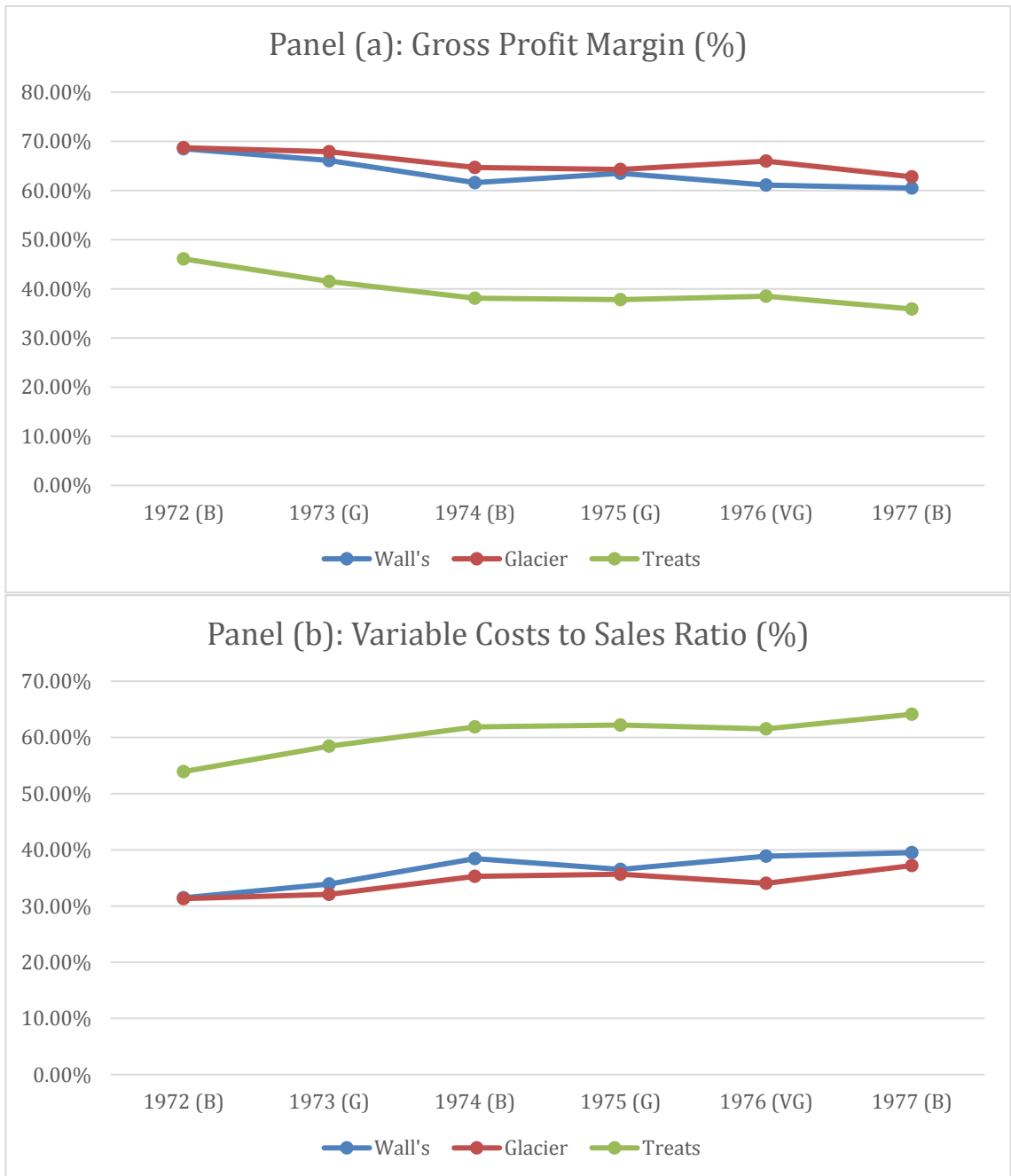
Section A5.7.1L presents comparable performance metrics for Wall's, Glacier, and Treats with respect to variable and fixed cost structures and gross and net profits. Figure 194 presents an overview to show⁸²⁷: (1) Wall's was suffering from a declining gross profit margin (Panel (a)) which was brought about by several factors including: (a) increasing inflationary pressures on raw material and labour costs, (b) greater discounting due to competitive pressures, and (c) a shift in the proportion of sales from confectionery items (relatively high per unit profit items) to bulk items (relatively low per unit profit items). Overall gross profit margin decreased by 12% between 1972 and 1977 increasing the level of deprivation and constraining the scope due to Wall's inability recover increased variable costs by charging higher selling prices. (2) The fixed cost base of Wall's increased at a relatively slower rate. In addition, Wall's seems to have been relatively successful in increasing its operating efficiency (including improved capacity utilisation)⁸²⁸ – the fixed costs to sales ratio improved by 10% during the period. (3) Panels (b) and (d) show similar cost structures of the three larger manufacturers. In addition, Glacier seems to have been suffering from a relatively higher fixed cost base probably due to the various acquisitions performed throughout the years. (4) The susceptibility of net profits to year on year weather fluctuations (Panel (c)) is also noteworthy. The net profit margin % of Wall's decreased by 23% during the period negatively effecting the level of deprivation throughout the period due largely to the effects of the weather⁸²⁹.

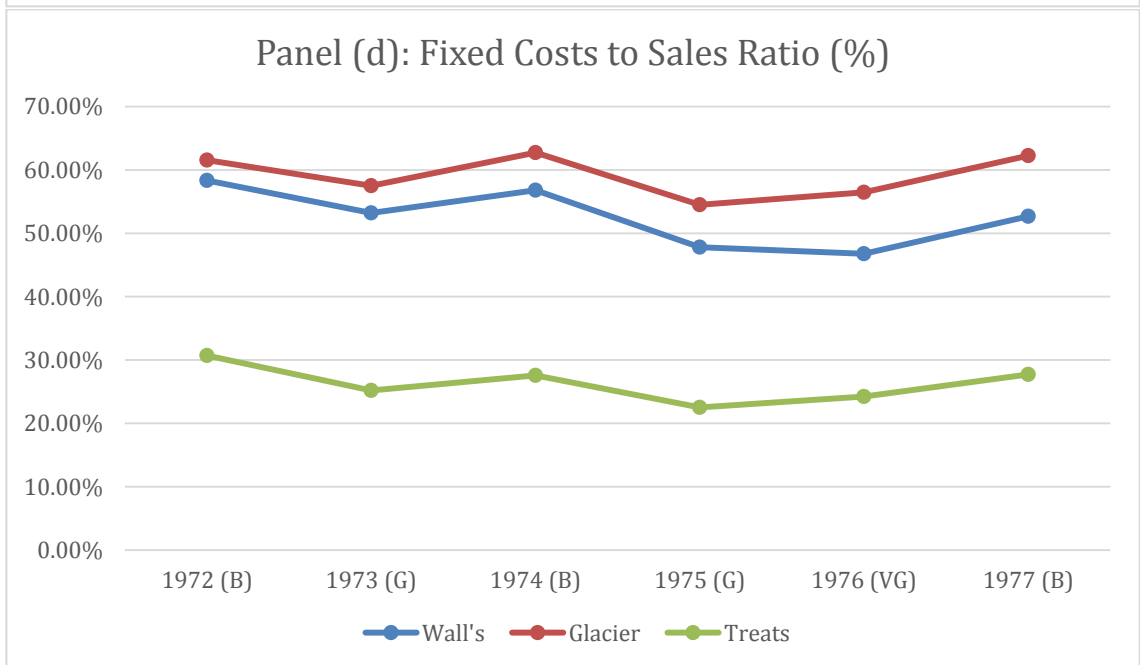
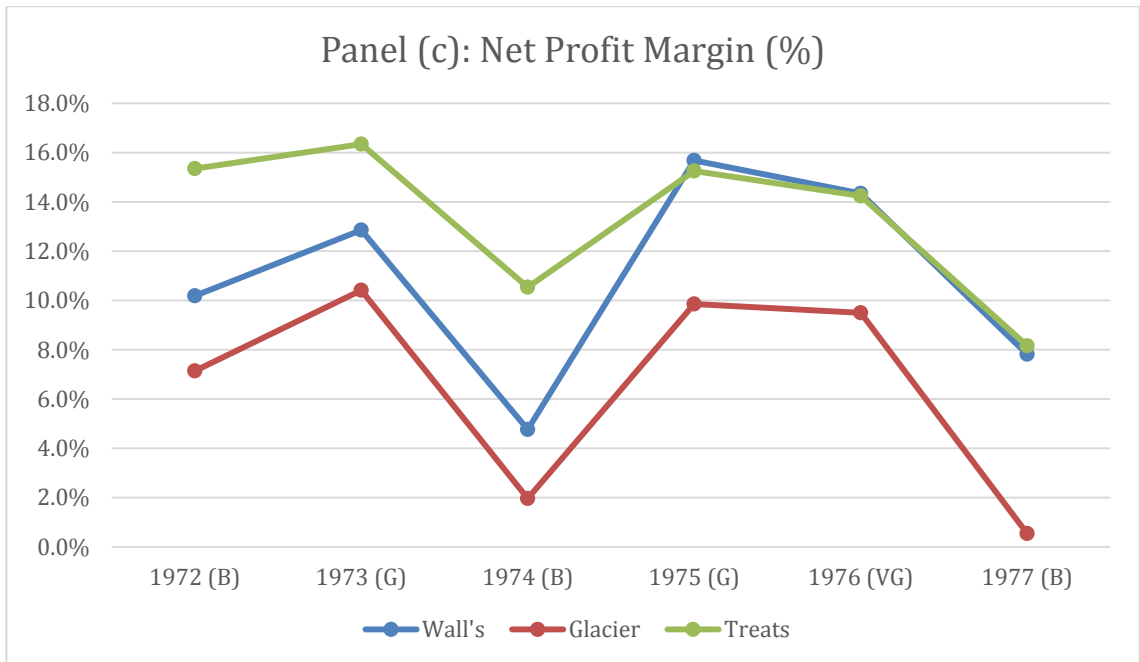
⁸²⁷ Also refer to the Ice Cream Report (1979, §245-247)

⁸²⁸ See Section A5.4.2C.

⁸²⁹ Also refer to the Ice Cream Report (1979, §251)

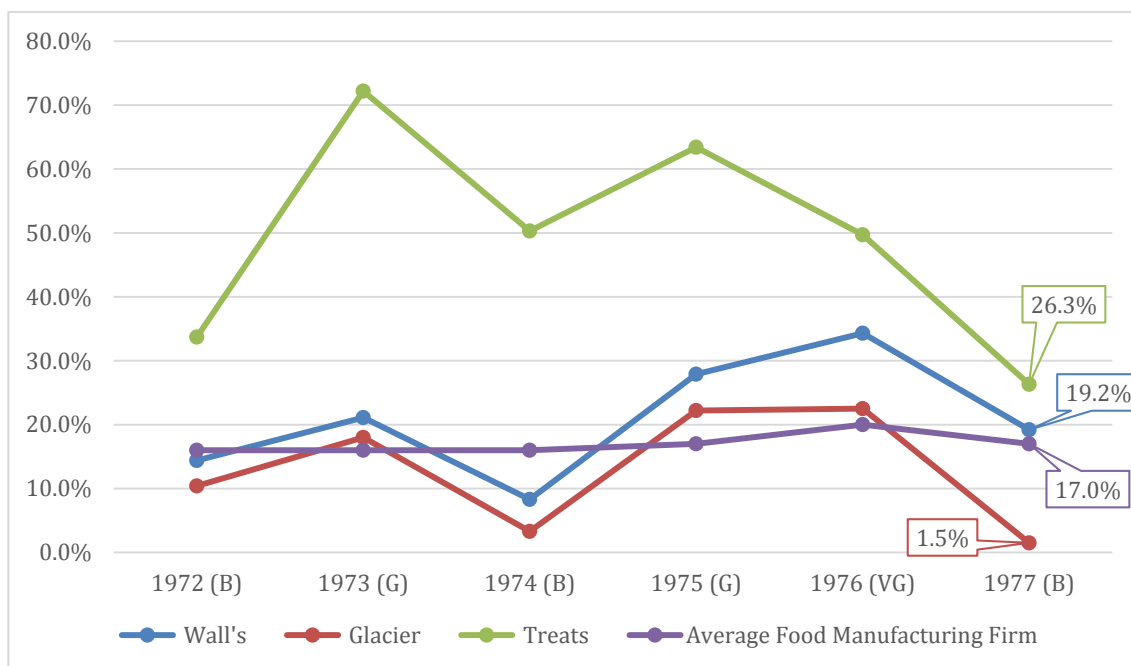
Figure 194 – Comparison of Profitability and Cost Structure of Top Three Manufacturers





Source: Section A5.7.1L

Figure 195 – Return on Average Capital Employed



Source: Section A5.7.1L

In contrast to both Glacier (decrease of 86%) and Treats (decrease of 22%), the return on average capital employed of Wall's improved by 33% between 1972 and 1977. At an average rate of 20.9% for the six years ending 1977, the rate of return of Wall's was always above the minimum acceptable level of 8% stipulated by Unilever. Figure 195 also contrasts the rate of return to the average for quoted companies in food manufacturing⁸³⁰.

Wall's claimed that its return on capital "was far from satisfactory against the background of its special risk situation [arising from uncertainty and unpredictability due to weather] and was not excess" (Monopolies and Mergers Commission 1979, pp. 123-124, §344). The organisation expressed concern with respect to its impending capital investment programme. This suggests, therefore, that although the organisation had a relatively high return in comparison to the others, its planned investment had a *value-altering effect* at the end of the investigation.

A5.4.3 Wall's Mutuality Bilateral Contingency Relations with Rivals

From the perspective of manufacturers, rival behaviour historically functioned as an *informational punisher with regulatory dimension* signalling the possible aversive consequences and scope setting effects of competitive encroachment on any single firm's performance. From Wall's perspective, since the 1960s and especially during the 1970s competition in all market segments became significantly more prominent as a stimulus regulatory event within the environment because of a relatively increased degree of market effectiveness. To the extent that Wall's characterised the grocery trade as a field of intense "battle for access to supermarkets, home freezer centres and large wholesalers"

⁸³⁰ Refer to the Ice Cream Report (1979, §247)

(Monopolies and Mergers Commission 1979, p. 116, §325) and the competition from Glacier and the secondary manufacturers in the entire market as “formidable” (Monopolies and Mergers Commission 1979, pp. 124 (§344), 125 (§348))⁸³¹.

The evidence clearly indicates that the main effects of competitive encroachment was to *increase* the intensity of approach by Wall’s to the entire market and its distinctive segments by emitting already learnt repertoires in order to retain its overall position therein including: (1) *Market expansion* within both broad segments with special emphasis on the grocery trade and home freezer centres in particular⁸³². (2) *Product development* across all products including Soft Scoop ice cream for the bulk segment and the traditional trade, a new distinct confectionery lines (the Cornetto, a wrapped factory produced premium price ice cream cone aimed at the adult market) for the impulse sector, and dessert items⁸³³. (3) *Improvement in the unique selling proposition* to smaller shops encouraging them to increase their sales volumes⁸³⁴. The development of a new distinctive premium confectionery product such as the Cornetto was “the only prospect of retaining volume sale through the traditional trade” (Monopolies and Mergers Commission 1979, p. 119, §334) given the contraction in the number of small shops and the continued erosion of their share of the ice cream market as consumer switched their purchase patterns towards the patterns of reinforcement offered by the grocery segment⁸³⁵ (e.g., one-stop shopping and self service)⁸³⁶. (4) *Technical progressiveness*⁸³⁷. The evidence of increasing rates of previously learnt emissions further indicates that the threat of losing market position, as a stimulus event, acquired *motivating* rather than simply discriminative function.

Since no literal exchange was conducted within these rival relations, competitive bilateral contingency relations were mutuality only relations with the actions of a rival punishing and/or reinforcing the behaviour of Wall’s.

A: The Saliency of Glacier as a Stimulus Event

Glacier’s saliency within the behaviour setting during the 1970s increased most probably as a result of its nationwide marketing efforts and the acquisition of several important brands including (a) Eldorado (1963) and Midland Counties (1973) through buy-out/mergers and (b) Mister Softee (1959) through an exclusive franchising agreement. Acquisitions not only broadened the comprehensiveness of Glacier’s product offering but they also increased production and distribution capacity and bought into market share⁸³⁸.

⁸³¹ Refer to the Ice Cream Report (1979, §345). For a description of the effectiveness of competition from the perspective of Glacier and the secondary manufacturers refer to paragraphs (§352-357) and (§309-314) respectively.

⁸³² Refer to the Ice Cream Report (1979, §67, §345).

⁸³³ Refer to the Ice Cream Report (1979, §67, §345).

⁸³⁴ Refer to the Ice Cream Report (1979, §67, §345).

⁸³⁵ Refer to the Ice Cream Report (1979, §67, §334).

⁸³⁶ Refer to the Ice Cream Report (1979, §33).

⁸³⁷ See Section A5.4.2.

⁸³⁸ See Section A5.11.

The business model of Glacier was very similar to that of Wall's – the firm started in the 1920s and was a large-scale operation with a comprehensive portfolio of national brands to sell for mass consumption for a relatively large network of retailers⁸³⁹. Comparatively, Glacier was of similar size in terms of net sales value (Figure 184, page 544) and of cost structure (Figure 194). Within the impulse market, Wall's estimated that it held a 46% share whereas Glacier 45% of the market⁸⁴⁰. Whereas Wall's retailed its products through a network of 57,000 retailers⁸⁴¹, Glacier brands (particularly salient were Lyons Maid and Midland Counties) were available in 55,000 retail stores in all the retail segments and through 2,800 mobile vans⁸⁴². Glacier had an installed freezer base amounting to 45% of all the 126,000 freezers installed within the market, Wall's held 47% (Table 9 and Figure 147) in 1978. Glacier had similar experience and skills in mass production and large-scale distribution and marketing of brands that were in direct and close competition to those of Wall's⁸⁴³. In similar fashion to Wall's, a substantial part of Glacier's business was derived from selling impulse items to the outlets within the traditional segment (contrast Table 20 to Table 21 and Table 22): in 1976, for example, Wall's and Glacier had 50% (circa £24m) and 57% (circa £21.6m) of their respective net sales values tied in confectionery products. Both organizations had similar extensive distribution networks part of which was exclusive and vertically integrated via the various associated organizations within their respective groups (SPD and Alpine). The Commission noted: "The two companies' products were available for consumption and for comparison throughout the towns and villages of the country on every day of the week throughout the year" (Monopolies and Mergers Commission 1979, p. 125)⁸⁴⁴. Given this close tailgating of Wall's by Glacier, there is evidence to suggest that the presence of Wall's within the setting of Glacier had a *value-altering effect*⁸⁴⁵. In contrast and given Wall's learning history, market leadership and position seems to have had *value-altering effects* on the behaviour of Wall's.

Glacier's actions represented a relatively constraining effect on the behaviour setting scope faced by Wall's during the second generation-situation especially because Glacier either cordoned off sections of outlets and segments through exclusivity or through a reduction of the number of manufactures or broadened the range of choices available to retailers. First, Glacier's practices of freezer and outlet exclusivity persisted and probably intensified throughout the 1970s⁸⁴⁶. In fact, the supply of freezers was "a prime method of securing new outlets" (Monopolies and Mergers Commission 1979, p. 70)⁸⁴⁷. Second, the firm continued its acquisitions of manufacturers with relatively strong brands to incorporate under the Lyons Maid portfolio (Table 10). Third, Glacier was very active in canvassing to expand retail base through new outlets and active poaching of retail outlets without encroaching their legal obligations. During the

⁸³⁹ Refer to Chapters 3 and 9 of the Ice Cream Report (1979) for a detailed description of Glacier's business model. See also Section A5.11

⁸⁴⁰ Refer to the Ice Cream Report (1994, p. 18, §3.19). See also Section A5.2.3

⁸⁴¹ Refer to the Ice Cream Report (1979, §88).

⁸⁴² Refer to the Ice Cream Report (1979, §141). See also Section A5.11.

⁸⁴³ Refer to the Ice Cream Report (1979, §348).

⁸⁴⁴ Refer to the Ice Cream Report (1979, §348).

⁸⁴⁵ See Section A5.11.

⁸⁴⁶ Refer to the Ice Cream Report (1979, §182-189, §358-370) on Glacier's exclusivity practices. See also Section A5.4.5.

⁸⁴⁷ Refer to the Ice Cream Report (1979, §190).

1970s, for example, Glacier claimed that it won 30% of the trade within multiple chain CTN establishments by persuading these chains to alter their single-brand stocking policy across their outlets. This particular segment had been dominated by Wall's to the extent that the company had held 95% of the total custom of these multiples⁸⁴⁸. In parallel, Glacier's sales efforts also focused on opening new outlets (circa 11,000 between 1975 and 1977), pitching for retailers tied with rivals without breaching their legal obligations (circa 6,000 between 1975 and 1977) and engendering business from sites that in earlier phases of development of the market would have not considered retailing ice cream. To an extent, such efforts had a relaxing effect on setting scope as retailers could defect to Wall's at pitching stage⁸⁴⁹. Fourth, any newly introduced product on the part of Glacier within the two main retail segments broadened retailer setting scope since outlets would have access to new and broader range of sources for reinforcement. For example, Glacier claimed that its 1969 launch of the Napoli brand of bulk ice cream "constituted at the time a major innovation in selling through the confectionery sector" (Monopolies and Mergers Commission 1979, p. 65)⁸⁵⁰. Napoli was only sold to those outlets that had exclusivity contracts⁸⁵¹ with it thereby depriving retailers of possible patterns of reinforcement occasioned by consumer demand for the product. In addition, the product required "custom-built" refrigeration equipment⁸⁵², which Glacier tied through exclusivity thereby barring any possible encroachment by Wall's or other manufacturers.

Figure 196 contrasts the extent of research and development expenditure by Glacier and Wall's. Between 1972 and 1976 product development expenditure at Glacier increased 209%⁸⁵³. However, this expenditure did not necessarily reflect the introduction of new products.

⁸⁴⁸ Refer to the Ice Cream Report (1979, §160).

⁸⁴⁹ Refer to the Ice Cream Report (1979, §190-192, 357). It should be noted that the Commission was unable to reconcile the figures presented by Wall's and Glacier with respect to the number of outlets each competitor managed to gain and poach (§192 fn. 2, §102 fn. 1).

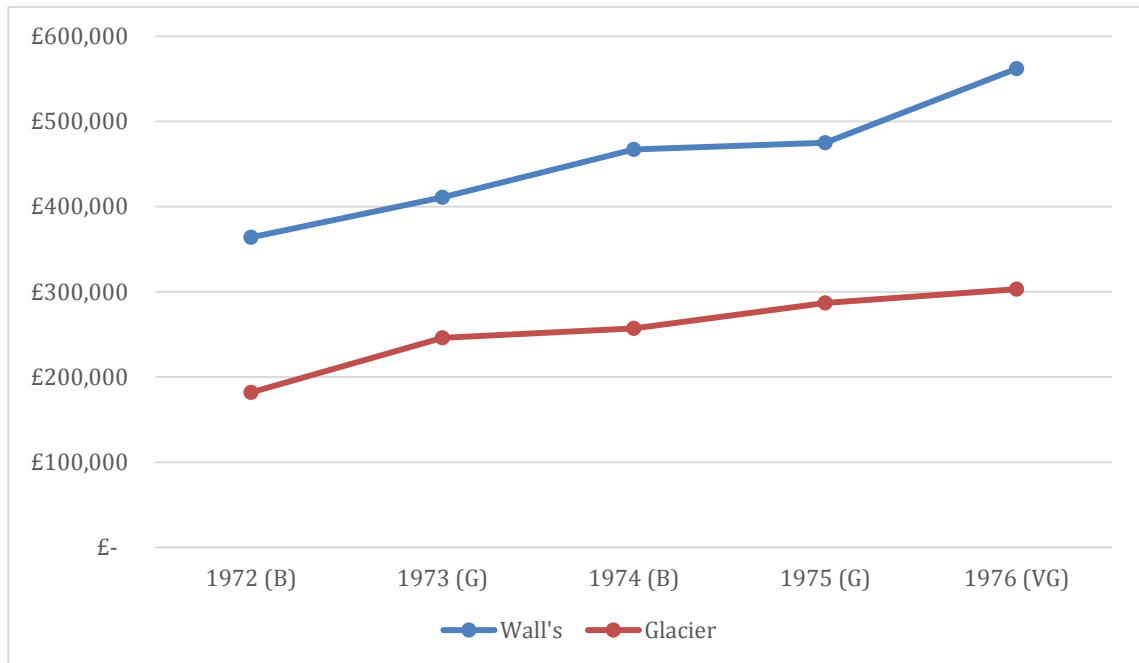
⁸⁵⁰ Refer also to Ice Cream Report (1979, §163-165, §174-175, §381-382) on the product ranges and development efforts of Glacier.

⁸⁵¹ Refer to the Ice Cream Report (1979, §185).

⁸⁵² Refer to the Ice Cream Report (1979, §175).

⁸⁵³ Refer to the Ice Cream Report (1979, §174).

Figure 196 – Intensified Research and Development Expenditure by Wall’s and Glacier



Source: (Monopolies and Mergers Commission 1979, §83, §174)

Wall’s claimed an extensive degree of *imitation* from all quarters including Glacier. The firm protested the risks associated with being “the market innovator” and the relatively short lead time it had for reaping the returns from its efforts in developing, manufacturing, launching, and marketing new and successful product lines (Monopolies and Mergers Commission 1979, p. 120). Whereas rivals inevitably ignored unsuccessful products, successful products were immediately copied. For example, in 1975 Wall’s launched a high quality ice cream “Soft Scoop” for scooping directly from freezers. Its introduction served two functions: (a) to retain a sizeable share of the grocery segment against lower quality and lower priced unbranded and own label ice cream, and, (b) to supply those outlets within the traditional segment that scooped ice cream. By 1976 the product accounted for 84% of sales of its bulk products to retail. Within 6 months of launch, Glacier introduced “Super Scoop” and rivals followed soon thereafter⁸⁵⁴. Treats, for example, launched its premium “World of Flavours” range in April 1977⁸⁵⁵. In 1976, Wall’s reintroduced the Cornetto via imports and in 1977 produced the premium ice cream cone in its Gloucester factory. The product was an immediate success despite its significantly higher price tag. The evidence indicates that the product offered on average relatively high patterns of utilitarian (palatable taste) and informational (good value for money) reinforcement in relation to other similar products. Sales exceeded expectations and shot from 25m pieces in 1977 to 50m 1978 and further strengthened Wall’s reputation as a market innovator within the market. In 1977, however, given the success of the product and the relative each of access to the machinery required to produce it, Glacier introduced the “King Cone”⁸⁵⁶.

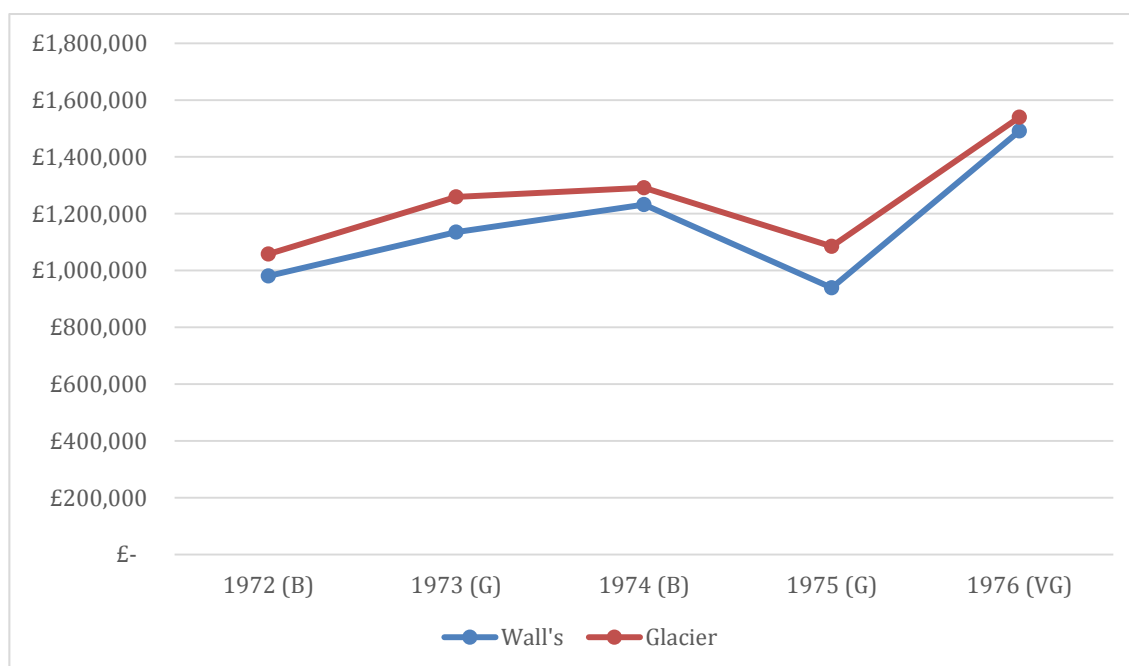
⁸⁵⁴ Refer to the Ice Cream Report (1979, §67 fn 2, §336).

⁸⁵⁵ Refer to the Ice Cream Report (1979, §67 fn 3).

⁸⁵⁶ Refer to the Ice Cream Report (1979, §67 fn 3, §336).

These actions also regulated the incidence of patterns of reinforcement since Glacier brands represented very similar patterns of consumer reinforcement (as functionally equivalent substitutes roughly equal in price (Figure 189)) to those on offer by Wall's. Mass consumer marketing efforts by Glacier had the effects of canvassing consumers away from Wall's products and thus encouraging escape-avoidance. On average for the five years ending 1976, Glacier spent 4.7% of its revenues on advertising while Wall's spent 3.6%. However, Wall's was more effective in its advertising with each £1 spent generating a higher amount of sales (Figure 197).

Figure 197 – Comparison of Advertising Expenditure Effectiveness of Wall's and Glacier



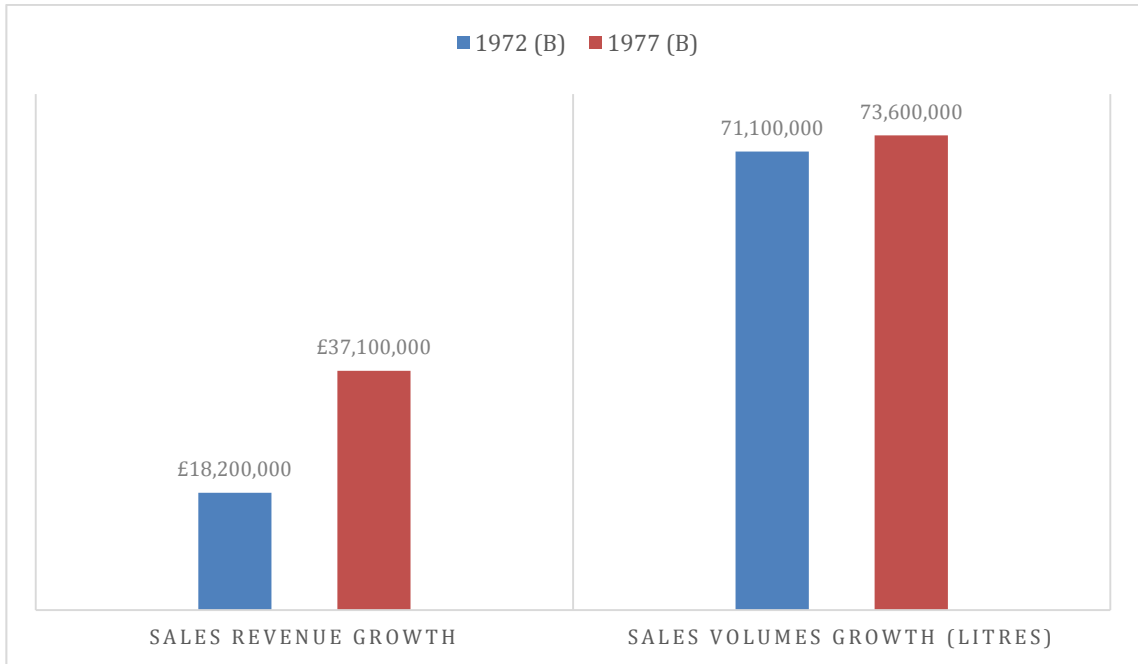
Source: Section A5.7.1K

Glacier was also aggressive in offering richer patterns of reinforcement to target retail customers including better bonus schemes at most levels of turnover and commercial terms⁸⁵⁷. The patterns functioned to encourage escape-avoidance of Wall's brands and commercial offering.

Simply put, the sales made and market share held by Glacier between 1972 and 1976 functioned as a punishing stimulus event for Wall's since these sales represented aggregate escape-avoidance of its brands (Figure 198).

⁸⁵⁷ Refer to the Ice Cream Report (1979, §191).

Figure 198 – Extent of Escape-Avoidance of Wall’s Brands Encouraged by the Products of Glacier



Source: Sections A5.7.1B and A5.7.1D

Wall’s was correct in its claims that Glacier’s efforts were felt across all segments.

However, given Glacier’s late entry into the grocery trade and its failure to further develop bulk products, the manufacturer had a smaller share. Most probably, therefore, the greatest degree of encroachment arrived from the secondary manufacturers.

B: The Rising Prominence and Market Effectiveness of Secondary Manufacturers

As indicated in previous sections, one of the more distinctive features of the ice cream market during the 1970s refers to the secondary manufacturers (e.g., Dairy Tops Group, Creamery Fare Continental Ice Cream) having managed to acquire a relatively large share of the ice cream spend of supermarkets and freezer centres (part of the Grocery trade and selling largely take home products) during the 1970s⁸⁵⁸. In contrast, their share of the segment comprised of CTNs and similar outlets remained relatively small⁸⁵⁹.

Wall’s was emphatic: the emergence and development of the grocery trade and the parallel rise of the secondary manufacturers to salience functioned to invigorate competition with encroachment pressures felt nationwide. In aggregate, these manufacturers exerted “effective national competition” (Monopolies and Mergers Commission 1979, p. 124)⁸⁶⁰.

Historically, the traditional trade was originally developed and later dominated by the national manufacturers especially via freezer and outlet exclusivity. In

⁸⁵⁸ Refer to the Ice Cream Report (1979, §231-232) and Section A5.7.7.

⁸⁵⁹ Refer to the Ice Cream Report (1979, §44). See Section A5.2.6B.

⁸⁶⁰ Refer to the Ice Cream Report (1979, §346).

addition, most secondary manufacturers did not produce the entire and more complex range of ice cream products. Instead they focused on simpler and narrower standard ranges including bulk packaged, multipacks and/or dessert items typically sold in the supermarkets, home freezer centres, and other retailers classed within the grocery and the catering trade segments⁸⁶¹.

Several events appear to have stimulated this specialisation and growth: first, the Commission noted that the fast-paced adoption of domestic refrigeration (especially deep freezers and combined fridge-freezers) broadened the scope of consumer purchases – deep freezers with greater capacity than the smaller appliances marketed prior to the 1970s enabled consumers to stock more and/or larger sized ice cream packs at home for consumption therein⁸⁶². Increases in demand in conjunction with other factors⁸⁶³ stimulated the growth of grocery outlets particularly of home freezer centres and supermarkets. These outlets generally sold take-home products (i.e., dessert and bulk items)⁸⁶⁴. Therefore, demand for certain types of ice cream by the sector burgeoned, in turn exerting pressures that functioned to open the relative stricture of the scope of the ice cream market. In addition, the growth in the grocery trade and the emergence of chains and larger stores exerted pressure on smaller outlets. The latter lost sales of bulk (to be consumed at home as dessert) and confectionery products to the outlets within the former segment on account of the former offering more inexpensive prices. To the extent that percentage of confectionery products Wall's sold through the smaller shops fell from 56% in 1971 to 45% in 1975 and rose to 11% through the grocery trade⁸⁶⁵.

Second, the increased demand of 'own label' ice cream for rebranding by most of the major grocery chains during the 1970s further relaxed the relative scope of the market. Both the national and the larger secondary manufacturers (e.g., Dairy Tops Group, Creamery Fare Continental Ice Cream) competed for this segment with several firms in the latter category gaining steady orders by national retail chains⁸⁶⁶.

Third, most of the larger major retailers did not rely on the provision of freezers by the manufacturers and therefore had a means of escape-avoiding the condition of being tied exclusively to a single manufacturer's brands. Some of these retailing groups also tended to stock the brands of several suppliers in any given location. The more modern freezer cabinets and store layouts seem to have been designed to accommodate such a multiplicity of brand offering⁸⁶⁷.

Fourth, in parallel to these developments, cash and carry, frozen food, and catering wholesalers expanded the range of products they carried to include ice cream. These organizations became more active in the market during the

⁸⁶¹ Refer to the Ice Cream Report (1979, §44, §231-232) and Section A5.7.7. Their narrow offerings were often supplemented through the purchase of confectionery/soft mix items produced by third parties.

⁸⁶² Refer to the Ice Cream Report (1979, §35).

⁸⁶³ Refer to the Ice Cream Report (1979, §37).

⁸⁶⁴ Refer to the Ice Cream Report (1979, §35). For example, Wall's served 720 supermarkets and no home freezer centres in 1967, and 5,060 supermarkets and 980 freezer centres in 1976 (§88).

⁸⁶⁵ Refer to the Ice Cream Report (1979, §345).

⁸⁶⁶ Refer to the Ice Cream Report (1979, §35, §231-232) and Section A5.7.7.

⁸⁶⁷ Refer to the Ice Cream Report (1979, §35).

period between the late 1960s and mid 1970s thereby relieving a portion of the distribution burden of ice cream manufacturers. In addition, an increasing number of retail chains operated their own cold storage and distribution facilities removing one of the more costly burdens impeding entry by smaller manufacturers⁸⁶⁸.

Fifth, Wall's noted that one of the more prominent positive consequences of focusing on a narrow simpler (rather than on a comprehensive and more complex) range of products (e.g., specialising in the provision of bulk products for such specialised outlets as freezer centres or catering outlets) was a relatively lower cost base and the possibility of economies and profitability⁸⁶⁹. Moreover, the production of bulk ice cream did not pose any technical difficulties or require capital-intensive operations and economies of scale were available to manufacturers of any size⁸⁷⁰. Production technologies improved and, by the 1970s, a wide and relatively accessible range of ice cream automated and semi-automated machinery was available⁸⁷¹ – "production had never been easier" (Monopolies and Mergers Commission 1979, p. 124). For example, at the time of launch of the Cornetto, Wall's was the only manufacturer supplying the product. However, since the production already existed within the time, the introduction and initial market acceptance signalled the reinforcing consequences of producing competing ranges. In a short time, Wall's found that at least 40 machines for the production of a similar range had been installed. Similarly a host of bulk, confectionery, and dessert could be produced and distributed very economically by smaller manufacturers⁸⁷². Significantly lower production costs allowed the secondary manufacturers to address the highly price conscious grocery trade and gain business at the expense of the national manufacturers⁸⁷³.

All these factors broadened the scope of the ice cream market significantly facilitating entry via the grocery trade and resulting in increased sales by the secondary manufacturers in that sector including inroads in the CTN segment. Thus, secondary manufacturers appeared to have exerted significant encroachment pressures on the national coverage model of Wall's and Glacier within the Grocery Trade⁸⁷⁴.

According to its market research, Wall's claimed that the secondary manufacturers supplied some 55% of consumer expenditure within the take-home segment. And, the share of their take home sales within CTNs rose from 8.5% (1972) to about 15.45% (1977). However, the Commission pointed out that despite the reduced importance of the CTN segment in relation to other segments and this level of encroachment from secondary manufacturers, both Wall's and Glacier retained a position of impulse product supply leadership among CTNs (as the locus wherein most impulse in-hand products were sold)⁸⁷⁵. Wall's also claimed that its large-scale operations and emphasis on investing significantly large amounts for the generation of novelty and variety

⁸⁶⁸ Refer to the Ice Cream Report (1979, §23, §38, §346).

⁸⁶⁹ See also Section A5.4.2C.

⁸⁷⁰ Refer to the Ice Cream Report (1979, §346).

⁸⁷¹ See also Section A5.2.5 on production technology.

⁸⁷² Refer to the Ice Cream Report (1979, §346).

⁸⁷³ Refer to the Ice Cream Report (1979, §36 and §38).

⁸⁷⁴ Refer to the Ice Cream Report (1979, §43).

⁸⁷⁵ Refer to the Ice Cream Report (1979, §39).

through new or improved products and more comprehensive product ranges guarded against encroachment⁸⁷⁶.

In aggregate, the sales made and market share held by secondary manufacturers between 1972 and 1976 function as a punishing stimulus event for Wall's since these sales represent aggregate escape-avoidance of its brands.

A5.4.4 Wall's Mutuality Bilateral Contingency Relations with Consumers

Generally, the patterns of purchase and consumption signalled the rewarding consequences of trading in ice cream with a particular portfolio of brands. As demand grew, manufacturers intensified their efforts. There appears to have been a positive correlation between shifts in demand and (matching) shifts in strategic emphasis by manufacturers. For example, the orientation of Walls' towards the relatively more prominent patterns of reinforcement offered by the grocery trade and the rise in importance of the secondary manufacturers.

Throughout the history of the industry, the presence and increase of consumer approach and ice cream purchases strengthened and maintained the behaviour of manufacturers that generated such levels of approach and exchange. The rate and strength of consumer approach, however, depended upon the ability of Wall's, Glacier, and the secondary manufacturers to manufacture products and suggest brand propositions that matched or exceeded certain consumer-related characteristic conditions or *reinforcement criteria*.

As described in Sections A5.2.3 and A5.3.3, the conditions governing patterns of consumer approach and purchase and consumption developed to portray increasingly pronounced characteristic features. The evidence presented throughout the study clearly indicates that these features acquired regulatory dimension and functioned to govern the marketing practices of Wall's and its rivals. After all, the very livelihood of suppliers of ice cream depended upon the sales of the various branded and unbranded products generated at the myriad of retail outlets. The evidence also suggests (see Section A5.3.3) the nature of reciprocity and co-shaping of increasing variability.

In summary, the conditions engendering approach and purchase among consumers were: (1) a *pleasure* item usually associated with summer and hotter weather or with the consumption of a meal either at home or at some appropriate location (utilitarian reinforcement); (2) the brand offered should exhibit a relative degree of *novelty* and *variety* in product composition and range (utilitarian reinforcement) and in the manner in which it was proposed (informational reinforcement)⁸⁷⁷; (3) the brand should be *available* at some location of convenience (informational reinforcement)⁸⁷⁸; (4) demand showed characteristic features of impulse products including relatively frequent

⁸⁷⁶ Refer to the Ice Cream Report (1979, §79, §340).

⁸⁷⁷ Appendix 1 of the Ice Cream Report provides a non-comprehensive list of brand names used to pitch ice cream to consumers including "Goldfinger", "Star Wars", and "Tom and Jerry" which, presumably were one form of entertainment merchandise.

⁸⁷⁸ Refer to the Ice Cream Report (1979, Chapter 1).

purchasing, little advanced planning or brand comparison on the part of the consumer, and a relatively high degree of variability given the existence of functionally equivalent and imperfect substitutes; (5) ice cream was purchased if priced at a level that provides relatively good *value for money* in contrast to rival brands and non-ice cream substitutes (*utilitarian punishment* and *informational reinforcement*)⁸⁷⁹. In this last respect, there was also some evidence with respect to the emergence of a high quality premium brand repertoire through the introduction of the Cornetto (Wall's) and the persistence of Bertorelli's (Glacier). Sensitivity of consumers to retail prices was observed in the decline in ice cream sales following the introduction of a purchase tax, the increase in demand following the removal of the tax⁸⁸⁰, and, the decline in Glacier's sales when its priced at a level above Wall's⁸⁸¹. The evidence suggests that the consumers within a take-home situation were relatively more price conscious than those within an impulse situation. In any case, the presence of non-ice cream substitutes appeared to have restricted the setting scope faced by Wall's at retailer by imposing a limit to the price that could be charged. Beyond this limit consumers would have escape-avoided ice cream. Both Wall's and Glacier kept close to the Retail Price Index to reduce the risks of exposure to price sensitivity⁸⁸².

Besides offering products that were designed to match these conditions, the unique value proposition of Wall's emphasised premium pricing, salient product quality, and a strong and growing reputation of market innovation among consumers.

A5.4.5 Wall's Mutuality plus Exchange Bilateral Contingency Relations with Retailers

Patterns of retailer approach to and escape-avoidance from the net reinforcement contingent upon trading in the brands of a particular manufacturer functioned as *informational reinforcers* or *punishers* with *regulatory dimension*. To manufacturers, retailer approach and escape-avoidance patterns signalled relative richness of routes to the rewarding consequences from mass purchase among ice cream consumers within a particular segment while, on the other, the patterns signalled the extent of access to these routes. When directly exposed to the contingencies, the emissions of the manufacturers generated some measure of utilitarian reinforcement and punishment.

In the case of Wall's, for example, the evidence demonstrates a positive relation between increases in and strengths of retailer approach (e.g., CTNs, home freezer centres) and increases in marketing practices designed to increase these strengths.

Throughout the years, intermediation practices became increasingly more important to the national manufacturers and to the larger secondary

⁸⁷⁹ Refer to the Ice Cream Report (1979, §349). The reinforcement criteria of consumers are discussed in Section A5.3.3 and Section A5.4.

⁸⁸⁰ Refer to the Ice Cream Report (1979, §282).

⁸⁸¹ Refer to the Ice Cream Report (1979, §263).

⁸⁸² Refer to the Ice Cream Report (1979, §27, §107, §196).

manufacturers because, in aggregate, retailers represented indirect access to a far larger critical mass of consumers than going direct. As consumer demand expanded, efforts towards intermediation (which appeared already in the 1920s) increased. During the 1970s market expansion at retail level intensified with Wall's canvassing some 14,000 outlets in 1976 compared to the 5,714 outlets contacted by Glacier⁸⁸³.

Aside from its franchising arrangements operated through a separate legal entity (Wall's-Whippy) but a subsidiary nonetheless, Wall's shed its direct mutuality-plus-exchange relations with consumers and replaced relationship structure to include a single intermediary tier (Figure 200 and Figure 201)⁸⁸⁴. Advances in refrigeration technology and developments within the broader frozen foods industry occasioned the emergence of a second tier, wholesale, which was gaining momentum even though the sector remained embryonic.

From the perspective of national manufacturers, retailers were a route to a significant source of potentially lucrative revenue stream and, as a stimulus event within the behaviour setting, represented a significantly prominent reinforcer. Retailers functioned to regulate manufacturer reinforcement patterns and qualify relative setting scope structure: Briefly, the contraction in the number of CTNs and other similar outlets in the traditional trade that started in the 1960s and continued during the 1970⁸⁸⁵ signified a reduction in the number of routes to consumers (decrease in the quantity of reinforcers). This occasioned Wall's attempting to increase the volume of business each retailer traded in its brands. In parallel, there was increase in the numbers of grocery trade outlets many of whom were relatively large organisations in comparison to CTNs and SGSs. This signified an increase in the quantity of reinforcers in the behaviour setting *and* an increase in the quality of reinforcers because the larger grocery trade outlets typically placed relatively larger orders or required products that yielded a higher per unit value to Wall's. In the presence of this increased quality and quantity of the grocery trade as a reinforcer (in contrast to the steadily decreasing quantity of traditional trade reinforcers), Wall's efforts were shifted towards attracting business from the grocery trade. Other factors such as the relative geographic dispersal among retailers and the unitary cost of sustaining a retailer functioned to further modify the patterns of reinforcement contingent upon trading with certain outlets over others.

⁸⁸³ Refer to the Ice Cream Report (1979, §102, §192).

⁸⁸⁴ See Section A5.3.1.

⁸⁸⁵ Refer to the Ice Cream Report (1979, §33, §88).

Figure 199 – The Process of Intermediation at Wall's: Bilateral Contingencies Until 1963

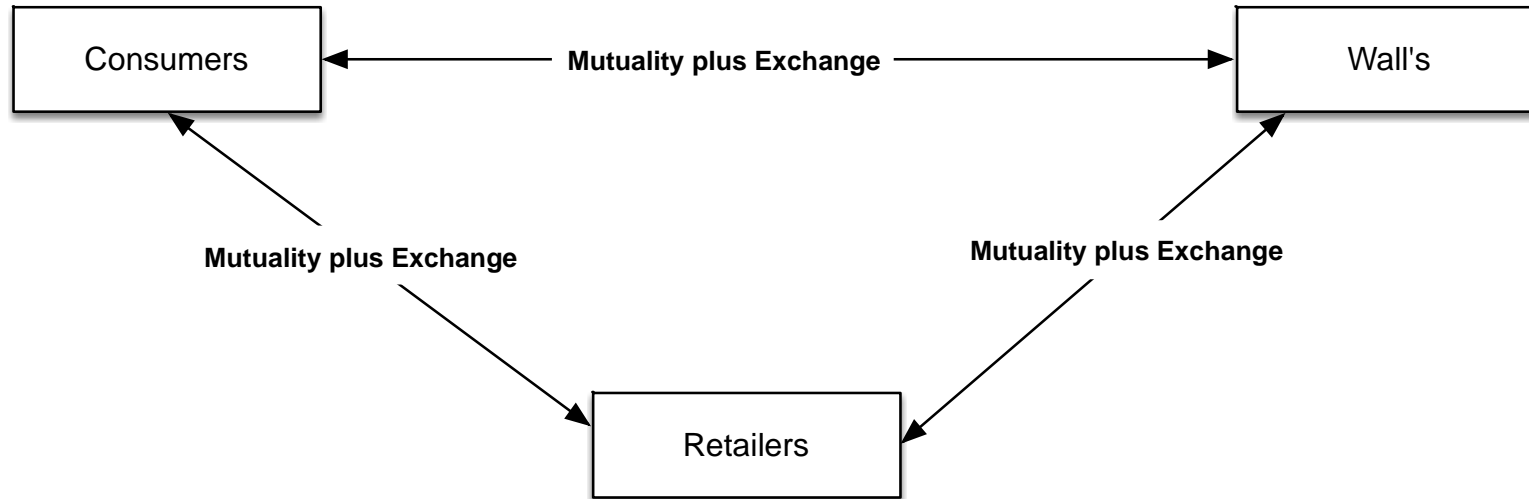
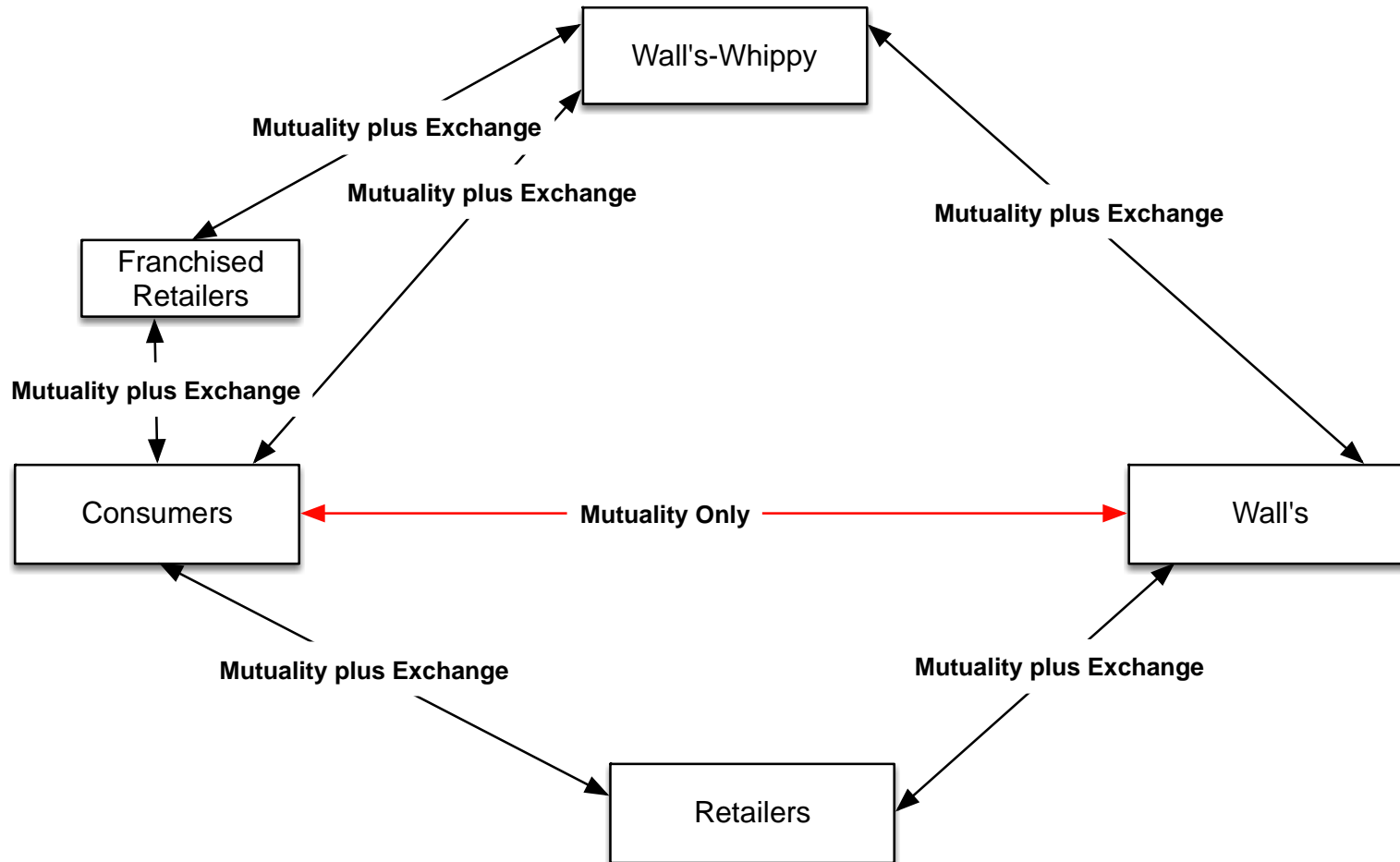


Figure 200 – The Process of Intermediation at Wall's: Bilateral Contingencies After 1963



A: Retailer Reinforcement Criteria (The Traditional Trade versus the Grocery Trade)

The rate and strength of retailer approach depended upon the ability of Wall's, Glacier, and the secondary manufacturers to manufacturer products and suggest business propositions that matched or exceeded certain retailer-related characteristic conditions or *reinforcement criteria*.

Generally, retailer approach to any manufacturer's brand was a function of the patterns of utilitarian and informational reinforcement on offer in relation to ice cream and non-ice cream substitutes both expressed in terms of their potential contribution to outlet turnover and profitability. The evidence implies that retailer behaviour tended towards the richer pattern. This is inferred by reasonable conduct of business and represented one of the rules summarising the business model and reinforcement criteria governing the behaviour of all retailers. The evidence also suggests two other similar rules each of which governed the behaviour of traditional and grocery outlets given their typical respective focus on impulse and take-home situations⁸⁸⁶.

Table 23 summarises the evidence to present a comparison of the traditional and the grocery trade including the reinforcement criteria that Wall's and other manufacturers would have had to match and exceed in their product and brand offerings.

⁸⁸⁶ As stated in Section A5.2.3, there was overlap: groceries sold confectionery items purchased by consumers on impulse while CTNs stocked dessert products purchased for consumption at home. Besides this overlap, it is reasonable to assume that the traditional trade rules and the grocery trade rules *broadly* governed the behaviour of outlets within each segment.

Table 23 – Comparison of Features and Reinforcement Criteria Characterising the Traditional and Grocery Trade Segments

	Traditional Trade Segment	Grocery Trade Segment
Main Type of Outlet	Individual and multiple CTNs • confectioners and tobacconists • seasonal and entertainment outlets • mobile outlets • small general stores.	Home Freezer Centres • Supermarkets.
The Segment in Figures: Saliience of Retail Trade as Reinforcer	Increase in Total Consumer Expenditure from £83.5m (1973) to £146m (1977) – 75% • Total Market Increase 120% • Decline in Share of Consumer Expenditure Distribution from 69% (1973) to 55% (1977) • Contracting.	Increase in Total Consumer Expenditure from £24.3m (1973) to £87m (1977) – 258% • Total Market Increase 120% • Increase in Share of Consumer Expenditure Distribution from 20.1% (1973) to 32.7% (1977) • 55% of consumer expenditure on ice cream take home products was in respect of manufacturers other than Wall's and Glacier • Rapidly expanding.
Characteristic Features and Factors Effecting Relative Degree of Setting Scope Stricture and Regulation of Patterns of Reinforcement	Relatively more fragmented and heterogeneous group of outlets • Outlets had a relatively small scale operation with some outlets (such as beach kiosks) being extremely susceptible to seasonal and weather fluctuations and almost entirely dependent on ice cream sales • Outlets were independently owned and had a relatively small localised reach • Most outlets did not own a freezer and would not be unwilling to invest in one • Relatively small size orders • Did not have distribution facilities • Per unit cost of fulfilling orders was relatively high because of relatively small drops • Decreasing in number and in importance among consumers • The segment had relatively deep historical ties with Wall's and Glacier and entry into segment was relatively hard due to the dominant share held by the national manufacturers • Competition for retailers was characterised as a virtual duopoly and developing at a very slow rate in contrast to grocery trade • The reduced levels of price competition rendered the impulse trade more profitable on average • Outlets stocked imperfect non-ice cream substitutes that imposed a cap on the pricing of ice cream to reduce risk of switching • Ice cream did not necessarily represent a relatively large volume and contribution to turnover and profits of the retail outlet depending upon location and consumer traffic • More narrow range of brands and products may	Relatively more homogenous and non-fragmented group of outlets • Outlets had a comparatively larger scale of operations with many being part of a regional or national chain • Many outlets owned freezers and did not require one • The newer outlets tended to provide for more refrigerated selling space and used “refrigerated runs” as an integral part of shop design rather than separate cabinets (Monopolies and Mergers Commission 1979, p. 15, §35) • Some of the larger organisations had their own distribution facilities • Orders of each outlet were typically larger • Per unit cost of fulfilling orders may have been less because of relatively larger drops • Represented decreased production costs in case of own label production • Larger outlets and chains had greater bargaining power • Business model of outlet significantly reduced susceptibility to seasonality due to a very wide spread of product ranges on sale • Increasing in number and in importance among consumers • The segment had some ties with Wall's and Glacier via Unilever and JLC but entry into segment was relatively easy but characterised by "severe price competition" (Monopolies and Mergers Commission 1979, p. 15, §36) • Competition became more intense and developed quickly over the years with “more extensive and larger discounting” and discounting rates rising as a proportion of supplier turnover (Monopolies and

	Traditional Trade Segment	Grocery Trade Segment
	not have attracted a large volume of consumer traffic • Outlets were ubiquitous and highly numerous • Minimal bargaining power unless outlet was part of a chain • Presented some opportunity in increasing the turnover of existing outlets.	Mergers Commission 1979, p. 15, §36) • The heightened levels of price competition in this sector rendered the take home trade less profitable on average • Several secondary manufacturers of a significantly smaller but still viable scale of operations populating supply • Ice cream may have represented a relatively stronger contribution to turnover and profits of outlet depending upon location and consumer traffic • Wider choice of brands and products may attract larger consumer traffic.
Reinforcement Criteria and Minimum Conditions that Manufacturers had to Match or Exceed (Critical Success Factors of Supplier Offer)	Relatively less price conscious even though supplier offering was evaluated according to whether consumer prices were competitive and offered consumers value for money • Levels of service and delivery provided by suppliers were of the highest importance • Other factors ranked of highest importance included: a relatively wide product range, relatively high levels of product quality, product development and innovation, the provision of freezer cabinets, sales promotion campaigns, and brand reputation • Ice cream was a relatively high risk product due to the unpredictability of the weather and its relatively low contribution to turnover • Retailers <i>escaped</i> the associated costs of freezer installation, repair and replacement by not stocking ice cream • Typical demand are products for immediate consumption (namely, confectionery items) and thus outlets were susceptible to impulse and convenience purchasing patterns of consumers including: relatively frequent purchasing, little advanced planning or brand comparison on the part of the consumer.	Extremely price conscious • Sensitive to level of product development efforts of suppliers • Price matters more than brand • More narrow range of products required • Catering for consumers within Take-Home situations • Typical demand was for products for home consumption particularly dessert products and bulk packs (including multipacks) • Products less susceptible to within season weather fluctuations • Most grocery chains had their own label brand • A number of the major retailer chains tended to provide space within their individual outlets for more than any single supplier's brand and stock the brands of different suppliers in their individual outlets • Most retailers did not escape-avoid the associated costs of freezer installation, repair and replacement by not stocking ice cream but had their own • Smaller outlets within the trade tended to be more reluctant in the early days to invest in their own freezers.

Source: The Ice Cream Report (Monopolies and Mergers Commission 1979, §19, §35-36, §39-40, §72, §316), Section A5.2.3, and Section A5.2.3B

B: Reciprocity and Interaction within Retailer↔Wall's Bilateral Contingencies

Generally, Wall's competed within the two segments at retail by offering a nationally branded and comprehensive range of relatively high quality ice cream that was very well received by consumers and that carried a strong reputation for product innovation. It offered relatively competitive pricing and a relatively high level of service including logistics and relatively prompt stock replenishment levels. Wall's also maintained a sales team that persistently canvassed new and existing outlets in the manner already explained. Overall, however, increasing human resource costs limited the number of sales people Wall's could maintain and thus tended to concentrate its efforts on improving the existing turnover of existing customers rather than poaching customers off competitors⁸⁸⁷.

The main difference between its offering to the grocery and that to the traditional trade segments was its policy with respect to the provision of freezers: (a) refrigeration was normally provided to CTNs, seasonal, catering, and entertainment outlets; (b) to encourage all other retail outlets particularly grocery multiples (because of these also sold other frozen food products) to provide their own means of refrigeration; (c) to refuse the provision of refrigeration to home freezer centres; and, (d) to provide supermarkets, self-service grocers and cash and carry stores only when competition made it absolutely necessary⁸⁸⁸.

In this way freezer exclusivity was applied selectively and predominantly to the traditional trade. Originally and until well into the late 1960s, Wall's penetrated and developed the market by offering the provision of a freezer to any outlet. During the early years of the emergence of the traditional trade segment, retail outlets required such a strategy as a means of reducing the aversive consequences of carrying a product that was previously not retailed therein⁸⁸⁹. As ice cream demand within the segment increased and the segment was populated by a variety of suppliers at all levels of the channel, an increasing number of retailers had their own refrigerated cabinets (Table 23). In addition, outlet and freezer exclusivity received a mixed reception among multiple grocery distributors with some finding the practice rewarding and others aversive⁸⁹⁰. A most compelling reason why Wall's seemed to have started the process of discontinuing the practice within the grocery trade is that the "severe

⁸⁸⁷ Refer to the Ice Cream Report (1979, §100-101, §334).

⁸⁸⁸ Refer to the Ice Cream Report (1979, §99).

⁸⁸⁹ Refer to the Ice Cream Report (1979, §316).

⁸⁹⁰ A number of the more important multiple grocery distributors argued against freezer and outlet exclusivity and the associated implications of such a model. Others did not oppose the relationship form claiming that their policy was to rely on a single supplier anyway because such a strategy (a) resolved the issue of space constraints within each outlet, (b) removed the retailer's responsibility and expense of purchasing and maintaining freezer cabinets, (c) simplified order processing and merchandising, (d) encouraged manufacturers to assume a more active role in maintaining the equipment, in merchandising, and in keeping adequate levels of inventory, (e) reduced the per store delivery costs since delivering a single manufacturer's brands signified larger drop densities, and, (f) purchasing volumes from a single manufacturer rather than from a spread of manufacturers occasioned better distribution discounts. See also Section A5.9.1.

price competition” and increasing amount of discounting especially by secondary manufacturers that occurred within the segment during the 1970s would have rendered providing a freezer and servicing the outlet economically non-viable even with exclusivity⁸⁹¹. Thus, the net potential and actual aversive consequences of servicing the market segment compelled Wall’s to discontinue the practice therein with the noted exceptions. On the other hand, the traditional trade continued requiring the provision of an exclusive freezer (Table 23) and the practice was thus retained.

Given the focus on Wall’s practice of exclusivity, the remainder of the case study is dedicated to further illustrating the practice of exclusivity by this national manufacturer⁸⁹².

During 1976 alone 85% and 57% of Wall’s sales to CTNs and to SGSs respectively were made to retailers who were using its freezer cabinets⁸⁹³. Wall’s had an installed freezer base of 58,756 cabinets varying in type and size depending upon the requirements of the particular outlet. 75% were supplied to CTNs, SGS, and catering and institutional outlets while the remaining 25% were installed in seasonal entertainment outlets, groceries, and other stores⁸⁹⁴. Table 24 presents the anatomy of exclusivity contracts at retail as practiced by Wall’s and Glacier until 1975. On the 1st January 1975, a year before the start of the investigation, Wall’s discontinued its practice of offering outlet exclusivity while retaining cabinet tie-in contracts and agreements.

⁸⁹¹ See Table 23 and the Ice Cream Report (1979, p. 15, §36).

⁸⁹² Given the aims and findings of the Commission, the Ice Cream Report (1979) provides further details on the pricing policies of Wall’s (paragraphs §103-112, §327-333) and of Glacier (paragraphs §193-196, §374-378), on comparative price movements (paragraphs §275-281), on Glacier’s exclusivity practices (paragraphs §182-190, §358-367), and on Glacier’s discounting policies vis-à-vis its customers (paragraphs §198-204, §379-380). A detailed discussion of these policies is beyond the scope of the case. Suffice it to say, however, that Glacier practice exclusivity in similar fashion to Wall’s.

⁸⁹³ Refer to the Ice Cream Report (1979, §31 fn. 1).

⁸⁹⁴ Refer to the Ice Cream Report (1979, §98).

Table 24 – Exclusivity Arrangements Generally Used by Wall’s and Glacier until 1975

Agreement Type	Wall’s	Glacier
Standard agreement for the supply of ice cream and the loan of a refrigerated cabinet. <i>(Per unit cost of supply to these retailers was the highest).</i>	Freezer Exclusivity – retailers were precluded from using freezer cabinet provided by Wall’s to offer the brands of other ice cream manufacturers (§89-§90). Outlet Exclusivity – retailers were precluded from offering the brands of other ice cream manufacturers within the outlet (§89-§90).	Freezer and outlet exclusivity (§182) depending upon the type of product (§185). Retailers purchasing their soft mix ice cream are not contractually bound to buy their other ice cream requirements (e.g., ice lollies) from other suppliers. However, Glacier did withhold the supply of branded soft ice cream to those retailers found to stock their other ice cream requirement from rivals (§185).
Special agreements with larger customers that include the provision of a refrigerated cabinet. <i>(Per unit cost of supply to these retailers was relatively high).</i>	Freezer and outlet exclusivity as per standard agreements (§91).	Freezer and outlet exclusivity as per standard agreements (§187).
Standard agreements for the supply of ice cream to customers who provide their own refrigerated cabinets. <i>(Per unit cost of supply to these retailers was relatively low).</i>	Outlet exclusivity (§92-§93).	Freezer and outlet exclusivity.
Special agreements with larger customers that did not include the provision of a refrigerated cabinet. <i>(Per unit cost of supply to these retailers the lowest).</i>	Outlet exclusivity (§92-§93).	Outlet exclusivity with exceptions (§187).
Agreements with wholesalers excluding vertically integrated subsidiaries or organizations associated through mother company.	Non-exclusive supply (§97).	Exclusive supply (§188).
Franchised mobile van and static outlet operators.	Exclusive supply (§128).	Exclusive supply with minor exceptions (§189).

Source: (Monopolies and Mergers Commission 1979).

Figure 201 presents the mutuality-plus-exchange relationship shared by exclusive retailers and Wall’s and highlights the reciprocal nature of the *mutually reinforcing interaction* between the two parties. On the one hand, Wall’s maintained its practice of freezer and outlet exclusivity for several decades due to the success the strategy had as a means of encouraging a critical mass of retailers to trade in ice cream thereby benefiting from the aggregate net rewards contingent upon mass purchase and consumption, of reducing the per unit production, distribution, administration, and marketing (including product development) costs, of stabilising demand and guaranteeing revenue streams while safeguarding them against competitive encroachment, of enhancing predictability and, to some degree, reducing the exposure to the aversive effects of uncertainty and demand variations and variability (see

Section A5.3.3). Historically, these small retailers, particularly the segment including Confectioners, Tobacconists, and Newsagents (CTNs) were the most important route to consumers of ice creams.

On the other, exclusivity reduced or removed the more important net aversive consequences contingent upon retailing ice cream (Table 25) while providing a range of added utilitarian and informational incentives that varied according to the strength and rate of retailer approach within contracts and arrangements. The Ice Cream Alliance, The Retail Confectioners and Tobacconists Association, Cooperative Organizations UK, Wall's, and Glacier all claimed that several of the relatively small retail outlets would cease to offer ice creams due to the associated net aversive utilitarian and informational consequences given the prevailing contingencies specified by their respective business model and by the manner in which ice cream was to be served to consumers⁸⁹⁵. The evidence presented in Table 25 shows that the net aversive consequences of retailing ice cream without exclusive freezers were significantly higher than the potential net positive consequences contingent upon entering such an arrangement.

⁸⁹⁵ The Ice Cream Alliance represented 1,500 members and was considered as the voice of the smaller ice cream manufacturers and retailers. The Retail Confectioners and Tobacconists Association represented some 8,000 members who owned about 10,000 to 12,000 retailers between them. Cooperative Organizations UK represented cooperatives in the UK. Section A5.9.1 tabulates a summary of the views shared by the various stakeholders to the ice cream market.

Figure 201 – Reciprocal Reinforcement in Exclusive Retailer and Wall's Mutuality-plus-Exchange Bilateral Contingencies of Reinforcement

Approach to Wall's is a function of (a) Approach to Ice Cream in relation to its Contribution to Outlet Turnover, Profit, and Costs vis-a-vis Competing Products, and, (b) Contribution to Outlet Turnover, Profit, and Costs of Wall's Unique Selling Proposition vis-a-vis Offers by Glacier and other Rivals

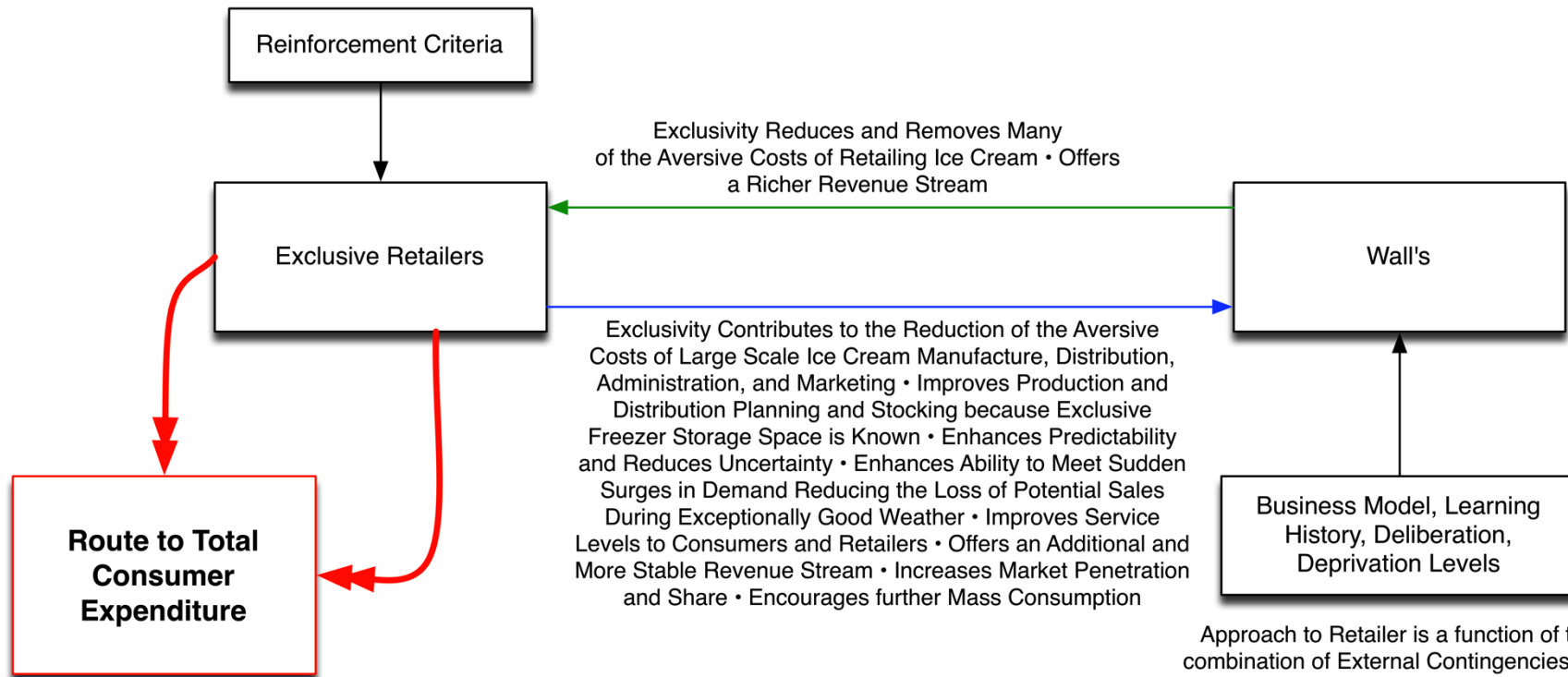


Table 25 – The Incentives and Costs to Traditional Outlet Contingent Upon Ice Cream Retailing

Utilitarian Incentives	Among CTNs, ice cream sales contributed only a very small proportion (between 1 and 2%) of total turnover. In 1977, the average sales value to CTN outlets amounted to £530 (§17).
Utilitarian Cost	<ul style="list-style-type: none"> • A significant capital outlay involved in the acquisition of a freezer • The relatively high costs of operating the equipment and maintaining it in a good state of repair.
Informational Cost	<ul style="list-style-type: none"> • The need for readily available replacements or repair in case of breakdown during peak season. • The risk of spoilage in case of breakdown and associated lost sales and profits until the freezer is repaired. • Ice cream is a relatively low value product and, thus, its relative contribution towards breakeven is low. • For hygiene and quality purposes, freezers cabinets could only be used for ice cream (§285). • The relatively high volume of sales that had to be generated to recover the original capital outlay and operating expenditure to register a profit within a reasonable period. • Other possible informational aversive consequences included: responsibility for sourcing an adequate freezer and keeping it in full working order, having several suppliers increased the utilitarian and informational costs of placing orders to keep outlet with sufficient levels of stock, responsibility for anticipating which products would be more fast moving and assuming the risk associated with unsold stock (especially due to seasonality, unpredictable weather, and within season weather fluctuations), especially with lower volume sellers manufacturers had little incentive in playing an active role in providing assistance in merchandising and ensuring adequate levels of inventory, purchasing from several manufacturers rather than larger drop sizes from a single one did not occasion better discounts, some retailers simply could not afford the outlay (§285), difficulties in discerning the differences among rival brands to the extent that one organisation commented that having more than one supplier would mean carrying “duplicate varieties of several suppliers” (Monopolies and Mergers Commission 1979, p. 107, §295).

C: Wall’s Offer Around Outlet and Freezer Exclusivity

Figure 202 is constructed from Table 24 and depicts the mix of exclusivity contracts and special arrangements offered by Wall’s at retail that were occasioned by (1) the strength of retailer approach in combination with (2) the cost of acquiring, financing, sustaining and strengthening that approach. The strength of retailer approach to ice cream as a function of (a) their business model, levels of deprivation, managerial deliberation, and learning history in conjunction with (b) prevailing contingencies including seasonality, the weather, long term demand variation, localised demand variability within consumer situations, and offers by Glacier and other rivals. The cost of acquiring, maintaining and increasing that approach was a function of whether the retailer had a freezer and of the cost per unit of supplying (i.e., production, distribution, administration, and marketing costs per unit) that retailer. For example, Wall’s claimed that smaller manufacturers were precluded from supplying smaller outlets due to the very high cost of arranging a continuous stream of distribution of small drops to a rather large number of stores⁸⁹⁶.

⁸⁹⁶ Refer to the Ice Cream Report (1979, §317).

These stimulus events occasioned topographies emitted by Wall's that discriminated among varying levels of approach and costs of that approach and offering the best patterns of reward to those with the combined highest approach and the lowest incidence of costs. Broadly, Wall's behaviour functioned to positively reinforce higher rates of retailer approach through a series of incentives and negatively reinforce retailer approach through the reduction and removal of the aversive consequences of retailing ice cream.

Table 26 presents an analysis of the content of and the manner in which these various contracts functioned.

Figure 202 – Mix of Exclusivity Contracts and Arrangements Offered Contingent Upon Increasing Strength of Retailer of Approach (Reinforcement) and Decreasing Incidence of Managing the Relationship (Punishment)

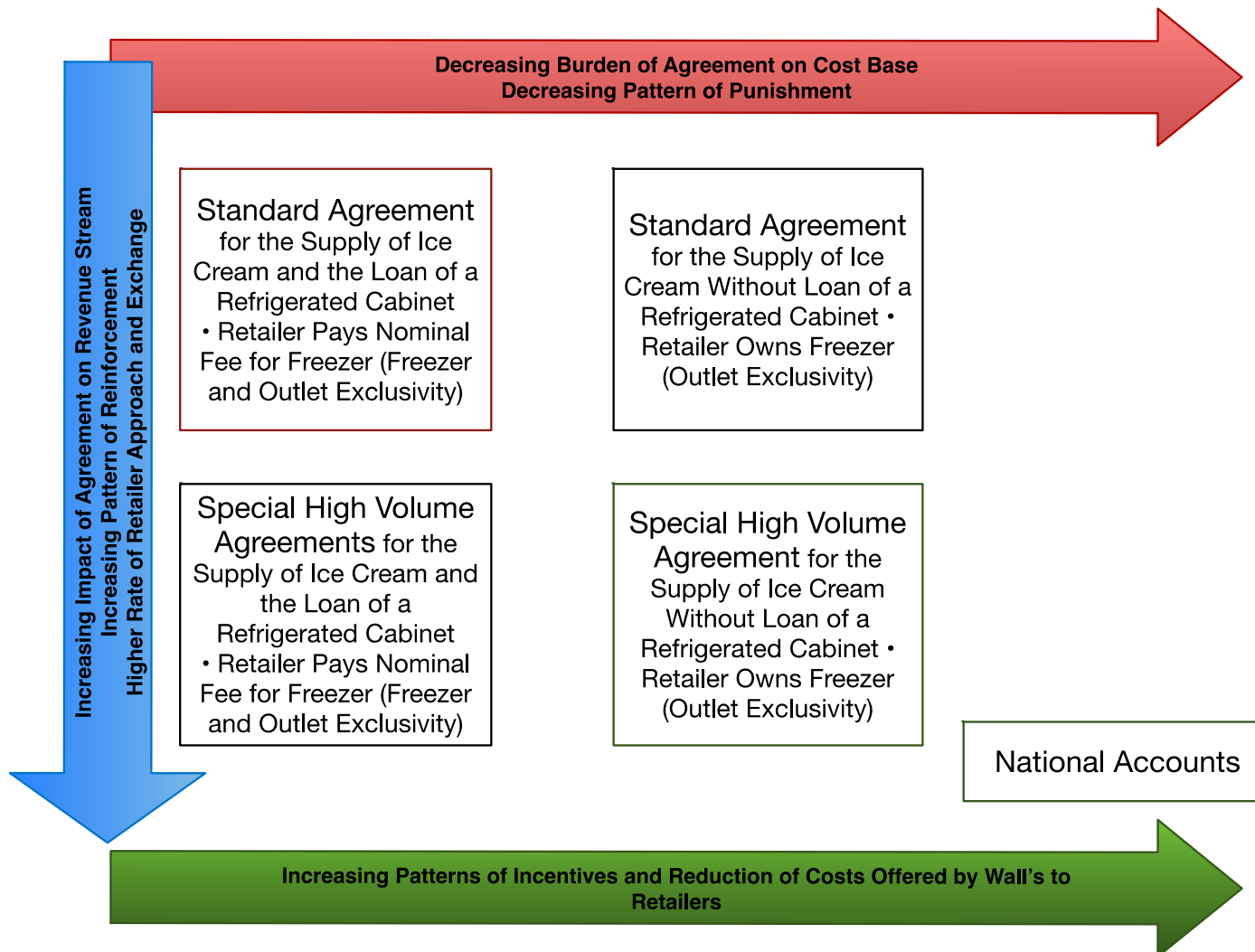


Table 26 – An Analysis of the Contractual Relations of Wall’s and the Use of Freezer and Outlet Exclusivity

Type of Contract	Main Stimulus Event	Pattern of Reinforcement and Punishment on Offer to Retailers and the Actual Consequences to Wall’s of Managing the Contract
<p>Standard Agreement for the Supply of Ice Cream and the Loan of a Refrigerated Cabinet.</p> <p>There were some 37,500 agreements of this type which were typically signed by CTNs, general trade outlets, small grocers, caterers, entertainment and seasonal outlets (§91).</p>	<p>Retailer without a freezer functioned to (a) present a rule regarding the possibility of opening a route to the potential reward from tapping the consumer traffic existing at the retailer (informational reinforcer); (b) present the rule about the absence of a freezer; (c) present a rule regarding the risk of potential defection to competitors and erosion of market leadership position (informational punisher); and, (c) Signal setting scope stricture at retail is relatively closed and characterised by relatively low strength of retailer approach (absence of utilitarian reinforcer).</p>	<p>Positive Reinforcement by Wall’s: Supplied with ice cream in reasonable quantities, at reasonable times, and at wholesale prices (§89). Participation in sales promotion schemes organised by Wall’s (§89) enhanced the sales and profit potential of retailing ice cream.</p> <p>The published wholesale prices discriminated between retailers who were provided a freezer and those who had their own. The published terms governing the former were poorer since these took into account the costs of freezer provision plus additional distribution costs which Wall’s claimed it incurred when supplying its own refrigerator customers (§99).</p> <p>Negative Reinforcement by Wall’s: Wall’s incurs the cost of supplying the cabinet, of maintaining it in a reasonable state of repair, and of insuring it against fire (§89). This functioned to remove the major costs of ice cream retailing. The aversive consequence to Wall’s is the cost of financing the cabinet and managing the process through Total Investment Ltd (Section A5.3.5 describes the manner in which Wall’s and Glacier joined forces to form Total Refrigeration Limited to manage the outsourcing, provision and maintenance of freezers.) According to Wall’s its “refrigerators [allowed] genuine distribution economies ... by virtue of the security of Wall’s access to the refrigerators” (Monopolies and Mergers Commission 1979, p. 38, §99).</p> <p>Steady and prompt supply of ice cream functioned to reduce potential misgivings on ice cream trading by the retailers (see Table 25).</p> <p>Positive Punishment by Wall’s: The retailer was invited to insure against direct or consequential liability arising from defect of the freezer or want of repair (§89). Barnwoods, a subsidiary of Total Investment provided special insurance coverage to retail outlets (Section A5.3.5). This represented additional profits to Wall’s via their 50% shareholding in Total Investments.</p> <p>Wall’s escaped the potential costs of a failure to supply ice cream because of strikes or temporary shortages and of consequential losses by providing for a rejection of any</p>

Type of Contract	Main Stimulus Event	Pattern of Reinforcement and Punishment on Offer to Retailers and the Actual Consequences to Wall's of Managing the Contract
		<p>liability to such failures and losses (§89).</p> <p>Retailers paid the stipulated wholesale prices issued by Wall's (§89).</p> <p>Setting Closure Effects: Retailers were tied to participating in sales promotion schemes (§89).</p> <p>Wall's retained right to terminate the agreement by giving one month's notice if sales through the freezer fell below £300 per annum (§89). This provision functioned to render sales relatively more predictable by guaranteeing an annual minimum order level thereby avoiding the aversive consequences of such prevailing contingencies of seasonality, the weather, and demand variability.</p> <p>Changes in Setting Scope Stricture and Patterns of Reinforcement on Offer: As stated in earlier sections, by 1974 Wall's was experiencing relative stagnation in its confectionery products and a general decline within the traditional trade. In parallel, secondary manufacturers were hot on its heels enjoying significant growth in the sales and overall market share. These stimulus events may have been a partial reason why the firm discontinued outlet exclusivity across all retailers in both segments – it appears that the move was aimed to encourage retailer approach.</p> <p>Until 1st of January 1975 standard agreements included freezer <i>and</i> outlet exclusivity (§90). Freezer exclusivity precluded the storage of ice cream from rivals and of other frozen foods (§89). Before the 1st January 1975 retailers were precluded from supplying products of rivals within the outlet itself (outlet exclusivity). The agreement lasted five years and automatically renewable unless a month's termination was given at the end of the five year period (§90).</p> <p>On the 1st January 1975, Wall's changed the terms of its agreement relaxing (a) the condition of outlet exclusivity, and, (b) decreasing the termination notice to six months (§89-90, 94).</p> <p>All customers with agreements signed before 1975 were, as a matter of policy, treated as if they had signed a post-1975 agreement (§90). As such the old agreements were</p>

Type of Contract	Main Stimulus Event	Pattern of Reinforcement and Punishment on Offer to Retailers and the Actual Consequences to Wall's of Managing the Contract
		<p>not replaced by new contracts – strictly, speaking therefore the customers under the pre-1975 agreements were under the legal obligations governed by their old contracts. This may have caused problems because, according to the Commission, during the investigation Wall's expressed its intention of signing the post-1975 contracts with the old agreement customers (§94).</p> <p>Through the amendments after the 1st January all retailers were allowed to install a second freezer if their outlet had enough space. This could have presented additional revenue and profit opportunities to existing retailers who had a sizeable business. In addition, since Glacier continued requiring outlet exclusivity after 1975 (§182-190, §358-367), relaxing the outlet exclusivity clause may have functioned to generate interest among any of Glacier's retailers whose contract was nearing termination. Without outlet exclusivity such retailers may have had the opportunity to introduce additional freezers and increasing the contribution ice cream made to their outlet's turnover and profitability. Decreasing the termination notice also functioned as a means to engender approach from customers on the verge of renewal, new customers, and retailers who were tied to rivals.</p> <p>In all cases, Wall's monitored the observance of exclusivity and while such contracts were legally enforceable "it was rarely necessary for measure beyond explanation and persuasion to be taken, since customers accepted the logic of Wall's position" (Monopolies and Mergers Commission 1979, p. 36, 91). There is no evidence that quantifies the monitoring cost. However, it is clear that this was an aversive consequence of practicing exclusivity.</p>
<p>Standard Arrangements for the Supply of Ice Cream to Retailers who Supply their own Refrigerated Cabinet.</p> <p>Approximately 10,000 contracts (§92).</p>	<p>Retailer with a freezer functioned to (a) present a more salient rule regarding the possibility of opening a route to the potential reward from tapping the consumer traffic existing at the retailer by virtue of the removed need to provide for and maintain a freezer cabinet on loan</p>	<p>Positive Reinforcement by Wall's: Similar to the above. However, organizations not supplied with freezers received better bonus terms and wholesale prices (§99).</p> <p>Negative Reinforcement by Wall's: Similar to the above.</p> <p>Setting Closure Effects: Similar to the above. However, Wall's retained right to terminate the agreement by giving one month's notice if sales through the freezer fell below £200 per annum or if</p>

Type of Contract	Main Stimulus Event	Pattern of Reinforcement and Punishment on Offer to Retailers and the Actual Consequences to Wall's of Managing the Contract
	<p>(informational reinforcer); (b) present a rule regarding the risk of potential defection to competitors and erosion of market leadership position (informational punisher); and, (c) Signal setting scope stricture at retail is relatively closed and characterised by some strength of retailer approach (absence of utilitarian reinforcer).</p>	<p>the customer committed any breach in the terms of the agreement (§92). This provision functioned to render sales relatively more predictable by guaranteeing an annual minimum order level thereby avoiding the aversive consequences of such prevailing contingencies of seasonality, the weather, and demand variability. That said, many of Wall's smaller customers made annual purchases below the £200 mark (§92).</p> <p>Changes in Setting Scope Stricture and Patterns of Reinforcement on Offer: For reasons similar to the ones already explained, agreements that were signed after the 1st January 1975 relaxed the provision of outlet exclusivity and changed the expiry date and notice of termination (§93) in the same manner as explained above.</p>
<p>Special Arrangements with Larger Customers for the Supply of Ice Cream whether or not refrigerated cabinets are provided</p> <p>Special agreements were incorporated in exchanged correspondence and typically covered larger organizations and include 23 large home freezer and grocery chains, wholesalers, CTNs and catering and leisure entertainment multiples, and seasonal sites (§91, §96, §117-118).</p>	<p>These retailers functioned as the more prominent stimuli within the environment by virtue of the larger volumes of actual and potential sales they gained through access to strong consumer traffic.</p> <p>Sales to this group amounted to about £2.8m for the ten months ending October 1977 (§96).</p>	<p>Positive Reinforcement by Wall's: Similar to the above.</p> <p>Negative Reinforcement by Wall's: Similar to the above.</p> <p>Setting Closure Effects: Similar to the above.</p> <p>By virtue of their larger volumes, these retailers signified higher sales turnover and lower per unit costs of production, distribution, administration, and marketing.</p>

Additional Reinforcers offered:

(1) Discounts and Bonuses: Depending upon (a) annual turnover, (b) the type of the business in question, (c) the prominence of the freezer within the outlet and the prominence given to its brands, and (d) the range of products sold (i.e., stimulus events signalling varying strengths of approach and likelihood of consumer behaviour terminating in exchange), retailers benefited from either a retrospective stepped or sliding bonus scheme, or from an off-invoice discount, or from both. Both functioned as negative reinforcers, i.e., consequences that strengthen behaviour upon the reduction or removal of an aversive event (the wholesale cost price of ice cream is discounted or its incidence reduced through a bonus). Wholesalers, freezer centres, and some supermarkets and self-service stores received a discount and a bonus, CTNs, seasonal outlets, and similar retailers only received a bonus, and supermarkets, entertainment outlets, and similar stores only received a discount⁸⁹⁷.

In calculating bonus payments, Wall's took into account whether the retailer provided its own refrigeration. In these cases bonus percentages were higher. Sales volumes were also rewarded with better bonus rates and bands.

The bonus scheme of Wall's remained relatively unchanged since the 1960s⁸⁹⁸. Glacier adopted the standard bonus rates of Wall's in 1963 and these remained identical for both organizations until the end of 1975 when Wall's altered some aspects of its system⁸⁹⁹. Wall's attempted to make the net patterns of reinforcement contingent upon trading in its brands richer: it rectified the bonus scheme type applicable to CTNs, small caterers, and SGSs in 1975, uplifted the qualifying turnover thresholds of the bonus scales in 1976 for small shops in 1976, and again in 1977 this time for all outlet categories eligible for such bonuses. In 1978 Wall's raised bonus turnover thresholds again. Glacier matched the raises only in 1978 to the extent that for small shops selling over £621 (and where a freezer was supplied) its bonus schemes were relatively more favourable⁹⁰⁰.

Discounting practices were introduced in parallel to the emergence of the grocery and the wholesale trade between 1968 and 1969: standard discounts scales were issued varying between 5 to 20% depending upon: (a) the outlet category (namely, whether the retailer was a supermarket, a freezer centre, a cash and carry, an entertainment outlet, or a distributing wholesaler), (b) the manner in which the outlet was historically managed by Wall's, (c) the number of sites if the outlet was a multiple chain, (d) the product range purchased, (e) the volume of ice cream sold, and, (f) whether a bonus payment was applicable⁹⁰¹. For example, some entertainment outlets had a high volume of sales during the winter months and a relatively predictable demand and this strength of approach occasioned a higher rate of discount⁹⁰². Due to their significantly high volumes, national Accounts had bonuses and discounts scales that increased from 22.1% in 1973 to 24.4% of total wholesale value in 1976⁹⁰³.

⁸⁹⁷ Refer to the Ice Cream Report (1979, §113-114, §116).

⁸⁹⁸ Refer to the Ice Cream Report (1979, §114-115, see also §120-121) for a detailed description of how the bonus scheme was calculated.

⁸⁹⁹ Refer to the Ice Cream Report (1979, §279-280).

⁹⁰⁰ Refer to the Ice Cream Report (1979, §114-115, §279-280).

⁹⁰¹ Refer to the Ice Cream Report (1979, §116, see also §120-121).

⁹⁰² Refer to the Ice Cream Report (1979, §116 fn. 1, §117 fn. 1).

⁹⁰³ Refer to the Ice Cream Report (1979, §117 fn. 2).

Bonus schemes and discounts functioned to encourage greater rates of approach including off-season sales⁹⁰⁴. Generally, Glacier imitated Wall's by introducing similar schemes and arrangements⁹⁰⁵.

(2) National Accounts: 170 large groceries, freezer centres, wholesalers, CTNs, and catering and leisure multiples signalled a significant strength of approach to Wall's brands. In 1976 these organizations accounted for £22m at standard wholesale value or 38% of Wall's turnover. 51 of these organizations each had sales in excess of £100,000 in Wall's brands. This level of approach also occasioned (a) additional administrative costs through the assignment of National Account Managers, and, (b) terms and conditions that were negotiated terms more favourable than the standard ones. Over and above these terms, the 54 organizations (most were in the grocery trade) that together held 18% of Wall's turnover earned an additional minimum discount of 2%. Such reciprocity resulted in Wall's experiencing an increasing proportion of its grocery trade business passing through relatively high discount channels including grocery organisations⁹⁰⁶. Although this did have a downward pressure on sales value, significant increases in volumes must have resulted in greater scale economies.

(3) Priority of Supply: The rate of approach and the extent to which retailers tied themselves to Wall's brands also occasioned prioritisation of supply during exceptional periods of activity. Those who relied exclusively on Wall's and for whom supply represented a major part of the summer operation (for example, Wall's-Whippy franchisees and seasonal outlets) enjoyed a higher priority of supply⁹⁰⁷. Wall's also nominated customers to Total Investments for a raised priority in the repair of their cabinets⁹⁰⁸.

Briefly, the standard agreements offered by Glacier were very similar to those of Wall's with a difference in the duration of the contract (Glacier retained a 3 year renewable contract) and the minimum sales order levels (Glacier imposed a minimum threshold of £150 on outlets with their own freezer and between £300 and £1450 on outlets with Glacier provided freezers)⁹⁰⁹. In either case, after 1975 Wall's seems to have begun a process of making its contracts qualitatively and quantitatively richer vis-à-vis those of Glacier. In fact, Wall's claimed it intended to add further changes to its agreements and introduce such provisions as allowing retailers to obtain their supply elsewhere if it failed to deliver within 24 hours of a scheduled delivery day⁹¹⁰.

In conclusion, there is no evidence that provides a clear reason why Wall's discontinued outlet exclusivity. Perhaps, Wall's may have heeded the general opposition to outlet exclusivity expressed by third parties⁹¹¹. However, it seems that the discontinuation of outlet exclusivity in 1975 was a competitive ploy aimed at attracting a larger number of retailers including those of Glacier who

⁹⁰⁴ Refer to the Ice Cream Report (1979, §337-339) for further details on Wall's justification of its discounting and bonuses structure and practice.

⁹⁰⁵ Refer to the Ice Cream Report (1979, §280).

⁹⁰⁶ Refer to the Ice Cream Report (1979, §117-118).

⁹⁰⁷ Refer to the Ice Cream Report (1979, §87).

⁹⁰⁸ Refer to the Ice Cream Report (1979, §220).

⁹⁰⁹ Refer to the Ice Cream Report (1979, §18).

⁹¹⁰ Refer to the Ice Cream Report (1979, §95).

⁹¹¹ See Section A5.9.1.

were renegotiating their contracts at that point. This action would have broadened the scope these retailers and encouraged defection without incurring excessive switching costs. In later years, for example, during 1999, Wall's utilised outlet exclusivity to certain more prominent and higher consumer traffic locations. Freezer exclusivity also persisted as a practice and was found in the repertoire of 33 manufacturers including Treats⁹¹², which during the 1970s did not engage in the practice.

A5.5 Summary

Appendix 5 presents the history of ice cream manufacturing with a special focus on the nature of Wall's marketing practices in relation to prevailing and changing market contingencies. It focuses on describing the main topographical elements found in the Ice Cream Report and on categorising these elements to the sensitizing concepts identified in Chapters 3 and 4. The Appendix establishes an extensive rationale for the categorisation. The relationships between the various elements and concepts are identified and explained. The operational definitions serve as rules of correspondence between empirical evidence and theoretical constructs.

Section A5.1 of Appendix 5 gives a very brief overview of the main participants, namely, Walls and JLC as large scale national manufacturers, and Treats and about 40 other medium-sized secondary manufacturers of relative importance within the ice cream market. Section A5.2 describes the physical (e.g., the nature of the product, weather and seasonality) and social (the market structure and the role each incumbent played within the market) contingencies that recurred throughout the entire history of the ice cream industry. Due to their recurring nature, the contingencies functioned as regulatory stimulus events. Section A5.3 and A5.4 describe the two generation-situations and contrast the distinct but inter-related market problems posed by environmental conditions and faced by Wall's.

⁹¹² Refer to Vella and Foxall (2011).

Appendix 5

Part II: Supplementary Evidence and Data
Tables

A5.6 Terms of Reference of the Ice Cream Report 1979

A5.6.1 Terms of Reference

The following is a verbatim excerpt from the Monopolies and Mergers Commission (1979, p. 1, §1) that describes the terms of reference for the 1976 investigation.

“The Director General of Fair Trading, in exercise of his powers under sections 47(1), 49(1) and 50(1) of the Fair Trading Act 1973, hereby refers to the Monopolies and Mergers Commission the matter of the existence or possible existence of a monopoly situation in relation to the supply in the United Kingdom of ice cream and water ices.

The Commission shall upon this reference investigate and report on the questions:

Whether a monopoly situation exists and, if so:

- (a) By virtue of which provisions of sections 6 to 8 of that Act that monopoly situation is to be taken to exist;
- (b) In favour of what person or persons that monopoly situation exists;
- (c) Whether any steps (by way of uncompetitive practices or otherwise) are being taken by that person or those persons for the purpose of exploiting or maintaining the monopoly situation and, if so, by what uncompetitive practices or in what other way; and
- (d) Whether any action or omission on the part of that person or those persons is attributable to the existence of the monopoly situation and, if so, what action or omission and in what way it is so attributable; and
- (e) Whether any facts found by the Commission in pursuance of their investigations under the preceding provisions of this paragraph operate, or may be expected to operate, against the public interest.

For the purposes of this reference:

'Ice cream and water ices' includes ice lollies, soft ice cream mix and ice cream to which fruit, fruit pulp, fruit puree, fruit juice, chocolate, nuts or any other substance is added, but does not include cakes or other articles of food of which ice cream forms a composite part.

The Commission shall "report on this reference within a period of eighteen months from the date hereof.

(Signed) GORDON BORRIE
Director General of Fair Trading
14 October 1976

The period for completing the report was extended by direction of the Secretary of State under section 55(2) of the Fair Trading Act 1973 to 31 December 1978.”

A5.6.2 Legal Contingencies Governing the Behaviour of the Commission

The evidence brings to the fore several provisions of the Fair Trading Act (FTA), 1973, as the main legislative instrument governing the behaviour of the Commission⁹¹³.

Table 27 – Sections of the Fair Trading Act 1973 Referred to in the Ice Cream Report (1979)

Relevant Sections Cited in the Ice Cream Report (1979) and main purpose of particular provision	Paragraph Numbers of the Ice Cream Report (1979)
Sections 47(1), 49(1), 50(1): Define the meaning of the term monopoly reference (47) and empower the Director to ask the Commission to investigate the existence of a monopoly within a particular market (50). The law provides the manner in which the terms of reference are to be specified (sections 48 and 40).	§1
Sections 6 to 8: Definition of the term “monopoly situation.” (Sections 7 and 8 had no bearing on the case as these relate, respectively, to the supply of services, exports, and, to situations where the monopoly situation is confined to a particular area of the UK.)	§1, §6, §390, §391, §429
Section 11: Definition of the term “complex monopoly situation.”	§1, §6, §390, §391, §429
Section 84: Provides guidelines for the term “public interest.”	The evidence does not refer to the particular section even though the “public interest” is of singular importance (see, for example, Chapter 10).
Section 55(2): Extension of the deadline for completing the investigation and submitting the relevant report.	§1
Section 4(4), and 10(1)(a) of the Third Schedule: The functions and organisation of the Monopolies and Mergers Commission. Section 5 defines the principal functions of the Commission but is not referred to within the text.	§2

Among its main legally specified functions, the Commission is duty bound to investigate and report upon issues relating to monopolies referred to it by the Director⁹¹⁴. On the basis of its investigations, the Commission draws conclusions and presents recommendations to the Director.

The Director draws a set of instructions, the Terms of Reference, in accordance with the provisions of the FTA that function to guide the Commission specifying a description of the goods or services that are under investigation, whether the investigation refers to the supply of these goods to the UK and/or export market, and, other relevant instructions. The terms of reference particular to the case at hand (termed at law as a “monopoly reference not limited to the facts”) required the Commission to investigate both whether there was a monopoly

⁹¹³ The Act is published in <http://www.legislation.gov.uk/ukpga/1973/41/>, and, for the purposes of this particular case regards only the original law as enacted.

⁹¹⁴ See, for example, paragraph 1 of the Ice Cream Report (1979) describing the full terms of reference by the Director to the Commission.

situation in the ice cream market and whether the evidence emerging from the investigation indicated practices operating against the public interest⁹¹⁵.

In conjunction with these instructions, the rules guiding the Commission in conducting its investigations are also specified at law: namely, section 6 (definition of monopoly situation) and section 11 (definition of a complex monopoly situation). The rules that had bearing on the case may be summarised as follows: A monopoly situation is considered to be in operation if the Commission finds that at least 25% of the value of the reference goods are supplied by either (a) a single individual or (b) one or more members of a single interconnected corporate body or (c) two or more members of a group which is not an interconnected corporate body. The definition applies regardless of whether the practices that distort, prevent, or restrict competition occur through collusion or with specific intent. A complex monopoly situation is considered to be in operation if the Commission finds that at least 25% of the value of the reference goods are either supplied by two or more members of a group not constituted by entities forming an interconnected corporate body.

The rewarding consequences are thus interpreted as constituting the reinforcement criteria of the Commission and include effective competition among existing firms, entry by new competitors, the promotion of cost efficiencies, and the introduction of new technologies and products, consumer choice in terms of quality and variety, increased employment, and more diversified distribution of industry. Practices that function to distort, restrict, and prevent competition and against the public interest remove or constrain the benefits of competition and may be interpreted as aversive stimulus events to the Commission (see Table 28 to Table 30).

⁹¹⁵ See the Terms of Reference reproduced in Section A5.6.1.

Table 28 – Overview of Exclusivity Practices deemed to be Restrictive, Monopolistic, and Against Public Interest

Practice	Manufacturers Adopting the Practice
<p>Outlet Exclusivity: Requiring customers to purchase all ice cream requirements for sale at a particular premises exclusively from a particular supplier (§233).</p>	<p>Glacier Foods: Standard agreements describing terms of supply to the majority of Glacier customers who operated a fixed or static outlet across the various retail segments. Standard agreements are prevalently used among individuals and smaller sized chains. Glacier imposed outlet exclusivity irrespective of whether the store was supplied with or owned a freezer cabinet (§182, §185).</p> <p>Glacier also maintained ad hoc long-term agreements with certain large retailers also precluding them from offering rival brands (§187).</p> <p>Larger customers (supermarket chains, multiple CTNs, freezer centres and certain large operators of leisure centres), however, had greater bargaining power and appeared reluctant to enter formal agreements with Glacier for exclusive supply. Some of these customers did have freezer exclusivity agreements with Glacier and, in the past, often sought a single source of supply. However, the buying patterns of the larger sized customer segment have changed to tend towards seeking more than a single source of supply. It was the practice among the largest retailers who did not own their own freezer cabinets to require manufacturers to supply cabinets and allow dual supply, i.e., having several cabinets each exclusively tied from several manufacturers within the same store location (§187).</p> <p>Mobile and static franchisees were contractually required to obtain their supply from Glacier (§234).</p> <p>Wall's: Wall's also maintained standard form contracts. Larger customers enjoyed ad hoc arrangements rather than standard form contracts (a total of 23 contracts were in existence for exclusive or semi-exclusive rights of supply irrespective of whether cabinets were provided, see §96). Both arrangements had similar effects as the ones used by Glacier (§89-96).</p> <p>However, Wall's implemented substantial changes to their contracts after the 1st January 1975 (before the investigation was announced) to relax the pre-1975 exclusive supply restriction allowing retailers the freedom to stock rival brands in retailer-owned cabinets (but not in the cabinets supplied by Wall's) (§89, §92).</p> <p>Until the 1st January 1975 all agreements with Wall's required exclusive supply. After 1st January 1975, Wall's also changed its policy so that parties to the old style contracts would be treated in the same manner as the parties of the new style contracts, i.e., waiving of exclusive supply provision (§90, §93), even though, strictly speaking, all the legal provisions of the old contracts (and, hence, the legal obligations) remained in force (§94).</p> <p>Mobile and static franchisees were contractually required to obtain their supply from Wall's (§234).</p>

Practice	Manufacturers Adopting the Practice
	<p>Pendletons: According to the Commission, Pendletons was the only other manufacturer imposing outlet exclusivity (§234).</p> <p>Hortons: Hortons maintained freezer exclusivity. However, since the customers of Hortons did not have enough space at retail to have additional freezers, the policy may be interpreted as one of outlet exclusivity.</p> <p>Dayville: Dayville had some franchise operations that required exclusive supply.</p>
<p>Freezer Exclusivity where the supplier undertakes to provide a retailer with a freezer cabinet and the retailer is precluded to storing any other products and/or rival brands (§235).</p>	<p>A total of 26 manufacturers supplied nearly 126,000 cabinets by 1978 (§235, Appendix 9 of the report).</p> <p>Both Glacier (§183) and Wall's (§89) had these arrangements (§235). Glacier and Wall's had an installed freezer cabinet base of 56,750 and 59,000 respectively by 1978. Moreover, Unilever and Glacier jointly owned a company (Total Investments) the primary purpose of which was to supply, install and service freezer cabinets to those outlets tied to either Wall's or Lyons Maid (see especially §212, §219-§221).</p> <p>The other manufacturers had a significantly lower number of installed freezers, however, the volumes of equipment purchased appeared to be reasonably high: 2 manufacturers held between 2,000 and 4000 cabinets each, 3 manufacturers held between 450 and 1,300 cabinets, 9 manufacturers held between 130 and 450 cabinets, and 10 had below 130 cabinets by 1978. Treats did not have any cabinets installed (§235, Appendix 9 of the report).</p>

Source – (Monopolies and Mergers Commission 1979)

Table 29 – Conclusions by the Commission with respect to the Monopoly and Complex Monopoly Situations

Monopoly Situation	Complex Monopoly Situation
<p>Two monopoly situations were uncovered (by virtue of Section 6(1)(b) of the Fair Trading Act (1973) in favour of (§390, §429):</p> <p>(a) T Wall and Sons (Ice Cream) Limited (a wholly-owned subsidiary of Unilever, §58), Wall's-Whippy Limited (a wholly-owned subsidiary of Unilever trading as a managing agent for T Wall and Sons and acting through independent franchise operations, §126-127), and the subsidiaries of Treat (Holdings) Limited (namely, Treat Products Ltd of Leeds, Hulleys Dairy Ltd of Sheffield, Taylors (Bilston) Ltd of Willenhall, §130). Treats Investments, a wholly owned subsidiary of Unilever, owned an 85% stake in in Treat (Holdings) with the balance held by the management of Treats (§130). Considered as "interconnected bodies corporate" (Monopolies and Mergers Commission 1979, p. 140, 390), the listed companies conservatively held about 41% market share in 1976 (Wall's held 37.7% while Treats held 3.5%, See Section A5.7.6).</p> <p>(b) Glacier Foods Limited (84.6% owned by JLC and 15.4% owned by Nestlé, §140) and Lyons Maid Limited including its subsidiaries (Mister Softee, JFN Mobile, Cornish Ice Co, Tastee-Freez, Lyons Maid Mobile, Bertorelli's Ice Cream, Midlands Counties Ice Cream, §140). Considered as interconnected bodies corporate, the listed companies conservatively held about 29.7% market share in 1976 (See Section A5.7.6).</p>	<p>By virtue of section 6(1)(c) and (2) and section 11 of the Fair Trading Act, the Commission found a complex monopoly situation (§391-392, §429). The complex monopoly situation existed in favour of (a) Unilever Limited, T Wall and Sons (Ice Cream) Limited, Wall's-Whippy Limited; and, (b) J Lyons and Company Limited, Lyons Ice Cream Holdings Limited, Glacier Foods Limited and subsidiaries, Lyons Maid Ltd and subsidiaries (§391-392). Both groups held shares in excess of 25%.</p> <p>The complex monopoly situation was not found to be operating in favour Treats.</p>
Nature of the Practices	
<p>The investigation identified three main market practices conducted by these organisations as restricting competition (§391-392, §429): (a) In <i>outlet or premises exclusivity</i> retailers were required to buy their ice cream to be sold in the particular outlet exclusively from a manufacturer irrespective of whether freezer cabinets were owned by or supplied to the retailer; (b) In <i>freezer exclusivity</i> retailers entered into an agreement to be provided with a freezer cabinet on condition that the cabinet was only used for carrying the brands of that particular manufacturer; and, (c) The practice by Glacier, Wall's, and others in setting a recommended retail price for ice cream. Both forms of exclusivity restrict competition by constraining and barring rival supplier access to the retailers concerned (§392). Recommended retail prices are followed by many of the various retailers and therefore restrict price competition along the retail channel (§28, §392).</p>	

Source – (Monopolies and Mergers Commission 1979)

Table 30 – Practices Deemed Against the Public Interest

Description of Finding which, according to the Commission aims at maintaining and exploiting the monopoly situation	Reason for which Practice is Deemed against Public Interest	Report Paragraph
(1) The complex monopoly situation operates against public interest when companies in favour of whom the monopoly situation: (a) Require outlet exclusivity (§429(iv)).	This practice operates against public interest because it: (a) Restricts competition in the supply of ice cream to retailers; (b) Restricts entry by new and existing suppliers to the retailer market; (c) Restricts the opportunities for smaller manufacturers searching for ways to increase their sales to retail segments; (d) Restricts consumer choice.	§405
(b) Require freezer exclusivity (§429(iv)).	This practice operates against public interest because it: (a) Deprives retailers of opportunities to sell a wider range of ice cream; (b) Deprives consumers of opportunities to buy a wider range of ice cream.	§408
(2) The condition imposed by Glacier to certain wholesalers that they do not sell rival brands of ice cream (§429(v)).	This practice operates against public interest because it: (a) Restricts competition in the supply of ice cream to retailers; (b) Restricts entry of suppliers to the ice cream trade; (c) Restricts consumer choice.	§410
(3) The condition imposed by Glacier to require that its customers take their entire (soft and hard) ice cream requirement from a single source (§429(vi)).	This practice operates against public interest because it: (a) Restricts competition in the supply of ice cream to retailers; (b) Restricts consumer choice.	§411
(4) The condition imposed by Glacier in its franchising agreements that franchisees must not (a) sell any ice cream other than those specified brands by Glacier and (b) be concerned in any other mobile van ice cream business in certain areas (§429(vii)).	This practice operates against public interest because it: (a) Restricts competition between suppliers of the mobile sector; (b) Restricts entry into the mobile sector; (c) Restricts consumer choice.	§415
(5) The condition imposed by both Glacier and Wall's that their respective supply contracts run for periods longer than one year.	This practice operates against public interest because it: (a) Restricts competition in the supply of ice cream to retailers; (b) Restricts entry of suppliers to the ice cream trade; (c) Restricts the opportunities for smaller manufacturers searching for ways to increase their sales to retail segments; (d) Restricts consumer choice.	§417
(6) Both Glacier and Wall's had arrangements	This practice operates against public interest when either companies offer contracts of	§419

Description of Finding which, according to the Commission aims at maintaining and exploiting the monopoly situation	Reason for which Practice is Deemed against Public Interest	Report Paragraph
where the payments of retrospective bonuses for which the period does not end at the same time as the annual contract of ice cream supply.	only a one year duration because it: (a) Restricts competition in the supply of ice cream to retailers; (b) Restricts entry of suppliers to the ice cream trade; (c) Restricts the opportunities for smaller manufacturers searching for ways to increase their sales to retail segments; d) Restricts consumer choice.	

Source – (Monopolies and Mergers Commission 1979)

The Director's instructions and legal provisions constitute antecedent informational regulatory stimuli in the behaviour setting of the Commission occasioning its behaviour. These conditions function to aid in the interpretation of behaviour of the various market participants operating within the market setting. In conducting its investigations, the Commission faced a relatively closed setting because its behaviour was defined and governed (prescribed and proscribed) by legal provisions of the FTA and by the specific instructions issued the Director within the Terms of Reference.

The evidence also presents a series of conclusions and recommendations that the Commission made to the Director. According to the FTA, those organisations whose behaviour would have been found to be (a) restricting, distorting and preventing competition and/or (b) against the public interest would eventually enter into a series of negotiations with the Regulator. The result of these negotiations is a set of legally binding undertakings by these organisations to alter their practices. Thus, regulatory intervention selectively eliminates or modifies the topographical details of practices deemed to be restrictive and against public interest (punishes and shapes), and selectively retains those behaviours that favour competition and the public interest.

A5.6.3 The Reference Goods

The Ice Cream Report (1979, p. 1, §1) states the terms of reference as follows "Ice cream and water ices' includes ice lollies, soft ice cream mix and ice cream to which fruit, fruit pulp, fruit puree, fruit juice, chocolate, nuts or any other substance is added, but does not include cakes or other articles of food of which ice cream forms a composite part."

A5.6.4 Problems of Quantifying Market Size and Estimating Market Shares of the National Manufacturers

According to the evidence the purchase of ice cream generally satisfied the following recurring basic criteria among consumers (the contingencies specifying the conditions of consumer approach to ice cream and to the various brands available): the consumption of a pleasure product associated with summer (utilitarian reinforcement) with a relative degree of variety in product composition (e.g., different flavours and toppings; utilitarian reinforcement) at some location of convenience (e.g., the neighbourhood store, a mobile van, a restaurant or a kiosk at a beach in summer; informational reinforcement)⁹¹⁶.

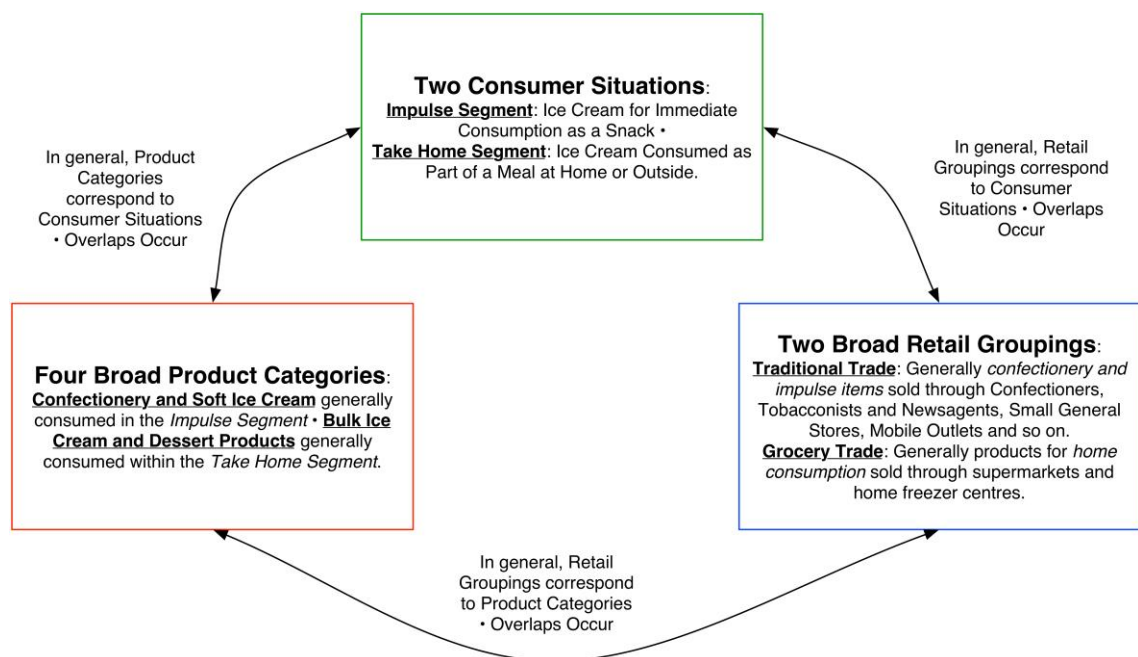
In building the market for the mass consumption of ice cream, the national manufacturers were therefore concerned with: (a) understanding the more common situations wherein consumers would buy and eat ice cream, (b) developing types of products to signal appropriate reinforcement contingent upon ice cream purchase and consumption within particular situations, and, (c) identifying and attracting types of retailers who captured some volume of consumer traffic and whose characteristic elements channelled consumer traffic to occasion a consumer situation for approaching ice cream with some

⁹¹⁶ Refer to the Ice Cream Report (Monopolies and Mergers Commission 1979, Chapter 1). The reinforcement criteria of consumers are discussed in Sections A5.3 and A5.4.

associated probability of terminating in the exchange of the manufacturer's brands. Figure 204 presents an inferred characterisation to emphasise the difference between the original volume of consumer traffic that would have approached the outlet, the filtering of such traffic among the competing patterns of reinforcement on offer via perfect and imperfect substitutes and unrelated products, and, the reduced volume of behaviour that terminates in exchange of a particular manufacturer's brands.

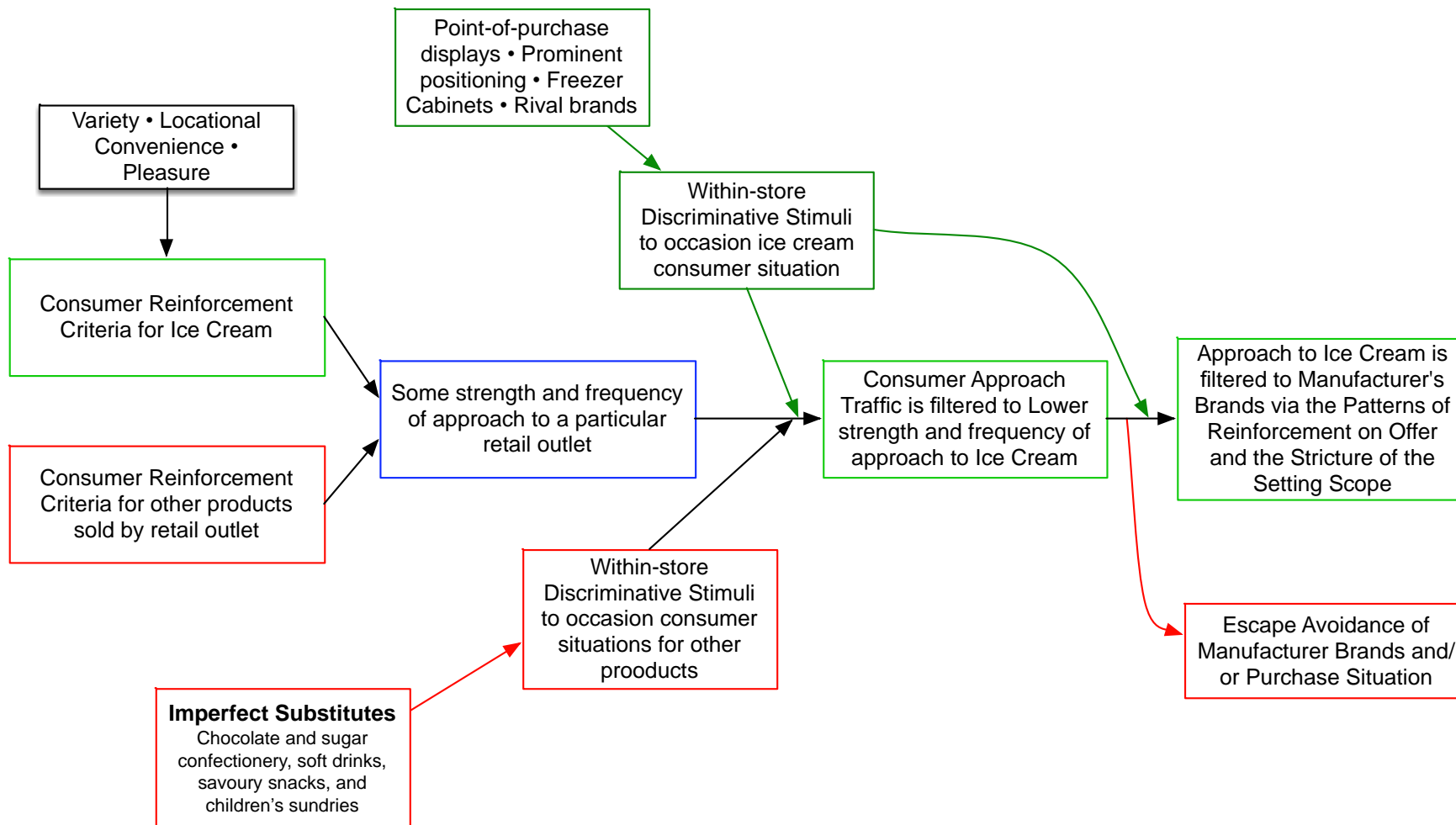
Given these concerns, three different and non-standard bases for market segmentation arose. Manufacturers categorised according to (a) the type of situation wherein consumers eat ice cream, (b) the type of product generally purchased within one of the situation types, and, (c) the type of retail outlet wherein ice cream was purchased (Figure 203).

Figure 203 – Three Characteristic Features of the Market



Market segmentation did not reflect “**homogenous market sectors**” (Monopolies and Mergers Commission 1979, p. 6, emphasis added). In addition, the retailer outlets traditionally involved in selling ice cream since the emergence of mass consumption during the 1920s comprised a relatively large heterogeneous group of small independent outlets whose buying patterns consisted of small orders and for whom ice cream contributed only a small percentage to total turnover and profit. On the other hand, the sector that emerged between the mid- and late- 1960s was comprised of a relatively more homogenous group of larger grocery outlets or chains. In relative terms, these outlets were higher volume buyers of ice cream.

Figure 204 – An Inferred Representation of In-Store Traffic



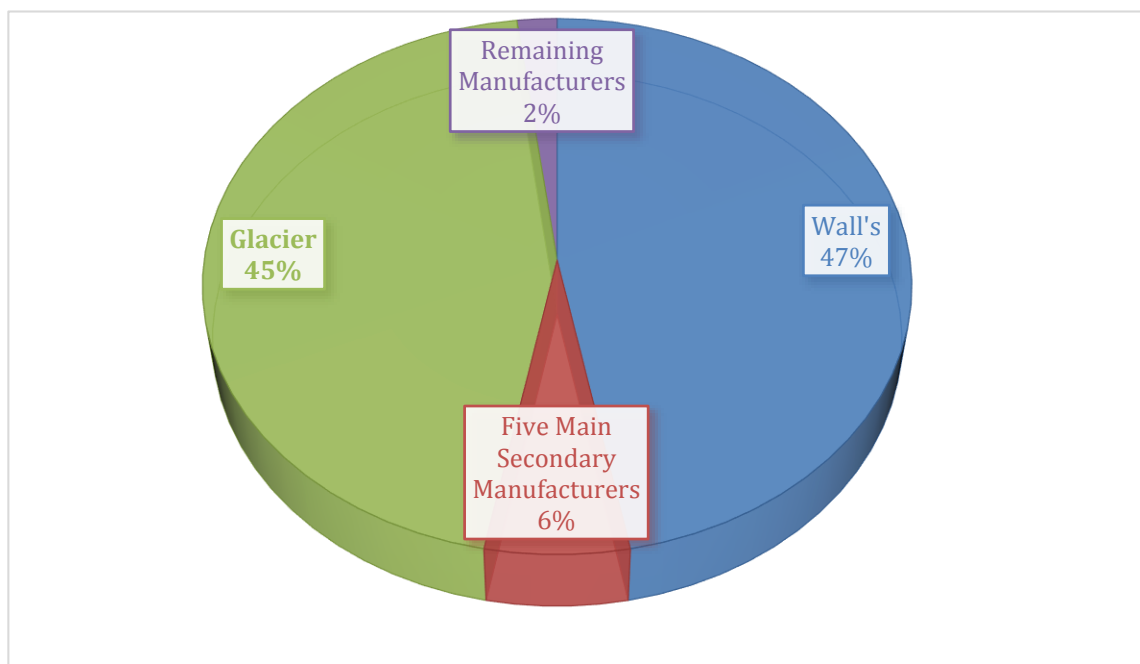
The strength of consumer approach from the moment consumers enter the store to the purchase of the manufacturer's ice cream brand decreases as consumer behaviour is allocated to alternative reinforcement patterns

These features emerged gradually over the history of the market. For example, in 1939 Wall's carried a very narrow range comprised of 5 confectionery products in what appears to have been a single line⁹¹⁷. By 1977 the product range had broadened to include 41 confectionery product lines out of a total of 140⁹¹⁸.

Two Main Types of Consumer Situations: Ice cream purchase and consumption was broadly categorised according to two main types of consumer situations: the *impulse segment* or that consumer situation where ice cream was purchased on impulse for immediate consumption as a snack (also called in hand); and, the *take home segment* included consumer situations where ice cream was consumed as part of a meal either at home or outside⁹¹⁹. The products in the latter category, therefore, were placed for sale to households or to retailers and caterers.

The Ice Cream Report (1979) does not indicate the size of each segment and the respective shares held by the national manufacturers thereof. The only data available is the respective shares of Wall's (46.8%) and Glacier (45%) of the total installed base of freezer cabinets by 1978 (Figure 147).

Figure 205 – Freezer Cabinets Owned by the National and Secondary Manufacturers (1976)



Source: Section A5.7.5

According to Ice Cream Report (1994, p. 18, §3.19), however, Wall's claimed that it had retrospectively calculated its share of the impulse market in 1976 to stand at around 46% of sales by value. The estimated impulse market share of Glacier was 45%. Thirty-four secondary manufacturers⁹²⁰ held less than 10% share of the market among them. The estimate was calculated by Wall's on the

⁹¹⁷ Refer to Ice Cream Report (1979, §64).

⁹¹⁸ Refer to Ice Cream Report (1979, §68).

⁹¹⁹ Refer to the Ice Cream Report (1979, §9).

⁹²⁰ A list of these manufacturers was provided in Appendix 9 of the Ice Cream Report (1979, pp. 177-178).

basis of the number of freezer cabinets owned by itself and by Glacier. The concurrence between the two reports suggests that almost the entire population of freezer cabinets was installed in retail outlets that catered for the impulse market.

Whereas at the time of Wall's entry into the market in the 1920s, the impulse segments seems to have been already in existence, the take-home segment emerged most prominently during the mid-1960s.

Four Broad Product categories: By 1976, the range and variety of ice cream products manufactured and on sale was extensive. Although no standard nomenclature existed, the Commission identified four main product categories that generally (but not completely) corresponded to the two consumer situations just described (Table 31)⁹²¹.

The Commission found a significant degree of overlap in these categories. Bulk ice cream, for example, was purchased by retailers to meet impulse demand or by catering establishments and households for consumption as part of a meal. Households may have also purchased bulk ice cream for consumption at home on impulse as a snack or for dessert. Confectionery items were sold as either as individually wrapped servings or in multipacks of 6 or more individual servings. Both single and multipacks could have been purchased and consumed either as impulse or as dessert items. The Commission also noted that, to an extent, the distinction between bulk ice cream and dessert products was "artificial" because bulk products were generally although not exclusively purchased for consumption after a meal and, thus, the demand for bulk items had been at the expense of dessert products⁹²². That said, however, the consistent growth of sales in the bulk ice cream category was a development of the 1970s and the Commission argued that the category would have not been identified prominently before that period⁹²³.

The overlap limited the study creating difficulties in representing the size and contribution of each of the four product groups to the overall market and the share each manufacturer held with respect to each category. That said, the Commission obtained two relatively imprecise (and, therefore, only broadly indicative) sets of data pertaining to distribution of consumer expenditure according to product categories⁹²⁴: the first was derived from the Business Monitor⁹²⁵, a report published by the BSO covering the 1973 to 1977 period. Comparable figures for earlier years were not available⁹²⁶.

⁹²¹ Refer to the Ice Cream Report (1979, §9-13).

⁹²² Refer to the Ice Cream Report (1979, §12).

⁹²³ Refer to the Ice Cream Report (1979, §15).

⁹²⁴ Refer to the Ice Cream Report (1979, §15) and Appendix 4.

⁹²⁵ The BSO is now defunct and its operations were part of what is now the Office of National Statistics (<http://www.ons.gov.uk/>). The dataset containing the information used by the Commission was published by the BSO in a report called the Business Monitor (PQ215). The report provided data relevant to the manufacture of all Milk and Milk Products in the UK. See also the Ice Cream Report (1979, Appendix 4) and paragraph 47.

⁹²⁶ Refer to the Ice Cream Report (1979, §15).

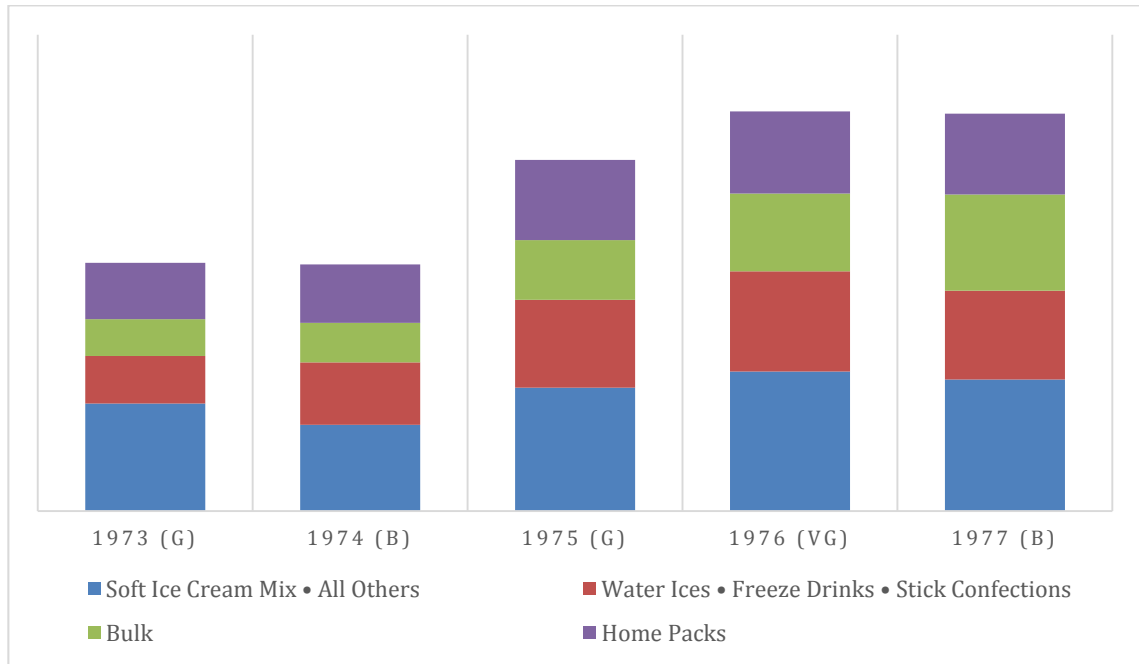
Table 31 – Consumer Situations and Corresponding Types of Ice Cream Purchased and Consumed

Consumer Situation	Product Category Consumed
<p>Impulse Market: Ice cream purchased and consumed on Impulse or as Snack (also known as 'in-hand').</p>	<p>Confectionery (Hard Ice Cream) “Includes ice lollies, other stick confections and novelty products (e.g., ice cream and water ices combined in one product), ice cream bars, choc bars, cups, tubs, sundaes, special ranges for places of entertainment, ice cream in cones and wafers dispensed from bulk containers, 'dairy ice cream' or 'cream ice' (containing milk fat), small wrapped blocks or brickettes, factory-made cones and similar types of products. They are normally purchased individually” (Monopolies and Mergers Commission 1979, p. 5, §11).</p> <p>The term 'hard' is used to denote ice cream that is manufactured, distributed, and retailed in frozen form (§11).</p> <p>A recent development in the confectionery segment relates to the retail of multipacks of 6, 12, or 24 individual servings. Typically, individually packaged single servings were considered to fall within the impulse market, whereas bulk items were considered to fall within the take-home market (§20).</p> <p>Soft Ice cream 'Soft' ice cream is prepared from an unfrozen prepared mix for immediate consumption by a machine which is installed at the point of sale (§11).</p>
<p>Take-home Market: Ice cream purchased and consumed as Dessert as part of a meal at home or at a catering establishment.</p>	<p>Dessert (Hard) “Include what are usually known as family sweets, packs or bricks, popular sweets, cutting bricks, sliceable litres, as well as individual desserts, individual catering portions, premium and specialty items of varying degrees of complexity and sophistication. Their volume is usually one litre or below and they are prepared for consumption in the home and as special catering lines” (Monopolies and Mergers Commission 1979, p. 5, §11).</p> <p>Bulk (Hard) These “products are normally sold in two or four litre packs to the public usually in a limited range of basic types and flavours (e.g. standard vanilla, strawberry, chocolate) for storage in deep freezers in the home or in larger (e.g. 10 litre) containers for dispensing by the retailer or caterer. Wall's and Glacier and some of the larger secondary manufacturers have developed their own ranges of specialised flavours and composition for sale in bulk to retail establishments for dispensing to consumers” (Monopolies and Mergers Commission 1979, p. 5, §11).</p>

Source: (Monopolies and Mergers Commission 1979)

Figure 206 graphs the BSO estimates found in Section A5.7.2A.

Figure 206 – Distribution of Consumer Expenditure Among Product Categories by Sales Value (1972 – 1977)



Source: Section A5.7.2A

The Commission found that the figures provided in the Business Monitor understated the extent of the sales of bulk ice creams because the BSO had gathered data via a quarterly inquiry covering only manufacturing establishments employing 25 persons and over thereby omitting the sales of several small manufacturers. However, some of these smaller manufacturers appeared to have been very active in the bulk products segment⁹²⁷. The BSO supplemented this data with additional estimates: it provided an estimate to allow for manufacturers within the sample that did not respond to its inquiry. However, the nature of the estimate was not explained in the Business Monitor⁹²⁸. In addition, the BSO calculated an aggregate sales figure for all manufacturers involved in the production of milk and milk products. The BSO claimed that the figure could be used to derive a grossing up factor to obtain a good indication of the sales attributable to ice cream manufacturers employing less than 25 persons⁹²⁹. The Commission did not appear to put much weighting on the latter estimate⁹³⁰. Both Glacier and Wall's raised several objections to the methods the BSO used in generating its estimates⁹³¹. Wall's, in particular, pointed out that despite the efforts made by the BSO to account for small-scale

⁹²⁷ Refer to the Ice Cream Report (1979, §15, §47 and Appendix 4).

⁹²⁸ Refer to the Ice Cream Report (1979, §15 and Appendix 4).

⁹²⁹ Refer to the Ice Cream Report (1979, §7 in Appendix 4).

⁹³⁰ The Commission also identified several other problems in relation to the dataset obtained from the BSO: (a) there were no adjustments for foreign trade (a point also raised by Glacier); (b) the sales figures for 1972 may have been under-recorded and may have also understated the contribution of the manufacturers other than Glacier, Wall's and Treats; (c) the figures for 1973 included varying amounts of estimation and may have also overstated the contribution of the manufacturers other than Glacier, Wall's and Treats; and (d) the figures for 1977 excluded sales of soft mix and, therefore, comparisons with earlier years was not possible. The Commission provided for this by including its own estimate for the product category (Refer to the Ice Cream Report (1979, §14 (fn 1 and 2), §8 and 9 in Appendix 4)).

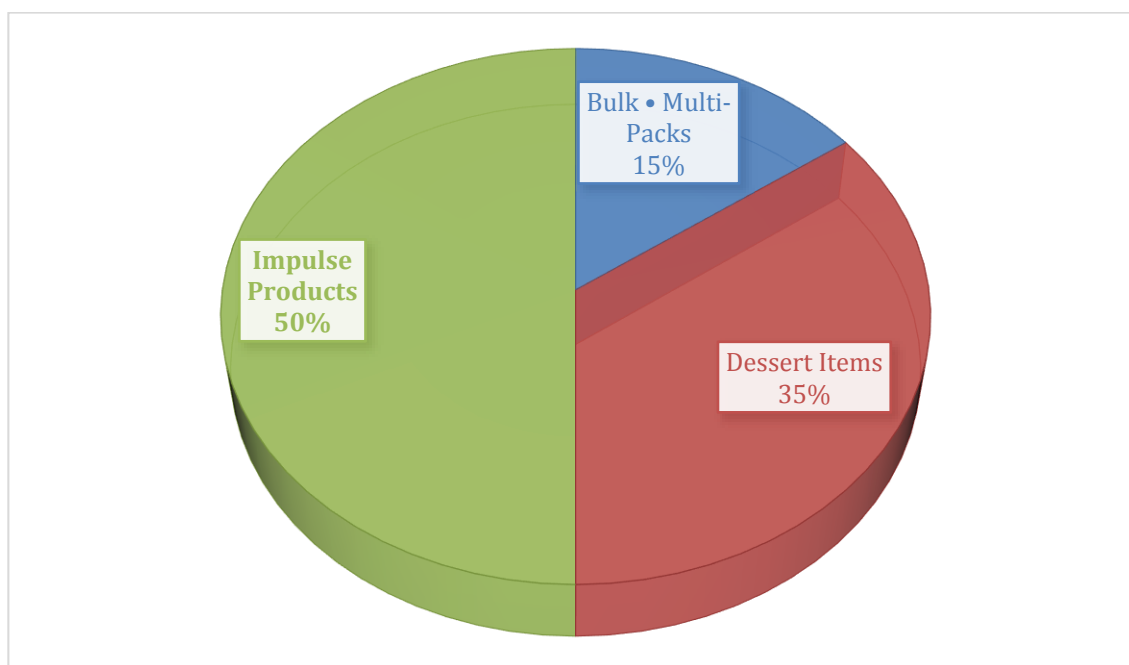
⁹³¹ These objections are discussed in the Ice Cream Report (1979) Appendix 4 paragraphs 9 and 10.

manufacturers through the grossing up factor, it may have inadvertently excluded ice cream manufacturers who although employing less than 25 persons were still substantial participants within market. The BSO conceded that such omissions were possible even though there was no evidence to suggest that this had actually happened⁹³².

The second source of data related to estimates made by Wall's used only for monitoring performance⁹³³ on market segment size (Figure 207). The firm claimed that the classification **did not represent "homogenous market sectors"** (Monopolies and Mergers Commission 1979, p. 6, emphasis added).

Glacier, on the other hand, did not provide any market estimates according the product categories mentioned arguing that a more realistic approach relied on examining sales per outlet category⁹³⁴.

Figure 207 – Estimates of Market Segment Shares (Consumer Sales) Provided by Wall's (1976)



Source: Ice Cream Report (1979, p. 6, §15) • Section A5.7.2D

Neither the national manufacturers nor the Commission provided estimates for the possible size of the market for each of the two consumer situations.

However, given the various descriptions and BSO data provided in the Ice Cream Report it was possible to construct a very broad indication of the possible sizes of the two consumer situations (Figure 208)⁹³⁵.

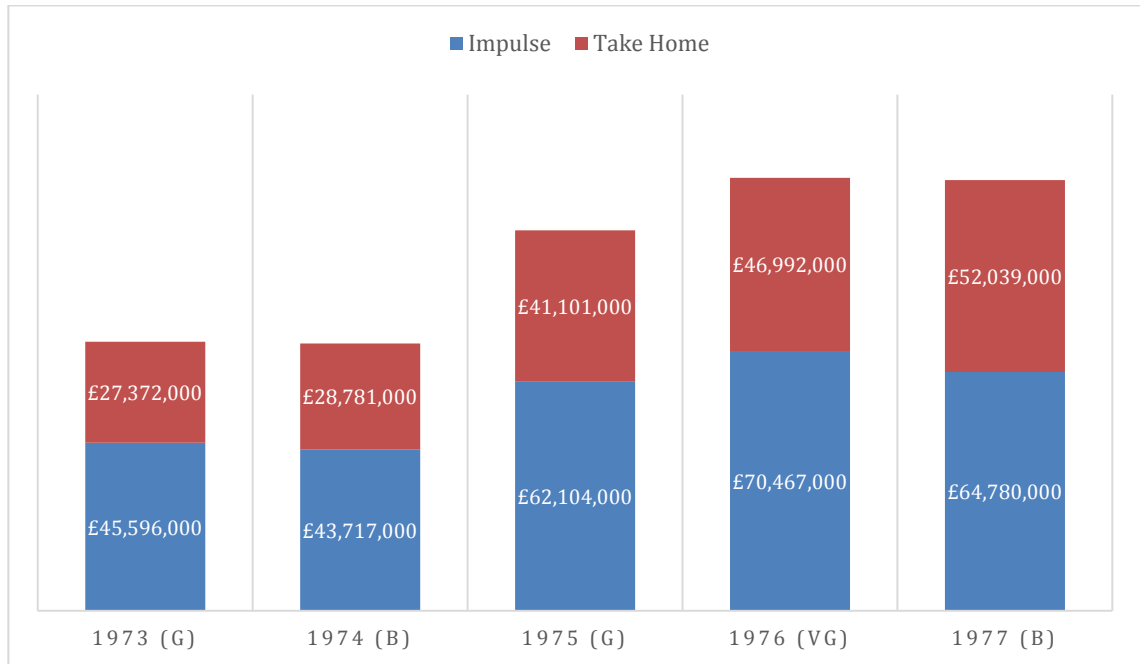
⁹³² Refer to the Ice Cream Report (1979, §10 in Appendix 4).

⁹³³ Refer to the Ice Cream Report (1979, §15).

⁹³⁴ Refer to the Ice Cream Report (1979, §159).

⁹³⁵ Refer to Section A5.7.2C.

Figure 208 – Distribution of Consumer Expenditure Among Product Categories by Consumer Situation (1972 – 1977) Based on the Data of the Business Monitor

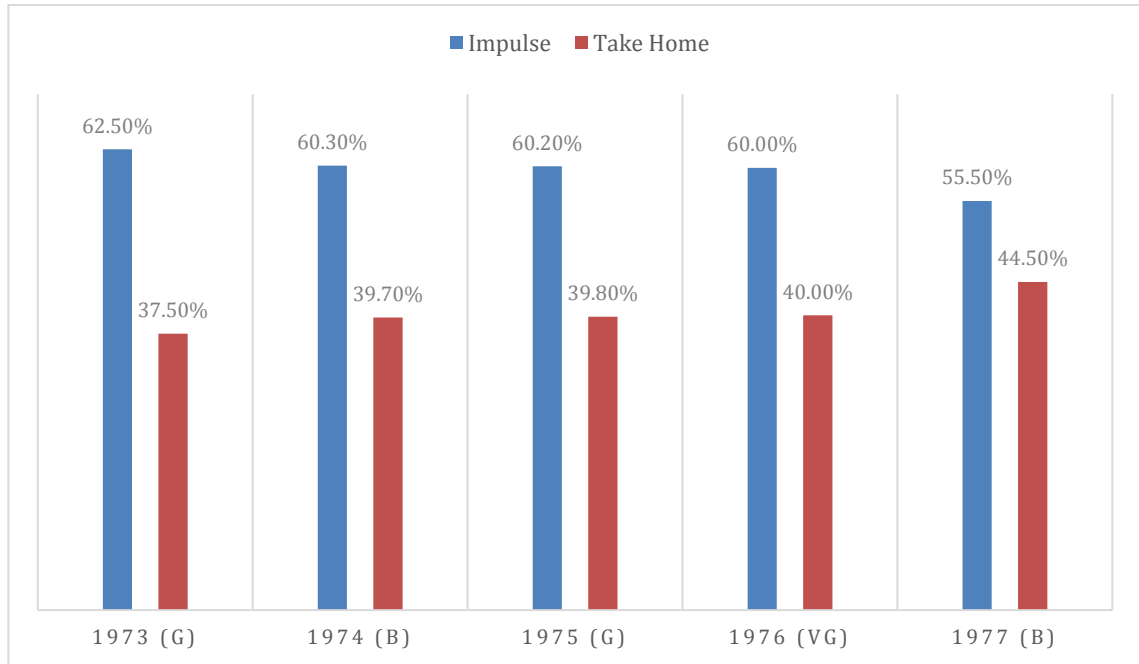


Source: Section A5.7.2C

Assuming a general correspondence of the four product categories to the two consumer situations, the data suggests that the Impulse segment had declined from 62.5% in 1973 to 55.5% in 1977 approximating the estimate provided by Wall's (Figure 207). The Take Home segment increased from 37.5% to 44.5% in the same period (Figure 209). The qualitative evidence provided in the report also noted a shrinking of the impulse segment in favour of the take home market⁹³⁶.

⁹³⁶ Refer to Chapter 1 of the Ice Cream Report (1979).

Figure 209 – Comparison of the Segment Shares of Total Consumer Expenditure (1973 to 1977)



Source: Figure 208

Two Broad Retail Groupings: By 1976, ice cream became available within an extensive range of retail outlets (Table 32)⁹³⁷.

Table 32 – Types of Ice Cream Products Generally Sold within Particular Retail Outlet (1976)

Type of Retail Outlet	Ice Cream Products Generally Sold within Particular Retail Outlet
Confectionery-Tobacconist-Newsagents (CTNs) and Confectionery Newsagents, neighbourhood or corner chops, general stores, smaller independent grocers • Historically, CTNs and other small shops were by far the more numerous single retail grouping and more prominent in the sale of ice cream.	Largely <i>Confectionery</i> and <i>Dessert</i> (§17) • These outlets were an important means for retailing dessert and bulk items especially when consumers had limited refrigeration space bulk packaging (§17).
Places of entertainment or leisure such as cinemas, bingo halls, sports, and other outdoor events of all kinds.	<i>Confectionery</i> (§17).
Seasonal sites such as kiosks, parks, beaches, promenades, and other holiday sites. Kiosks are especially prominent during warmer weather.	<i>Confectionery</i> (§17).
Off-licences and petrol stations.	<i>Confectionery</i> (§17).
Mobile Vans and Mobile Franchises both concerned only on the sale of ice cream.	<i>Impulse Items</i> (§17).
Small catering outlets and a limited number of ice cream parlours.	<i>Impulse Items</i> (§17) • Some of the ice cream parlours were franchises: Baskin Robbins was a wholly owned subsidiary of JLC operating parlours in the US and Europe selling ice cream under its own label (see the Ice Cream Report (1979, §208-211)) • Dayville Limited, a subsidiary of City Hotels Group, operated an ice cream parlour franchise business retailing American style ice cream through approximately

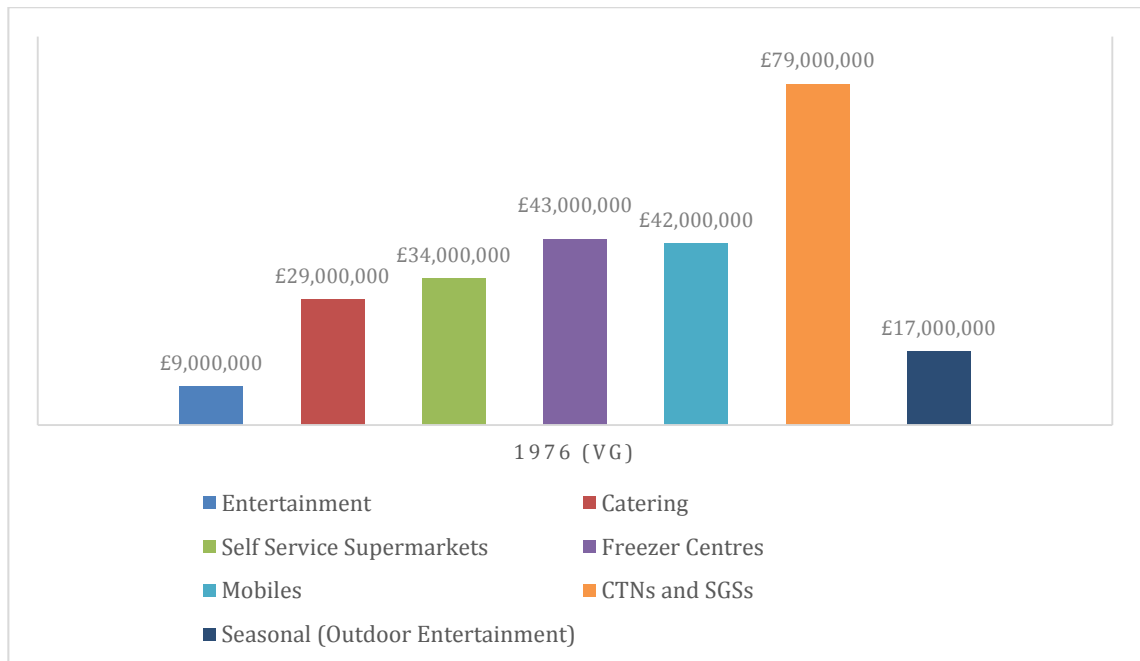
⁹³⁷ Refer to the Ice Cream Report (1979, §9, §16-21, §29-40).

Type of Retail Outlet	Ice Cream Products Generally Sold within Particular Retail Outlet
	80 outlets (see the Ice Cream Report (1979, §232)).
Larger grocery outlets including national and regional multiple chains and home freezer centres.	<i>Dessert products and bulk packs</i> (§18) • These outlets, particularly the home freezer centres, were an important means for retailing volumes of bulk ice creams to consumers • The sub-category also developed a significant business in the sale of <i>confectionery</i> and the Commission noted that there were the “beginnings of the development of ‘impulse’ sales of ice cream confectionery items at stores of this type” (Monopolies and Mergers Commission 1979, p. 7, §18).
Co-operative shops, voluntary groups, and similar organizations.	<i>Dessert products</i> (§18).
Catering outlets including restaurants, cafes, snack bars, hotels, catering wholesalers, hospitals, schools and other institutions, pubs, canteens and so on.	The main product demanded by catering establishments is <i>bulk</i> ice cream although there is strong demand for a range of individual portions (§18) • Snack bars also cater for some of the demand for impulse products (§18).

Source: (Monopolies and Mergers Commission 1979)

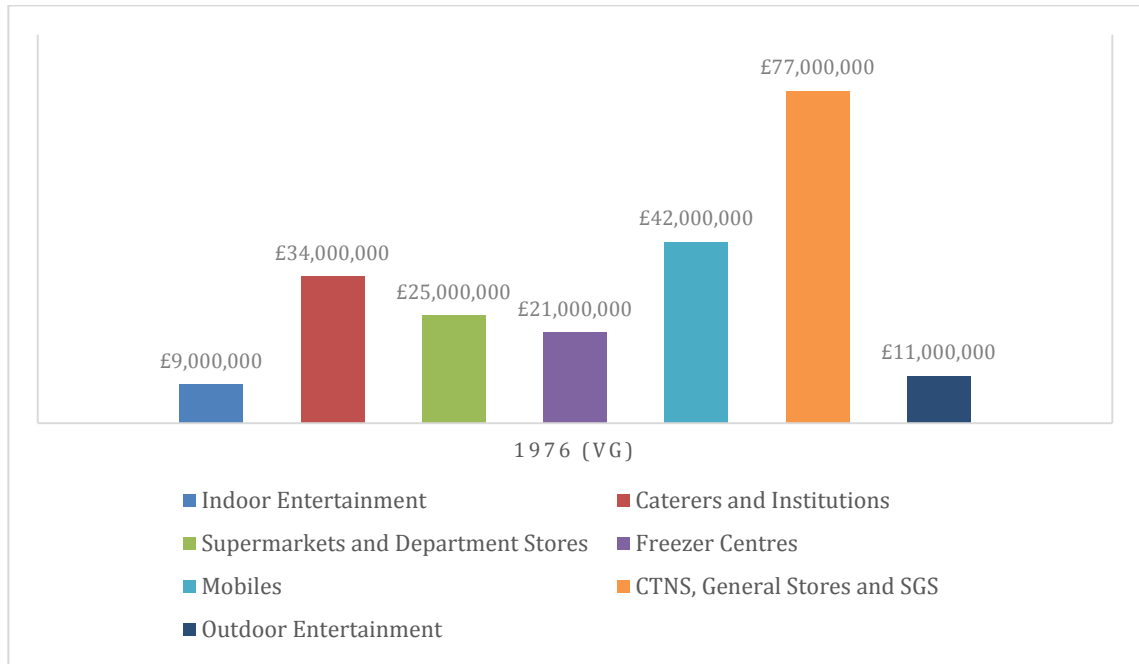
Figure 210 and Figure 211 provide estimates of the distribution of consumer expenditure throughout the various types of outlets wherein ice cream was available for purchase and consumption by Wall’s and Glacier respectively. Whereas Wall’s valued the market at £253m, Glacier estimated the market size at consumer prices to hover around £219m.

Figure 210 – Estimates Provided by Wall’s on Consumer Expenditure (Value at Consumer Prices) Distribution Among Outlet Types (1976)



Source: Section A5.7.3A

Figure 211 – Estimates Provided by Glacier on Consumer Expenditure (Value at Consumer Prices) Distribution Among Outlet Types (1976)



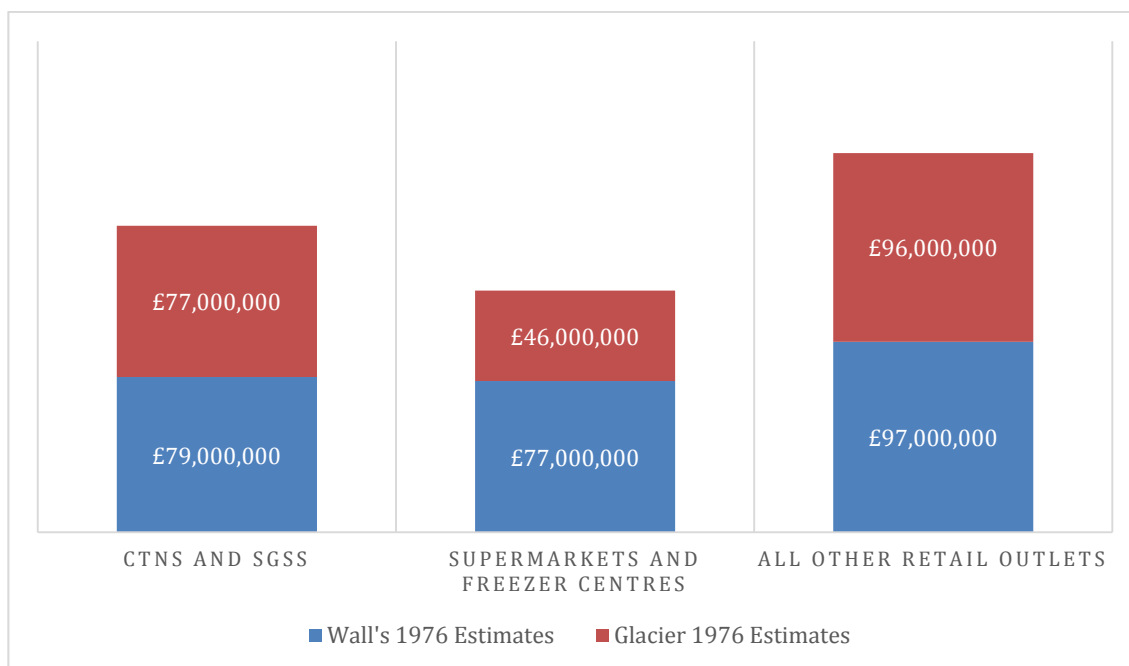
Source: Section A5.7.3A

The Commission noted that its efforts were hindered by the fact that no precise figures for all manufacturers existed for total sales at consumer prices. Therefore, it relied on the estimates provided by Wall's and Glacier and which, in turn, were derived from external market research commissioned by these organizations, on their internal marketing intelligence, and on other sources as already detailed. Clearly, the classification system utilised by both manufacturers was somewhat different. Thus, precise comparisons could not be made effectively. More importantly, the methods employed by the two national manufacturers to derive these estimates were different⁹³⁸. The Commission noted that whereas both organizations arrived at similar valuations of the segment comprised CTNs and SGSs, the valuations of the Supermarkets and Home Freezer Centres segment differed significantly. Wall's estimated this segment to be £77m whereas Glacier's estimations stood at £46m (Figure 212)⁹³⁹. Glacier argued that the estimate provided by Wall's with respect to sales estimates through supermarkets and home freezers centres was too high. In parallel, Wall's claimed that Glacier "seriously underestimated" the growth of the market and the sales of the small scale manufacturers (1979, pp. 168-169, Appendix 4 §12).

⁹³⁸ The Commission failed to provide an evaluation of the sources and quality of data used by both organizations in deriving estimates. Appendix 4 paragraph 12 of the Ice Cream Report (1979) explains the different methods used by Glacier and Wall's in deriving their estimates for market size.

⁹³⁹ Refer to the Ice Cream Report (1979, §21).

Figure 212 – Comparison of Market Valuation by Retail Segments (1976)



Source: Section A5.7.3B

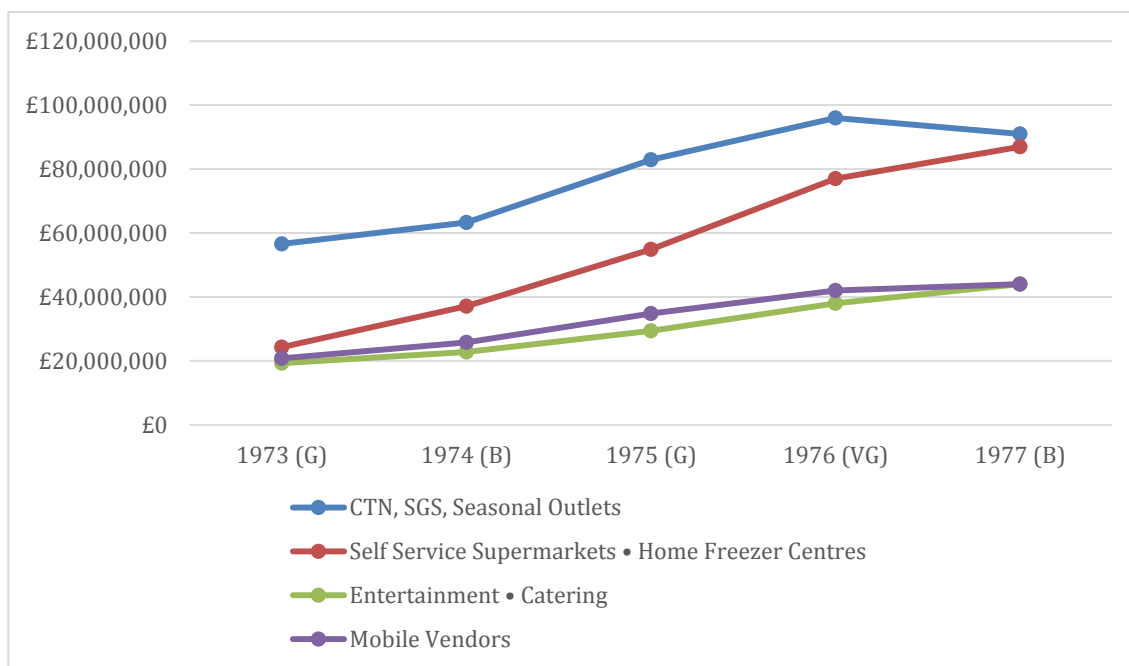
In this last respect it should be noted that Glacier was historically under-represented in the supermarkets and freezer centres sector while Wall's retained a continual strong presence. Glacier admitted it underestimated the growth potential for the demand of ice cream products typically sold to the segment. In addition, the "very low gross margins" generated by trading in the sector occasioned reluctance on the part of Glacier to develop the segment of the market more actively (Monopolies and Mergers Commission 1979, p. 59, §161). Such a reluctance and lack of activity within the sector suggests that Glacier did not possess sufficient knowledge of the sector to value it in a reliable manner. As such, Glacier could have been at an informational disadvantage in relation to Wall's.

Wall's provided a relatively detailed analysis of consumer expenditure (at consumer prices rather than at net sales value) for the period 1973 to 1977⁹⁴⁰.

Figure 213 indicates the growth in the overall ice cream market during the period and demonstrates the changing distribution of consumer expenditure by type of outlet. The figure provided further evidence to support the conclusions of the Commission with respect to major shifts occurring within the market during the 1970s: changes in habitual consumer behaviour patterns in relation to ice cream away from the more traditional outlets (CTNs and SGSSs) towards favouring self-service stores, supermarkets, and home freezer centres.

⁹⁴⁰ Refer to Section A5.7.3.

Figure 213 – Changing Distribution of Consumer Expenditure by Type of Outlet (1973 – 1977)



Source: Section A5.7.3C

The Commission, however, argued that these were only broad indications and probably did not show the extent to which the trends were actually taking place within the market. In addition, there were no grounds upon which to verify the estimates made by Wall's and Glacier did not provide a similar dataset⁹⁴¹. It also appears that these figures were based on a sample to calculate indicative percentage distributions of consumer expenditure among the various outlet categories. Glacier claimed that such a practice runs the risk of producing a significant degree of statistical errors. In addition, Glacier objected to the information provided by Wall's because of the difficulties encountered in classifying outlets and aggregating data⁹⁴². The Commission did claim this evidence as verifying the continued growth in the demand for confectionery ice cream sold in multipacks, and for bulk and dessert ice cream products sold in the larger grocery outlets over the following years. In parallel and on the basis of this evidence, the Commission argued that sales through the small shops would either remain static or continue in their decline⁹⁴³.

In further attempts to make sense of the complexity of the environmental conditions governing the behaviour of the national manufacturers, the Commission utilised a distinction made by Wall's for the only purpose of analysing retail trends⁹⁴⁴.

Wall's conveniently grouped the varied range of outlets in two main segments: the Traditional Trade composed of individual and multiple (chains) CTNs, confectioners and tobacconists (CTs), seasonal and entertainment outlets,

⁹⁴¹ Glacier seems to have held some kind of similar information: paragraph 162 reports estimated made by Glacier with respect to its market share in each of the outlet types it served. Section A5.7.6 reproduces these estimates. It is not clear whether Glacier withheld this information or whether the Commission decided not to reproduce it.

⁹⁴² Refer to the Ice Cream Report (1979, §37, §159, 162).

⁹⁴³ Refer to the Ice Cream Report (1979, §37).

⁹⁴⁴ Refer to the Ice Cream Report (1979, §19).

mobile outlets, and SGSs. The second segment was the Grocery Trade mainly composed of supermarkets and freezer centres. The classification, however, excluded catering establishments, which, presumably, Wall's analysed on its own right⁹⁴⁵.

Table 33 – Broad Classification of Retail Outlets by Wall's (1976)

Retail Outlet Type	Product Sold	Retail Grouping
Individual and Multiple (chains) CTNs, CTs, Seasonal and Entertainment Outlets, Mobile Outlets, and SGSs.	Principal business: Confectionery Products for Immediate Consumption.	Generally, Traditional Trade and some Grocery Trade when Dessert Products are Sold for Home Consumption.
Supermarkets and Home Freezer Centres.	Principal Business: Products for Home Consumption.	Generally, the Grocery Trade.

Source: (Monopolies and Mergers Commission 1979, §19)

Glacier, on the other hand, had a different classification system: the Confectionery Segment included CTNs, general stores, smaller grocers, off licences, garages, and cash and carry wholesalers⁹⁴⁶. This segment accounted largely for impulse items for immediate consumption. Catering, Leisure, Supermarkets, Freezer Centres, Mobile, and so on were considered as separate segments⁹⁴⁷. In relation to any data pertaining to the outlet types, Glacier claimed "it had greater confidence in its estimate of sales at consumer prices than its breakdown of the outlet categories" (Monopolies and Mergers Commission 1979, p. 59, §162 fn.2).

The Commission found the broad, non-standardised, and simplifying categorisation made by Wall's very useful⁹⁴⁸. For example, the Commission identified and contrasted major differences in the environmental conditions faced by the national manufacturers when transacting with the different retailers comprising the traditional and grocery segments.

The product categories identified earlier do not correspond completely with the two retail groupings. So, for example, a wrapped single from a multipack purchased at a supermarket or an item of confectionery purchased from a mobile van may fulfil an impulse purchase⁹⁴⁹. However, the sale of impulse items (especially confectionery products) was generally associated with the Traditional Trade and the sale of take home products was generally associated with the take-home trade⁹⁵⁰. The Commission did not provide an estimate of the two retail groupings probably because of the possible lack of correspondence between product categories and retail groupings. Conclusions and recommendations based on such incomplete correspondence could have resulted in generating inappropriate recommendations.

⁹⁴⁵ Refer to the Ice Cream Report (1979, §19).

⁹⁴⁶ The Ice Cream Report does not specify the function of cash and carry stores. According to the Frozen Foodstuffs Report (1976, §60) cash and carry organizations were wholesalers supplied directly by manufacturers and other wholesalers who did not undertake physical distribution. Rather, they sold to consumers directly from their premises. It appears that the rising costs of distributing small orders had contributed to the increase in numbers of cash and carry firms.

⁹⁴⁷ Refer to the Ice Cream Report (1979, §19, §160).

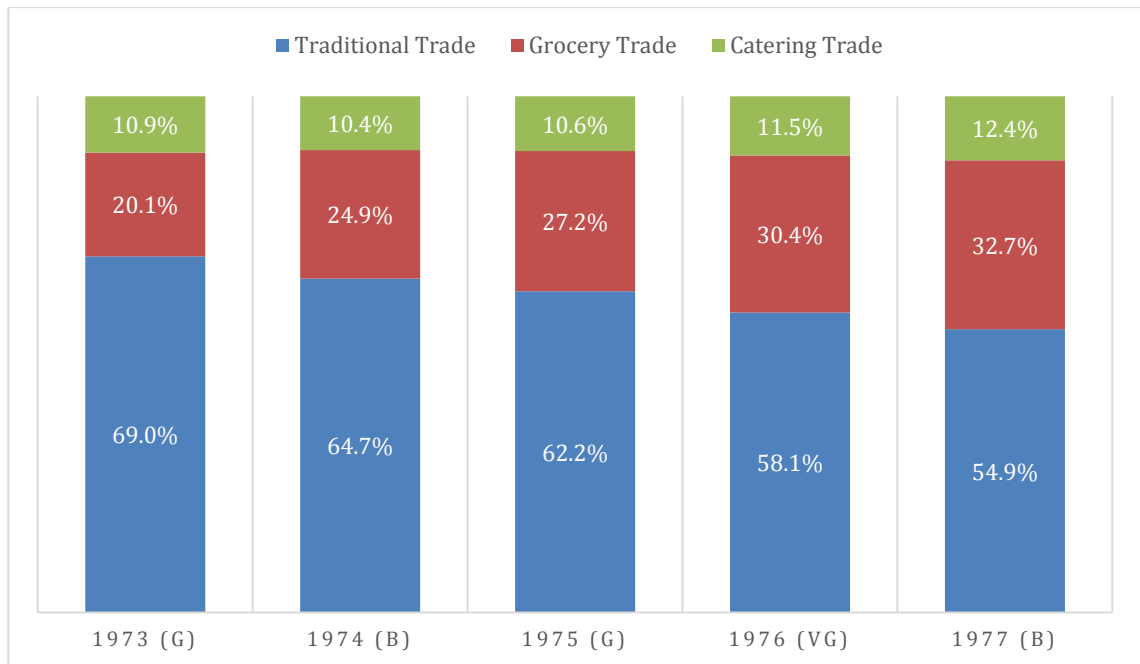
⁹⁴⁸ Refer to the Ice Cream Report (1979, §19).

⁹⁴⁹ Refer to the Ice Cream Report (1979, §20, §354).

⁹⁵⁰ Refer to the Ice Cream Report (1979, §20 and §35).

However, it was possible to construct a rough indication of the two broad segments based on the qualitative and quantitative evidence found in the report (see Section A5.7.3E). Figure 214 provides an indication of the growing importance of the Grocery vis-à-vis the Traditional Trade between 1973 and 1977.

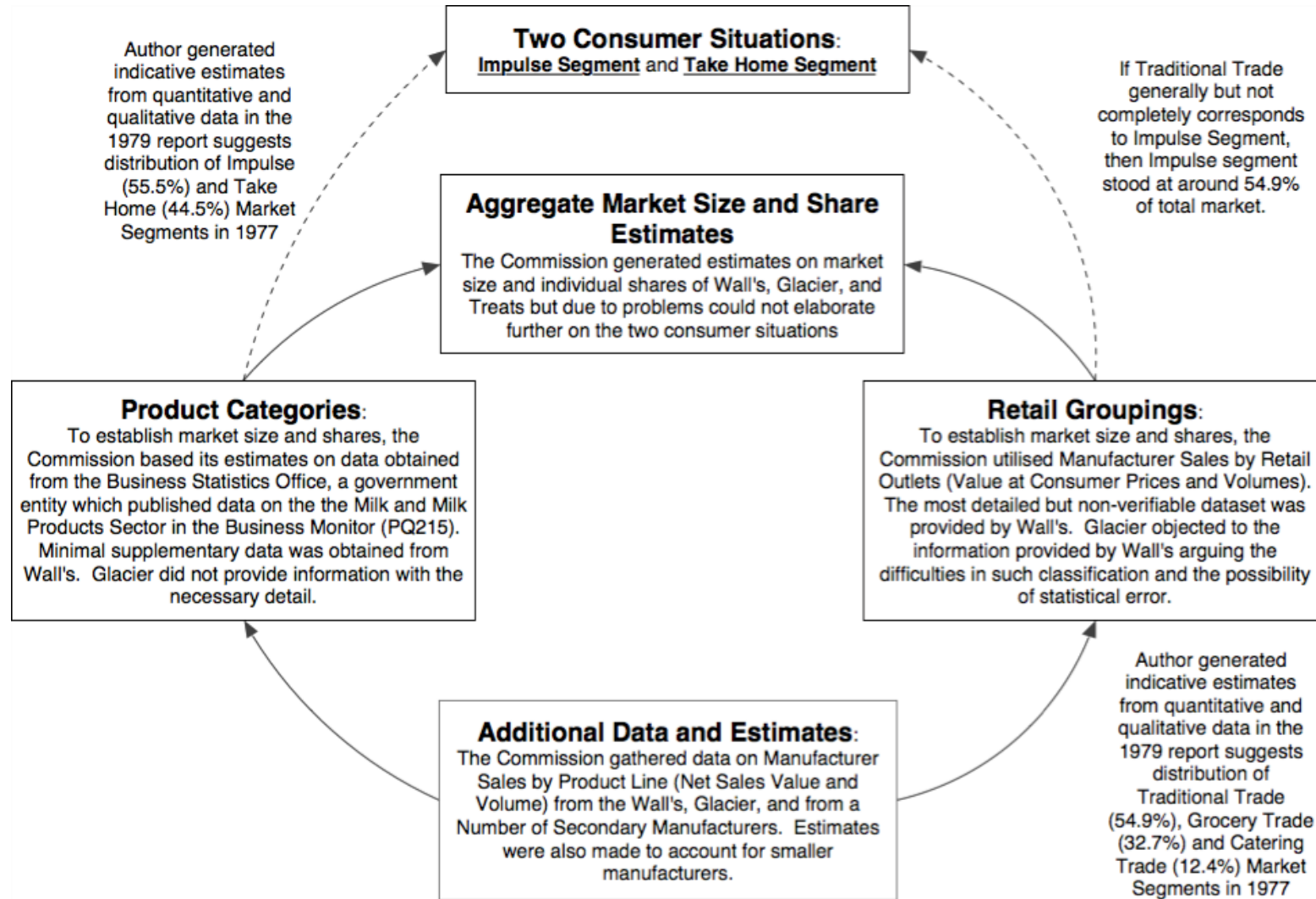
Figure 214 – Possible Distribution of Consumer Expenditure at Consumer Prices according to Two Broad Aggregated Retail Segments



Source: Section A5.7.3E

The Traditional Trade segment is estimated to have been about 54.9% of the total market for ice cream by consumer prices in 1977. The estimate is relatively similar to the estimate provided by Wall's for the Impulse Market (Figure 207) and the 55.5% estimate derived from the data provided by the BSO (Figure 208). Figure 215 summarises the sources of data used by the Commission to derive valid and reliable market estimates.

Figure 215 – Sources of Evidence Used by the Commission to Derive Market Size and Share Estimates



Estimating Market Size and Market Shares: The evidence suggests that both national manufacturers appear to have segmented the market according to the individual types of outlets, the product lines that could be sold through each of these outlets, and the consumer situations. The clearer and significantly more pronounced distinction between “impulse” and “take home” market segments emerged after the Commission concluded its 1976/7 investigation. Indeed, until the end of the investigation, the ice cream market was described in broad terms by those giving evidence as “a single market” because “suppliers are marketing the same ice cream to the same customers from different retail outlets and in different packs, depending on the occasion and the circumstances, and outlets in each sector are competitors of outlets in other sectors” (Monopolies and Mergers Commission 1979, p. 8, §20)⁹⁵¹.

Given the need for quantification and the market characteristics and associated problems just described, the Commission was compelled to treat the ice cream trade as occurring a relatively homogenous market at least for the purposes of establishing market size and share. Had more reliable quantitative data been available with respect to characteristics of the market, deeper and more meaningful comparisons could have been made. Such comparisons might have led to different or more refined conclusions and recommendations by the Commission. To an extent, the informational problem may have also led the Commission generating the wrong assessment with respect to the market and unintentionally omitting to sanction some restrictive practices or penalising some competitive strategies.

One the greatest obstacles faced by the Commission related to deriving an accurate measure for sales volumes and values produced and sold by the manufacturers other than Glacier, Wall’s and Treats. Based on a consideration of the data gathered, on the associated difficulties, problems, and evaluation differences encountered, and the opinions received by the various parties consulted, the Commission opted to express total market size in terms of a range within which it believed actual total net sales values and volumes would fall (see Figure 217). Estimate A represented the lower limit of the range while Estimate B represented the upper limit of the range. In addition, the Commission used Net Sales Value (NSV) as the most reliable guide to calculate market size and respective manufacturer shares⁹⁵². Appendix 4 of the Ice Cream Report explains the manner in which the Commission went to construct this range⁹⁵³.

Table 34 presents the market shares of the main manufacturers based on these ranges.

⁹⁵¹ See also the Ice Cream Report (1979, §354).

⁹⁵² Refer to the Ice Cream Report (1979, §50 and §2 in Appendix 4). NSV is calculated by deducting discounts and bonus payments from the standard wholesale value of sales orders (see the Ice Cream Report (1979, p. 28, §70 fn.1)). NSV, thus, stands in contrast to sales valuations based on consumer (retail) prices. According to the Commission (see the Ice Cream Report (1979, p. 170, fn. 2 to Table 4)), Glacier objected to the calculation of sales according to Net Sales Value preferring calculations based on Standard Wholesale Prices instead. The Commission rejected this suggestion (see also Appendix 4, §4).

⁹⁵³ See also paragraphs 47-50 (pp. 20-21) and especially paragraphs 13 and 14 of Appendix 4 (p. 169) to the Ice Cream Report (1979).

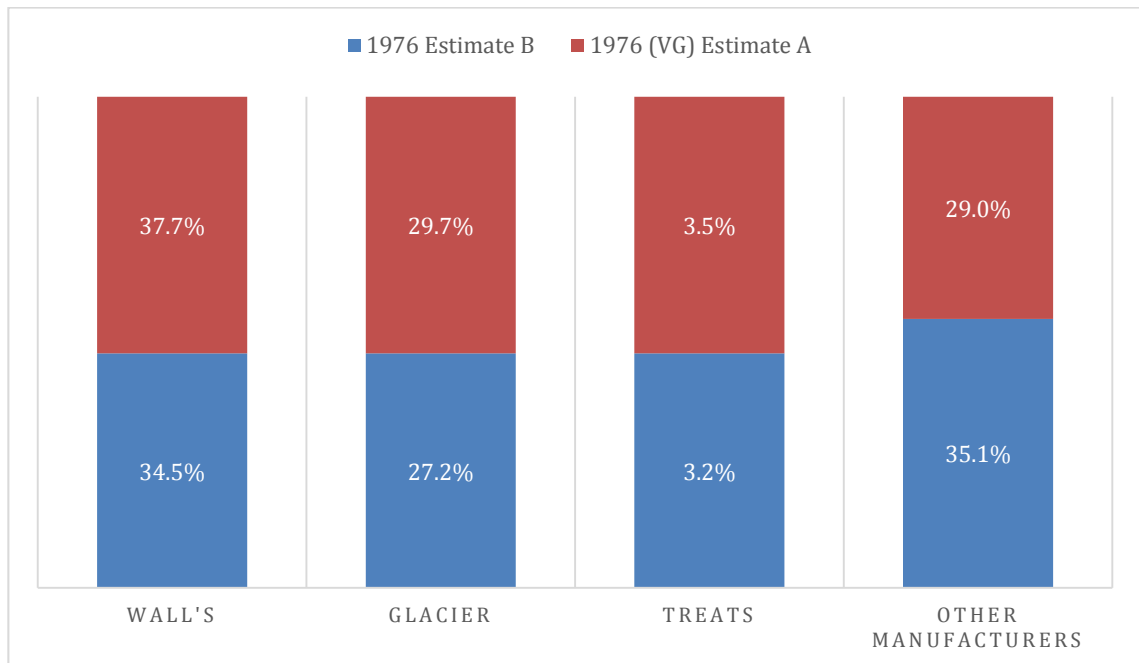
Table 34 – Estimated Market Shares of the National Manufacturers (1972 – 1977)

	1972	1973	1974	1975	1976	1977
Wall's	41.7%	35.0%	37.5%	36.4%	37.7%	37.0%
Glacier	35.1%	30.0%	32.5%	30.7%	29.7%	28.2%
Treats	2.0%	2.5%	3.3%	3.5%	3.5%	3.5%
Other Manufacturers (Estimate A)	21.2%	32.5%	26.8%	29.4%	29.0%	31.2%

	1972	1973	1974	1975	1976	1977
Wall's	38.7%	32.2%	34.0%	33.4%	34.5%	34.1%
Glacier	32.6%	27.6%	29.5%	28.2%	27.2%	26.1%
Treats	1.8%	2.3%	3.0%	3.2%	3.2%	3.3%
Other Manufacturers (Estimate B)	26.9%	37.9%	33.5%	35.2%	35.1%	36.5%

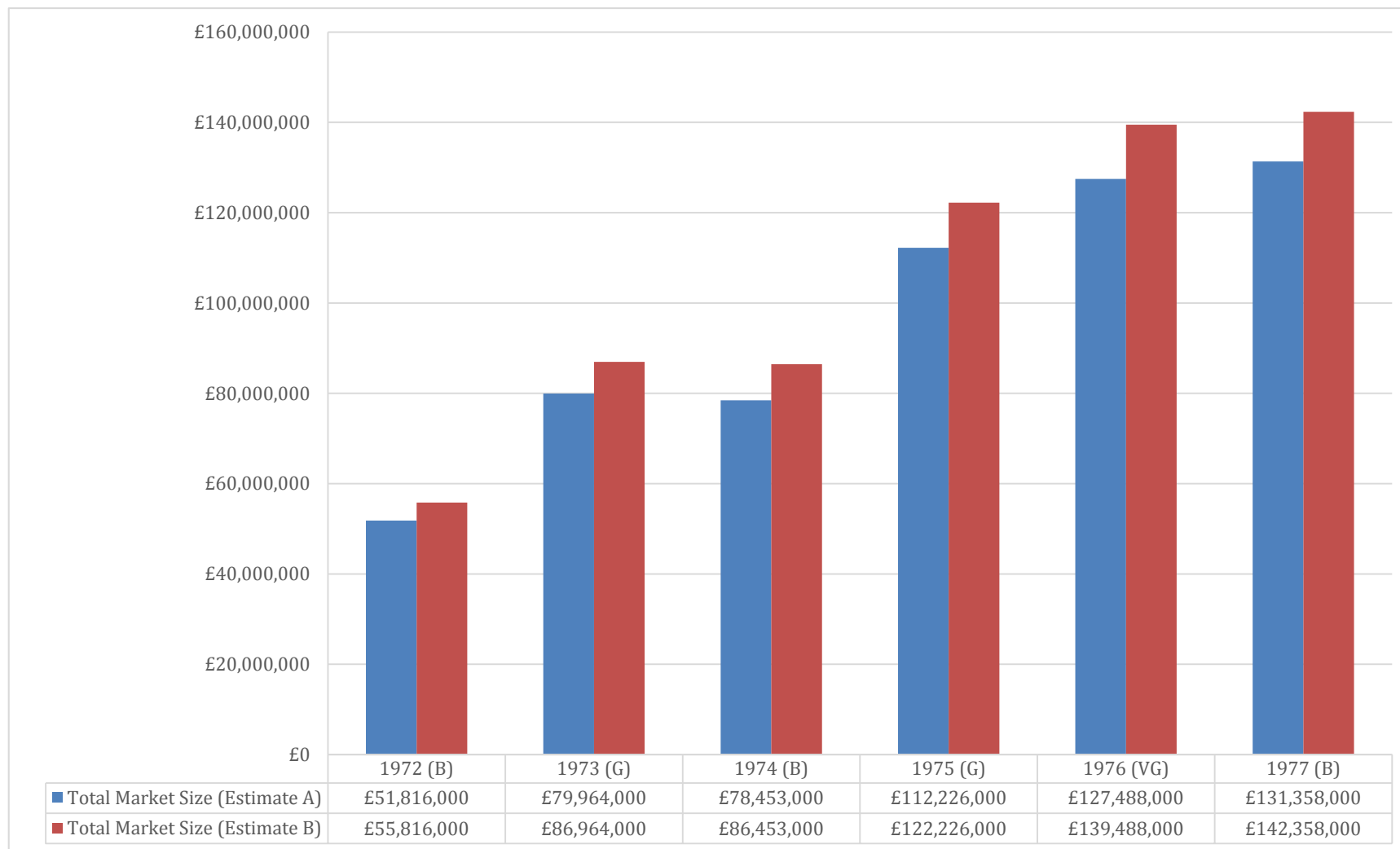
Source: Section 5.7.1E

Figure 216 – Comparison of Estimated Range of Market Shares of the National Manufacturers (1976)



Source: Table 34

Figure 217 – Total Market Size (by Net Sales Values) Estimated by the Commission (1972 to 1977)



Source: Section A5.7.1C and Section A5.7.1D

The problems associated with the availability of valid and reliable information presented a significant aversive informational event to the Commission.

Since there is no evidence to determine the prior learning history of the Commission, the absence/limited availability of information is assumed to have acquired discriminative rather than motivational function by virtue of the regulatory contingencies expressed in the FTA and the Terms of Reference issued by the Director (thus, this is a case of rule-following behaviour).

As an antecedent stimulus, the aversive event may be interpreted as having had constraining effects on the scope of the setting within which the Commission was operating. The lack or absence of information became prominent in the behaviour setting of the Commission due to the instructions it had received from the Director within the Terms of Reference, to the provisions laid out in the FTA, and to the Commission's legal obligations to abide by these instructions and laws. The FTA prescribed the quantitative criteria for establishing a monopoly situation and a complex situation. The Terms of Reference required the Commission to conduct an investigation into whether such a situation existed, in favour of whom the situation existed and how the situation operated. In addition, measures provided valuable insights into whether the practices that distorted, prevented, or restricted competition operated against the public interest. Further, there was little or no means of escaping the investigative situation: Without the information, the Commission could not fulfil its legal function and obligations and, ultimately, any existing monopoly situation and manufacturer practices running against public interest could not be singled out and rectified via intervention.

These events occasioned *search and exploratory behaviour* on the part of the Commission. Such behaviour was characterised by such topographies as collecting data from and querying a variety of sources in a bid to triangulate on a valid and reliable estimate to complete the task.

A5.7 Market and Business Performance Data Tables

A5.7.1 Performance Indicators of the National Manufacturers

In a number of the tables found within the main text of and appendices to the report, the Commission rounded sales figures to the nearest million. For example, in Appendix 4 to the 1979 Report, the sales figures by net sales value and volumes for each of the national manufacturers did not precisely match those presented in Appendices 10 to 20 that provided data on their respective financial performance. Where possible, rounding is avoided within the presentation of the data in favour of a more precise approach. In some instances, therefore, market shares and related percentages may differ from those claimed by the Commission. The differences do not invalidate the conclusions made by the Commission.

The appendices also present a range of financial ratios. The following formulas and interpretations of ratios are assumed:

(a) Trading profit to turnover (Return on Net Sales Value) is a profitability ratio that measures the degree to which a company converts its sales revenues into net profit before interest and tax. Put simply, the ratio shows the amount of profit left after all the costs that are incurred in the business are paid. The ratio is calculated: $\text{Net Profit before Interest and Tax} \div \text{Net Sales}$.

(b) Return on capital employed is another profitability ratio indicating the efficiency with which the organization can generate profit before interest and tax with its existing capital base. The ratio is calculated: $\text{Net Profit before Interest and Tax} \div \text{Employed Capital}$.

A5.7.1A Effects of Weather Variations on Sales

Table 35 – Effects of Weather Variations on Sales

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Effects of Weather Variations on Sales	Below Average	Above Average to Good	Below Average	Good to Very Good	Exceptionally Good	Below Average	1

Source:

The Ice Cream Report (1979, §25, §244).

Notes:

(1) Both Wall's (§244) and Glacier (§262) provided the Commission with details of what sales volumes would have been on weather corrected basis.

Table 36 – Changes in Sales (Utilitarian Reinforcers) Attributable to Good or Bad Weather

	Wall's	Glacier	Treats	Other Manufacturers
Change in Sales Volumes 1973 (G) on 1972 (B)	17.40%	30.40%	93.20%	108.30%
Change in Sales Volumes 1977 (B) on 1976 (G)	-14.40%	-13%	-15.20%	-16.20%
Overall Sales Volume Growth 1972 to 1977	6.40%	3.50%	152.80%	130.60%

Source: Appendix 5, Section A5.7.1B, and A5.7.1D

A5.7.1B Sales Volumes in Litres

Bad and good seasons are indicated as Bad (B), Good (G), and Very Good (VG).

Table 37 – Sales Volumes in Litres (1972 – 1977)

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	93,200,000	109,400,000	98,000,000	107,300,000	115,900,000	99,200,000	
Glacier	71,100,000	92,700,000	82,500,000	85,500,000	84,600,000	73,600,000	
Treats	7,474,000	14,441,000	15,900,000	20,834,000	22,272,000	18,894,000	
Other Manufacturers (Estimate A)	36,000,000	75,000,000	70,000,000	98,000,000	99,000,000	83,000,000	1,2
Total Market Size (Estimate A)	207,774,000	291,541,000	250,659,000	311,634,000	321,772,000	274,694,000	1,2

Manufacturer:	1972	1973	1974	1975	1976	1977	Notes
Wall's	93,200,000	109,400,000	98,000,000	107,300,000	115,900,000	99,200,000	
Glacier	71,100,000	92,700,000	82,500,000	85,500,000	84,600,000	73,600,000	
Treats	7,474,000	14,441,000	15,900,000	20,834,000	22,272,000	18,894,000	
Other Manufacturers (Estimate B)	55,000,000	101,000,000	94,000,000	126,000,000	128,000,000	107,000,000	1,2
Total Market Size (Estimate B)	226,774,000	317,541,000	274,659,000	339,634,000	350,772,000	298,694,000	1,2

Sources:

(1) Sales volume figures for Wall's obtained from the Ice Cream Report (1979) Appendix 10. See also §243. Based on evidence provided by the manufacturer.

(2) Sales volume figures for Glacier obtained from the Ice Cream Report (1979) Appendix 15. See also §261. Based on evidence provided by the manufacturer.

(3) Sales volume figures for Treats obtained from the Ice Cream Report (1979) Appendix 13. See also §254. Based on evidence provided by the manufacturer.

(4) The Ice Cream Report (1979) Appendix 4, Table 5

Notes:

(1) The entry "Other Manufacturers" represents all other ice cream manufacturers operating in the industry. The figures are estimates made by the Commission based on (i) the Business Monitor (PQ215, 1978) Milk and Milk Products dataset published by the Business Statistics Office (BSO) (see also Section A5.6.4 of this research which discusses the problems associated with this dataset summarising Appendix 4 (§3-10) and other relevant paragraphs of the Ice Cream Report (1979)); (ii) the data provided and the objections raised on the BSO dataset by Wall's and

Glacier; and, (iii) information gathered from an additional 90 secondary manufacturers (which was not entirely complete; see also Section A5.6.4 of this research which discusses the problems associated with this information summarising Appendix 4 (§13-14)).

(2) The Commission was unable to establish a single estimate for market size. Therefore, it calculated a range, Estimate Total A and Estimate Total B between which it believed that the actual market size stood (see also Section A5.6.4 of this research which discusses the problems associated with this information summarising Appendix 4 (§13-14)). Estimate A represented the lower limit of the range while Estimate B represented the upper limit of the range.

(3) It should be noted that when comparing the figures in Appendix 4 of the Report to the Appendices relating to the financial performance of the three main manufacturers, there appear to be differences due to rounding and misprints. The figures presented in the table above assume that the appendices with the financials of each company were the main source for preparing the tables presented by the Commission in Appendix 4. Therefore, the figures presented above and Table 5 in Appendix 4 do not correspond exactly.

Table 38 – Estimated Market Size in Volume (Litres)

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Glacier		264,000,000	247,000,000	286,000,000	310,000,000		
Wall's Median		295,000,000	290,000,000	327,000,000	362,000,000		
Adjusted Business Monitor Total A		287,000,000	264,000,000	312,000,000	321,000,000		
Adjusted Business Monitor Total B		314,000,000	288,000,000	340,000,000	350,000,000		

Sources: The Ice Cream Report (1979) Appendix 4, Table 8

A5.7.1C Comparison of the Net Sales Values of the National Manufacturers

Table 39 – Comparison of the Net Sales Values of the National Manufacturers

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	£21,600,000	£28,000,000	£29,400,000	£40,800,000	£48,100,000	£48,600,000	1, 2
Glacier	£18,200,000	£24,000,000	£25,500,000	£34,500,000	£37,900,000	£37,100,000	1, 2
Treats	£1,016,000	£1,964,000	£2,553,000	£3,926,000	£4,488,000	£4,658,000	1, 2

Sources:

- (1) Net sales value figures for Wall's obtained from the Ice Cream Report (1979) Appendix 10. See also §243. Based on evidence provided by the manufacturer.
- (2) Net sales value figures for Glacier obtained from the Ice Cream Report (1979) Appendix 15. See also §261. Based on evidence provided by the manufacturer.
- (3) Net sales value figures for Treats obtained from the Ice Cream Report (1979) Appendix 13. See also §254. Based on evidence provided by the manufacturer.

Notes:

- (1) The Commission used Net Sales Value (NSV) as a guide to calculate market size and respective manufacturer shares. NSV is calculated by deducting discounts and bonus payments from the standard wholesale value of sales orders (see the Ice Cream Report (1979, p. 28, §70 fn.1)). NSV, thus, stands in contrast to sales valuations based on consumer (retail) prices. According to the Commission (see the Ice Cream Report (1979, p. 170, fn. 2 to Table 4)), Glacier objected to the calculation of sales according to Net Sales Value preferring calculations based on Standard Wholesale Prices instead. The Commission rejected this suggestion (Monopolies and Mergers Commission 1979, see also Appendix 4 (§4)).
- (2) According to the Commission, Net Sales Value was a more appropriate indication of the relative position of the national manufacturers than Sales by Volume or Sales at Consumer Prices (see the Ice Cream Report (1979, p. 21, §50 and Appendix 4 (§2))).

A5.7.1D Total Manufacturer Net Sales Values Estimated by the Commission

Table 40 – Total Manufacturer Net Sales Values Estimated by the Commission

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	£21,600,000	£28,000,000	£29,400,000	£40,800,000	£48,100,000	£48,600,000	
Glacier	£18,200,000	£24,000,000	£25,500,000	£34,500,000	£37,900,000	£37,100,000	
Treats	£1,016,000	£1,964,000	£2,553,000	£3,926,000	£4,488,000	£4,658,000	
Other Manufacturers (Estimate A)	£11,000,000	£26,000,000	£21,000,000	£33,000,000	£37,000,000	£41,000,000	1 to 2
Total Market Size (Estimate A)	£51,816,000	£79,964,000	£78,453,000	£112,226,000	£127,488,000	£131,358,000	1 to 4

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	£21,600,000	£28,000,000	£29,400,000	£40,800,000	£48,100,000	£48,600,000	
Glacier	£18,200,000	£24,000,000	£25,500,000	£34,500,000	£37,900,000	£37,100,000	
Treats	£1,016,000	£1,964,000	£2,553,000	£3,926,000	£4,488,000	£4,658,000	
Other Manufacturers (Estimate B)	£15,000,000	£33,000,000	£29,000,000	£43,000,000	£49,000,000	£52,000,000	1 to 2
Total Market Size (Estimate B)	£55,816,000	£86,964,000	£86,453,000	£122,226,000	£139,488,000	£142,358,000	1 to 4

Sources: (1) Net sales value figures for Wall's, Glacier, and Treats are derived from Section A5.7.1C (Table 39) which lists relevant sources.

(2) Estimates (A) and Estimates (B) for Other Manufacturers are derived from the Ice Cream Report (1979) Appendix 4, Table 4.

Notes: (1) The entry "Other Manufacturers" represents all other ice cream manufacturers operating in the industry. The figures are estimates made by the Commission based on the Business Monitor (PQ215, 1978) Milk and Milk Products dataset published by the Business Statistics Office (BSO). (See also Section A5.6.4 of this research which discusses the problems associated with this dataset summarising Appendix 4 (§3-10) and other relevant paragraphs of the Ice Cream Report (1979) especially §48). Additional data considered by the Commission included: (i) the data provided and the objections raised on the BSO dataset by Wall's and Glacier; and, (ii) information gathered from an additional 90 secondary manufacturers (which was not entirely complete; see also Section A5.6.4 of this research which discusses the problems associated with this information summarising Appendix 4 (§13-14)).

(2) The Commission was unable to establish a single estimate for market size. Therefore, it calculated a range, Estimate Total A and Estimate Total B between which it believed that the actual market size stood. (See also Section A5.6.4 of this research which, summarising Appendix 4 (§13-14), discusses the problems associated with this data). Estimate A represented the lower limit of the range while Estimate B represented the upper limit of the range. According to the Ice Cream Report (1979, p. 20, §47-50), the Commission calculated these estimations by allowed for any omissions made by the authors of the Business Monitor (for example, not including the sales of certain smaller manufacturers), and for any inclusions of non-ice cream products made in the dataset provided within the Business Monitor. Estimates A and B were calculated by grossing up the results by 10% and 20% respectively.

(3) Differences between the table presented in contrast to the data provided by Table 4 in Appendix 4 of the Ice Cream Report (1979) are due to rounding.

(4) According to the Commission, Net Sales Value was a more appropriate indication of the relative position of the national manufacturers than Sales by Volume or Sales at Consumer Prices (see the Ice Cream Report (1979, p. 21, §50 and Appendix 4, paragraph 2)).

A5.7.1E Manufacturer Market Shares on Net Sales Values Estimated by the Commission

Table 41 – Manufacturer Market Shares on Net Sales Values Estimated by the Commission

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	41.7%	35.0%	37.5%	36.4%	37.7%	37.0%	1
Glacier	35.1%	30.0%	32.5%	30.7%	29.7%	28.2%	1
Treats	2.0%	2.5%	3.3%	3.5%	3.5%	3.5%	1
Other Manufacturers (Estimate A)	21.2%	32.5%	26.8%	29.4%	29.0%	31.3%	1

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	38.7%	32.2%	34.0%	33.4%	34.5%	34.1%	1
Glacier	32.6%	27.6%	29.5%	28.2%	27.2%	26.1%	1
Treats	1.8%	2.3%	3.0%	3.2%	3.2%	3.3%	1
Other Manufacturers (Estimate B)	26.9%	37.9%	33.5%	35.2%	35.1%	36.5%	1

Sources: Section A5.7.1D.

Notes: (1) Differences between the table presented in contrast to the data provided by Table 4 in Appendix 4 of the Ice Cream Report (1979) are due to rounding.

A5.7.1F Net Profit before Interest

Table 42 – Net Profit before Interest

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	£2,200,000	£3,600,000	£1,400,000	£6,400,000	£6,900,000	£3,800,000	
Glacier	£1,300,000	£2,500,000	£500,000	£3,400,000	£3,600,000	£200,000	
Treats	£156,000	£321,000	£269,000	£599,000	£639,000	£380,000	

Sources:

- (1) Net Profit figures for Wall's obtained from the Ice Cream Report (1979) Appendix 10. See also §243. Based on evidence provided by the manufacturer.
- (2) Net Profit figures for Glacier obtained from the Ice Cream Report (1979) Appendix 15. See also §261. Based on evidence provided by the manufacturer.
- (3) Net Profit figures for Treats obtained from the Ice Cream Report (1979) Appendix 13. See also §254. Based on evidence provided by the manufacturer.

A5.7.1G Return on Net Sales Value (Ice Cream)

Table 43 – Return on Net Sales Value (Ice Cream)

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	10.2%	12.9%	4.8%	15.7%	14.3%	7.8%	1
Glacier	7.1%	10.4%	2.0%	9.9%	9.5%	0.5%	1
Treats	15.4%	16.3%	10.5%	15.3%	14.2%	8.2%	1

Sources:

Tables in Section A5.7.1F and A5.7.1C

Notes:

(1) Trading profit to turnover (Return on Net Sales Value) is a profitability ratio that measures the degree to which a company converts its sales revenues into net profit before interest and tax. Put simply, the ratio shows the amount of profit left after all the costs that are incurred in the business are paid. The ratio is calculated: $\text{Net Profit before Interest and Tax} \div \text{Net Sales}$.

A5.7.1H Average Capital Employed (Ice Cream)

Table 44 – Average Capital Employed (Proportions Attributable to Capital Apportioned to the Supply of Ice Cream)

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	£15,300,000	£17,100,000	£16,800,000	£22,900,000	£20,100,000	£19,800,000	1
Glacier	£12,500,000	£13,900,000	£15,000,000	£15,300,000	£16,000,000	£13,500,000	1
Treats	£463,300	£444,500	£535,300	£944,700	£1,286,100	£1,445,000	1

Sources:

(1) Average Capital Employed figures for Wall's obtained from the Ice Cream Report (1979) Appendix 12. See also §243. Based on evidence provided by the manufacturer.

(2) Average Capital Employed figures for Glacier obtained from the Ice Cream Report (1979) Appendix 16. See also §261. Based on evidence provided by the manufacturer.

(3) Average Capital Employed figures for Treats obtained from the Ice Cream Report (1979) Appendix 14. See also §254. Based on evidence provided by the manufacturer.

Notes:

(1) Capital employed is calculated by subtracting Current Liabilities from Total Assets. The Commission reports two figures, one for the total operations of the company and another that is directly apportioned to the manufacture and supply of ice creams. The latter figure is always used. For comparative purposes, the Commission uses a historical measure of Return on Capital Employed calculated using figures for Total Assets that exclude Goodwill. (Indeed compare the entries of Return on Capital Employed in table found in §274 of the Ice Cream Report (1979) to the tables in §254 and §261 respectively. See also Appendices 12, 14, and 16 to the Ice Cream Report (1979)).

A5.7.1I Return on Average Capital Employed

Table 45 – Return on Average Capital Employed

Manufacturer:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Wall's	14.4%	21.1%	8.3%	27.9%	34.3%	19.2%	1
Glacier	10.4%	18.0%	3.3%	22.2%	22.5%	1.5%	1
Treats	33.7%	72.2%	50.3%	63.4%	49.7%	26.3%	1
Avg. Food Mfg. Firm	16.0%	16.0%	16.0%	17.0%	20.0%	17.0%	2

Sources:

Tables in Section A5.7.1F and A5.7.1H and Appendices 12, 14, and 16 to the Ice Cream Report (1979).

Notes:

(1) Return on capital employed is another profitability ratio indicating the efficiency with which the organization can generate profit before interest and tax with its existing capital base. The ratio is calculated: Net Profit before Interest and Tax ÷ Employed Capital.

(2) The Commission also lists the Return on Average Capital Employed for an average firm in food manufacturing to provide an indication of how *fit* the three national manufacturers are.

A5.7.1J Break Even Points in Sales Revenue by National Manufacturer

Table 46 – Variable Costs of Wall's and Glacier (1972 – 1977)

Variable Costs	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	£6,900,000	£9,700,000	£12,000,000	£15,500,000	£19,600,000	£19,700,000
Glacier	£5,700,000	£7,700,000	£9,000,000	£12,300,000	£12,900,000	£13,800,000

Sources: (1) Appendices 11(Wall's) and 15 (Glacier) to the Ice Cream Report (1979)

Notes: Assumes that figures are comparable.

Table 47 – Total Fixed Overheads of Wall's and Glacier (1972 – 1977)

Total Fixed Overheads	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	£13,000,000	£15,300,000	£17,200,000	£20,300,000	£23,800,000	£27,000,000
Glacier	£11,200,000	£13,800,000	£16,000,000	£18,800,000	£21,400,000	£23,100,000

Sources: (1) Appendices 11(Wall's) and 15 (Glacier) to the Ice Cream Report (1979)

Notes: Assumes that figures are comparable.

Table 48 – Break Even Points in Sales Revenues of Wall's and Glacier (1972 – 1977)

Break Even Points	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	£19,102,041	£23,409,836	£29,062,069	£32,736,759	£40,167,719	£45,404,844
Glacier	£16,307,200	£20,319,018	£24,727,273	£29,216,216	£32,442,400	£36,781,545

Sources:

Author

Notes:

(1) Break Even Point in Sales is calculated as follows $\text{Fixed Costs} \div (1 - (\text{Variable Costs} \div \text{Total Sales Revenue}))$
 (Source of Formula: Glautier and Underdown (2001, p. 426).)
 (2) Sales revenues are found in Section A5.7.1C.

Table 49 – A Comparison of the Fixed Overheads to Net Sales Value Ratio of Wall's and Glacier (1972 – 1977)

Fixed Overheads to Net Sales Value Ratio	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	60.2%	54.6%	58.5%	49.8%	49.5%	55.6%
Glacier	61.5%	57.5%	62.7%	54.5%	56.5%	62.3%

Sources:

(1) Appendices 11(Wall's) and 15 (Glacier) to the Ice Cream Report (1979)

Notes:

Assumes that figures are comparable. Average Fixed Overheads as Percentage of Sales for the six years are 55% (Wall's) and 59% (Glacier).

A5.7.1K Advertising Expenditure of Wall's and Glacier (1972 – 1976)

Table 50 – Advertising Expenditure of Wall's and Glacier (1972 – 1976)

Advertising Expenditure	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	£981,000	£1,135,000	£1,232,000	£939,000	£1,491,000	NA
Glacier	£1,058,000	£1,259,000	£1,291,000	£1,085,000	£1,540,000	NA

Sources: (1) Paragraphs 122 and 125 of the Ice Cream Report (1979)
 (2) Paragraph 205 of the Ice Cream Report (1979)

Table 51 – Advertising Expenditure of Wall's and Glacier as a Percentage of Net Sales Values (1972 – 1976)

Advertising Expenditure	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	4.5%	4.1%	4.2%	2.3%	3.1%	
Glacier	5.8%	5.2%	5.1%	3.1%	4.1%	

Sources: (1) Paragraphs 122 and 125 of the Ice Cream Report (1979)
 (2) Paragraph 205 of the Ice Cream Report (1979)

A5.7.1L Net Selling Price Per Litre and Performance Metrics Calculated on a Historic Cost Basis

Table 52 – Average Net Selling Price Per Litre (Wall's versus Other Manufacturers)

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	£0.232	£0.256	£0.300	£0.380	£0.415	£0.490
Glacier	£0.256	£0.259	£0.309	£0.404	£0.448	£0.504
Treats	£0.136	£0.136	£0.161	£0.188	£0.202	£0.247
Other Manufacturers (Estimate A)	£0.306	£0.347	£0.300	£0.337	£0.374	£0.494

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Wall's	£0.232	£0.256	£0.300	£0.380	£0.415	£0.490
Glacier	£0.256	£0.259	£0.309	£0.404	£0.448	£0.504
Treats	£0.136	£0.136	£0.161	£0.188	£0.202	£0.247
Other Manufacturers (Estimate B)	£0.273	£0.327	£0.309	£0.341	£0.383	£0.486

Source

Sections A5.7.1B and A5.7.1C. See also paragraphs 1 and 2 of Appendix 22 of the Ice Cream Report

Table 53 – Performance Metrics Calculated on a Historic Cost Basis

Net Sales Value

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977
Wall's	£21,600,000	£28,000,000	£29,400,000	£40,800,000	£48,100,000	£48,600,000	125%
Glacier	£18,200,000	£24,000,000	£25,500,000	£34,500,000	£37,900,000	£37,100,000	104%
Treats	£1,016,000	£1,964,000	£2,553,000	£3,926,000	£4,488,000	£4,658,000	358%

Source: The Ice Cream Report (1979) Appendices 11, 12, and 15

Variable Costs

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977
Wall's	£6,800,000	£9,500,000	£11,300,000	£14,900,000	£18,700,000	£19,200,000	182%
Glacier	£5,700,000	£7,700,000	£9,000,000	£12,300,000	£12,900,000	£13,800,000	142%
Treats	£548,000	£1,148,000	£1,580,000	£2,443,000	£2,762,000	£2,987,000	445%

Source: The Ice Cream Report (1979) Appendices 11, 12, and 15

Gross Profit Margin £

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977
Wall's	£14,800,000	£18,500,000	£18,100,000	£25,900,000	£29,400,000	£29,400,000	99%
Glacier	£12,500,000	£16,300,000	£16,500,000	£22,200,000	£25,000,000	£23,300,000	86%
Treats	£468,000	£816,000	£973,000	£1,483,000	£1,726,000	£1,671,000	257%

Source: The Ice Cream Report (1979) Appendices 10, 13, and 15

Gross Profit Margin %

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977	Average
Wall's	68.5%	66.1%	61.6%	63.5%	61.1%	60.5%	-12%	63.5%
Glacier	68.7%	67.9%	64.7%	64.3%	66.0%	62.8%	-9%	65.7%
Treats	46.1%	41.5%	38.1%	37.8%	38.5%	35.9%	-22%	39.6%

Source: The Ice Cream Report (1979) Appendices 10, 13, and 15

Fixed Costs (Production, Distribution, and All Others)

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977
Wall's	£12,600,000	£14,900,000	£16,700,000	£19,500,000	£22,500,000	£25,600,000	103%
Glacier	£11,200,000	£13,800,000	£16,000,000	£18,800,000	£21,400,000	£23,100,000	106%
Treats	£312,000	£495,000	£704,000	£884,000	£1,087,000	£1,291,000	314%

Source: The Ice Cream Report (1979) Appendices 10, 13, and 15

Net Profit Before Interest and Tax

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977
Wall's	£2,200,000	£3,600,000	£1,400,000	£6,400,000	£6,900,000	£3,800,000	73%
Glacier	£1,300,000	£2,500,000	£500,000	£3,400,000	£3,600,000	£200,000	-85%
Treats	£156,000	£321,000	£269,000	£599,000	£639,000	£380,000	144%

Source: The Ice Cream Report (1979) Appendices 12, 14, and 16

Net Profit Margin

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977	Average
Wall's	10.2%	12.9%	4.8%	15.7%	14.3%	7.8%	-23%	10.9%
Glacier	7.1%	10.4%	2.0%	9.9%	9.5%	0.5%	-92%	6.6%
Treats	15.4%	16.3%	10.5%	15.3%	14.2%	8.2%	-47%	13.3%

Source: The Ice Cream Report (1979) Appendices 12, 14, and 16

Average Capital Employed (Proportions Attributable to Capital Apportionable to the Supply of Ice Cream)

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977
Wall's	£15,300,000	£17,100,000	£16,800,000	£22,900,000	£20,100,000	£19,800,000	29%
Glacier	£12,500,000	£13,900,000	£15,000,000	£15,300,000	£16,000,000	£13,500,000	8%
Treats	£463,300	£444,500	£535,300	£944,700	£1,286,100	£1,445,000	212%

Source: The Ice Cream Report (1979) Appendices 12, 14, and 16

Return on Average Capital Employed

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977	Average
Wall's	14.4%	21.1%	8.3%	27.9%	34.3%	19.2%	33%	20.9%
Glacier	10.4%	18.0%	3.3%	22.2%	22.5%	1.5%	-86%	13.0%
Treats	33.7%	72.2%	50.3%	63.4%	49.7%	26.3%	-22%	49.3%

Source: The Ice Cream Report (1979) Appendices 12, 14, and 16

Fixed Costs to Sales

	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Change between 1972 and 1977	Average
Wall's	58.3%	53.2%	56.8%	47.8%	46.8%	52.7%	-10%	52.6%
Glacier	61.5%	57.5%	62.7%	54.5%	56.5%	62.3%	1%	59.2%
Treats	30.7%	25.2%	27.6%	22.5%	24.2%	27.7%	-10%	26.3%

Source: The Ice Cream Report (1979) Appendices 12, 14, and 16

A5.7.2 Distribution of Consumer Expenditure Among Product Categories

A5.7.2A Distribution of Consumer Expenditure Among Product Categories by Sales Value (1972 – 1977)

Table 54 – Distribution of Consumer Expenditure Among Product Categories by Net Sales Value (1972 – 1977)

Product Category:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Soft Ice Cream Mix		£1,973,000	£1,839,000	£2,700,000	£3,399,000	£0	1, 2, 3, 4
Water Ices and Freeze Drinks		£4,696,000	£8,820,000	£13,005,000	£14,770,000	£11,948,000	1, 3, 4
Other Stick Confections		£9,318,000	£9,542,000	£12,854,000	£14,675,000	£14,193,000	1, 3, 4 1, 2, 3, 4,
All Others		£29,609,000	£23,516,000	£33,545,000	£37,623,000	£38,639,000	5
Bulk		£10,786,000	£11,606,000	£17,517,000	£22,855,000	£28,280,000	1, 3, 4
Home Packs		£16,586,000	£17,175,000	£23,584,000	£24,137,000	£23,759,000	1, 3, 4
	<u>£47,203,000</u>	<u>£72,968,000</u>	<u>£72,498,000</u>	<u>£103,205,000</u>	<u>£117,459,000</u>	<u>£116,819,000</u>	

Source: Table 2 in Appendix 4 of the Ice Cream Report (1979, p. 167) and paragraph 15. The data was derived from the Business Monitor, a report published by the Business Statistics Office (See Appendix 5 and Section A5.6.4 of this research).

Notes:

- (1) Figures for 1972 were not available
- (2) Figures for the sales of soft ice cream mix in 1977 were included under "All Others"
- (3) The BSO estimates only provide a broad indication of the sales by manufacturers and the distribution of consumer expenditure among product categories. The Commission noted that the figures understate the extent of the sales of bulk ice creams because (a) the BSO omitted the sales of smaller manufacturers, and, (b) these smaller manufacturers appear to be very active in the bulk products segment (§15). Section A5.6.4 of this research discusses the quality of the data and the objections raised by both Glacier and Wall's in its regard. As such, however, the table provides only an indication with respect to the distribution of consumer expenditure among product categories. The Commission also identified several other problems in relation to the dataset obtained from the BSO: (a) there were no adjustments for foreign trade (a point also raised by Glacier); (b) the sales figures for 1972 may have been under-recorded and may have also understated the

contribution of the manufacturers other than Glacier, Wall's and Treats; (c) the figures for 1973 included varying amounts of estimation and may have also overstated the contribution of the manufacturers other than Glacier, Wall's and Treats; and (d) the figures for 1977 excluded sales of soft mix and, therefore, comparisons with earlier years was not possible. The Commission provided for this by including its own estimate for the product category. Refer to the Ice Cream Report (1979, Appendix 4 paragraphs 8, 9, and 14 (including footnotes 1 and 2)).

(4) The Commission notes that no comparable figures were available prior to 1972.

(5) According to Paragraph 15, the heading "All Others" refers to, primarily, confectionery.

A5.7.2B Distribution of Consumer Expenditure Among Product Categories in Percentages (1972 – 1977)

Table 55 – Distribution of Consumer Expenditure Among Product Categories in Percentages (1972 – 1977)

Product Category:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Soft Ice Cream Mix		2.7%	2.5%	2.6%	2.9%		
Water Ices and Freeze							
Drinks		6.4%	12.2%	12.6%	12.6%	10.2%	
Other Stick Confections		12.8%	13.2%	12.5%	12.5%	12.1%	
All Others		40.6%	32.4%	32.5%	32.0%	33.1%	
Bulk		14.8%	16.0%	17.0%	19.5%	24.2%	
Home Packs		22.7%	23.7%	22.9%	20.5%	20.3%	

Source: Table in Section A5.7.2A (Table 54).

A5.7.2C Distribution of Consumer Expenditure Among Product Categories by Consumer Situation (1972 – 1977)

Table 56 – Distribution of Consumer Expenditure Among Product Categories by Consumer Situation (Net Sales Values, 1972 – 1977)

Product Category	Consumer Situation	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Soft Ice Cream Mix	Impulse		£1,973,000	£1,839,000	£2,700,000	£3,399,000	£0	1 to 5
Water Ices & Freeze Drinks	Impulse		£4,696,000	£8,820,000	£13,005,000	£14,770,000	£11,948,000	3 to 5
Other Stick Confections	Impulse		£9,318,000	£9,542,000	£12,854,000	£14,675,000	£14,193,000	3 to 5
All Others	Impulse		£29,609,000	£23,516,000	£33,545,000	£37,623,000	£38,639,000	2 to 5
Bulk	Take Home		£10,786,000	£11,606,000	£17,517,000	£22,855,000	£28,280,000	3 to 5
Home Packs	Take Home		£16,586,000	£17,175,000	£23,584,000	£24,137,000	£23,759,000	3 to 5
		<u>£47,203,000</u>	<u>£72,968,000</u>	<u>£72,498,000</u>	<u>£103,205,000</u>	<u>£117,459,000</u>	<u>£116,819,000</u>	
	Impulse		£45,596,000	£43,717,000	£62,104,000	£70,467,000	£64,780,000	6, 7
	Take Home		£27,372,000	£28,781,000	£41,101,000	£46,992,000	£52,039,000	6, 7
			<u>£72,968,000</u>	<u>£72,498,000</u>	<u>£103,205,000</u>	<u>£117,459,000</u>	<u>£116,819,000</u>	6, 7
	Impulse		62.5%	60.3%	60.2%	60.0%	55.5%	
	Take Home		37.5%	39.7%	39.8%	40.0%	44.5%	

Source: Table in Section A5.7.2A (Table 54) and the indicative classification of products by consumer situation provided by the Commission in paragraphs §10 to §12 of the Ice Cream Report (1979, pp. 4-5).

Notes: (1) Figures for 1972 were not available
(2) Figures for the sales of soft ice cream mix in 1977 were included under "All Others"
(3) The figures provide only a broad indication of the sales by manufacturers. The Commission notes that the figures understate the extent of the sales of bulk ice creams because (a) the Business Statistics Office omitted the sales of smaller manufacturers, and, (b) these smaller manufacturers appear to be very active in the bulk products segment (§15). Section A5.6.4 of this research discusses the quality of the data and the objections raised by both Glacier and Wall's in its regard. As such, however, the table provides only an indication with

respect to the distribution of consumer expenditure among product categories. The Commission also identified several other problems in relation to the dataset obtained from the BSO: (a) there were no adjustments for foreign trade (a point also raised by Glacier); (b) the sales figures for 1972 may have been under-recorded and may have also understated the contribution of the manufacturers other than Glacier, Wall's and Treats; (c) the figures for 1973 included varying amounts of estimation and may have also overstated the contribution of the manufacturers other than Glacier, Wall's and Treats; and (d) the figures for 1977 excluded sales of soft mix and, therefore, comparisons with earlier years was not possible. The Commission provided for this by including its own estimate for the product category (Appendix 4, paragraphs 14 (fn. 1 and 2), 8, and 9).

(4) The Commission notes that no comparable figures were available prior to 1972.

(5) According to Paragraph 15, the heading "All Others" refers to, primarily, confectionery.

(6) Table 57 shows the classification of products by consumer situation as provided by the Commission in paragraphs §10 to §12 of the Ice Cream Report (1979, pp. 4-5).

(7) The Commission does not perform this analysis.

Table 57 – Classification of Products by Consumer Situation

Product Type	Broad Product Category	Consumer Situation
Soft Ice Cream Mix	Soft Mix	Impulse
Water Ices and Freeze Drinks	Confection	Impulse
Other Stick Confections	Confection	Impulse
All Others	Confection	Impulse
Bulk	Bulk	Take Home
Home Packs	Dessert	Take Home

Source: (Monopolies and Mergers Commission 1979, pp. 4-5, §10-12)

A5.7.2D Estimates of Market Segment Size (Consumer Sales) Provided by Wall's (1976)

According to paragraph 15 of the Ice Cream Report (1979, p. 6), Wall's provided estimates for monitoring performance⁹⁵⁴ on market segment size. The firm claimed that the classification did not represent "homogenous market sectors" (Monopolies and Mergers Commission 1979, p. 6, §15).

Table 58 – Estimates of Market Segment Size (Consumer Sales) Provided by Wall's (1976)

	1976 (VG)	Notes
Impulse Products	50%	1
Dessert Items	35%	1
Bulk Packs and Multipack	15%	1, 2

Source: Paragraph 15 of the Ice Cream Report (1979, p. 6) based on data provided by Wall's

Notes: (1) Wall's claimed that the classification did not represent "homogenous market sectors" (The Monopolies and Mergers Commission 1979, p. 6, §15).

(2) The heading "Bulk Packs and Multipacks" refers to products sold for consumption in catering establishments and at home as a snack.

⁹⁵⁴ Refer to the Ice Cream Report (1979, §15).

A5.7.2E Distribution of Net Sales of Glacier and Wall's by Product Category

Table 59 – Distribution of the Net Sales of Wall's by Product Category (1971 and 1976)

	1971	1976	Notes
Confectionery	52%	50%	
Desserts	31%	25%	
Bulk, Catering and Own Label	17%	25%	1

Source: Paragraph 71 of the Ice Cream Report (1979).

Notes: (1) Wall's did not provide a further analysis for the heading "Bulk, Catering and Own Label Ice Cream" for 1971. However, by 1976 it sold 14.3% of its ice cream as Bulk packs and 10.7% as Catering and Own Label Ice Cream

Table 60 – Distribution of the Net Sales of Glacier by Product Category (1971 and 1976)

	1971	1976	Notes
Confectionery	59%	57%	
Desserts	22%	25%	
Catering and Bulk	19%	18%	

Source: Paragraph 159 of the Ice Cream Report (1979).

Table 61 – Distribution of the Net Sales of Wall's by Broad Retail Category (1971, 1976, and 1977)

	1971	1976	1977
Traditional Trade	68%	53%	47%
Grocery Trade	10%	29%	34%
Wholesale, Catering, and Others	22%	18%	19%

Source: Paragraphs 71-72 of the Ice Cream Report (1979).

A5.7.2F Ranking of Consumer Expenditure Distribution According Retail Segments Reflecting Importance of Retail Outlet Type

Table 62 – Ranking of Consumer Expenditure Distribution According Retail Segments Reflecting Importance of Retail Outlet Type

	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
CTNs, SGSs, and Seasonal Outlets	£56.60	£63.30	£82.90	£96.00	£91.00
Mobiles	£20.80	£25.80	£34.80	£42.00	£44.00
Catering	£13.20	£15.50	£21.40	£29.00	£33.00
Self Service Supermarkets	£12.80	£18.20	£23.60	£34.00	£43.00
Freezer Centres	£11.50	£18.90	£31.30	£43.00	£44.00
Entertainment	£6.10	£7.30	£8.00	£9.00	£11.00
	£121.00	£149.00	£202.00	£253.00	£266.00

Sources:

Appendix 2 of the Ice Cream Report (Monopolies and Mergers Commission 1979)

Notes:

(1) Since the data is collected by Wall's, the ranking is valid only for Wall's

	Ranking 1973	Ranking 1974	Ranking 1975	Ranking 1976	Ranking 1977
CTNs, SGSs, and Seasonal Outlets	6	6	6	6	6
Mobiles	5	5	5	4	5
Catering	4	2	2	2	2
Self Service Supermarkets	3	3	3	3	3
Freezer Centres	2	4	4	5	5
Entertainment	1	1	1	1	1

Notes:

(1) Since the data is collected by Wall's, the ranking is valid only for Wall's

(2) The ranking is such that 6 refers to the most prominent sector followed by 5, 4, 3, 2, and 1 which refers to the least prominent

A5.7.3 Distribution of Consumer Expenditure Among Retail Outlets Types

The tables within this section demonstrate the distribution of consumer expenditure (at consumer prices) through the various types of retail outlets between 1973 and 1977. The figures are mainly extracted from Appendix 2 of the 1979 Report and are based on the estimates originally produced by T Wall and Sons (Ice Cream) Limited for the Commission.

A5.7.3A Comparison of Estimates Provided by Wall's and Glacier on Consumer Expenditure (Value at Consumer Prices) Distribution Among Outlet Types (1976)

Table 63 – Comparison of Estimates Provided by Wall's and Glacier on Consumer Expenditure (Value at Consumer Prices) Distribution Among Outlet Types (1976)

	1976	Notes
	Wall's Estimates	
Entertainment	£9,000,000	
Catering	£29,000,000	
Self Service Supermarkets	£34,000,000	
Freezer Centres	£43,000,000	
Mobiles	£42,000,000	
CTNs and SGSs	£79,000,000	
Seasonal (Outdoor Entertainment)	£17,000,000	
	£253,000,000	1, 2
	1976	
	Glacier's Estimates	
Indoor Entertainment	£9,000,000	
Caterers and Institutions	£34,000,000	
Supermarkets and Department Stores	£25,000,000	
Freezer Centres	£21,000,000	
Mobiles	£42,000,000	
CTNS, General Stores and SGS	£77,000,000	
Outdoor Entertainment	£11,000,000	
	£219,000,000	1, 2

Source: Ice Cream Report (1979, p. 9) paragraph 21

Notes:

(1) Appendix 4 paragraph 12 of the Ice Cream Report (1979) explains the different methods used by Glacier and Wall's in deriving their estimates for market size.

(2) Glacier argued that the estimate provided by Wall's with respect to sales estimates through supermarkets and home freezers centres was too high. In parallel, Wall's claimed that Glacier "seriously underestimated" the growth of the market and the sales of the small scale manufacturers (1979, pp. 168-169, Appendix 4 §12).

A5.7.3B Comparison of Estimates Provided by Wall's and Glacier on Consumer Expenditure Distribution According to Two Broad Retail Market Groups (1976)

Table 64 – Comparison of Estimates Provided by Wall's and Glacier on Consumer Expenditure Distribution

<u>Outlet Type (Wall's Classification):</u>	Wall's Estimates	Trade Category	Traditional	Catering	Grocery	%	Notes
Entertainment	£9,000,000	Traditional	£9,000,000			3.6%	1 to 3
Catering	£29,000,000	Catering		£29,000,000		11.5%	1 to 3
Self Service Supermarkets	£34,000,000	Grocery			£34,000,000	13.4%	1 to 3
Freezer Centres	£43,000,000	Grocery			£43,000,000	17.0%	1 to 3
Mobiles	£42,000,000	Traditional	£42,000,000			16.6%	1 to 3
CTNs and SGSs	£79,000,000	Traditional	£79,000,000			31.2%	1 to 3
Seasonal (Outdoor Entertainment)	£17,000,000	Traditional	£17,000,000			6.7%	1 to 3
	<u>£253,000,000</u>		<u>£147,000,000</u>	<u>£29,000,000</u>	<u>£77,000,000</u>		

<u>Outlet Type (Glacier Classification):</u>	Glacier's Estimates	Trade Category	Traditional	Catering	Grocery	%	Notes
Indoor Entertainment	£9,000,000	Traditional	£9,000,000			4.1%	1 to 3
Caterers and Institutions	£34,000,000	Catering		£34,000,000		15.5%	1 to 3
Supermarkets and Department Stores	£25,000,000	Grocery			£25,000,000	11.4%	1 to 3
Freezer Centres	£21,000,000	Grocery			£21,000,000	9.6%	1 to 3
Mobiles	£42,000,000	Traditional	£42,000,000			19.2%	1 to 3
CTNS, General Stores and SGS	£77,000,000	Traditional	£77,000,000			35.2%	1 to 3
Outdoor Entertainment	£11,000,000	Traditional	£11,000,000			5.0%	1 to 3
	<u>£219,000,000</u>		<u>£139,000,000</u>	<u>£34,000,000</u>	<u>£46,000,000</u>		

Source:

Ice Cream Report (1979, p. 9) paragraphs 19 and 21. See also Appendix 2.

Notes:

(1) Paragraph 19 of the Ice Cream Report (1979, p. 8) provides an indication of how Wall's classified the retail market in two broad segments for the purpose of analysing retail trade rather than as a basis of market segmentation. The table below describes the manner in which Wall's categorised the various retail outlets. On the basis of these groupings it is possible to draw a rough indication of the size of the groups at consumer prices. (According to the Commission, Net Sales Value was a more appropriate indication of the relative position of the national manufacturers than Sales by Volume or Sales at Consumer Prices (see the Ice Cream Report (1979, p. 21, §50)). The original classification used by Wall's did not include the Catering Trade. Here the segment is represented accordingly.

(2) Paragraph 21 of the Ice Cream Report (1979, p. 8) notes that estimate of the Grocery Trade derived by Wall's is significantly higher to that derived by Glacier.

(3) The Commission does not perform this analysis.

Table 65 – Comparison of Estimates Provided by Wall’s and Glacier on Consumer Expenditure Distribution According to Two Broad Retail Market Groups (1976)

Retail Market Group:	Wall's Estimates (1976)		Glacier's Estimates (1976)	
		%		%
Traditional Trade	£147,000,000	58.1%	£139,000,000	63.5%
Catering	£29,000,000	11.5%	£34,000,000	15.5%
Grocery Trade	£77,000,000	30.4%	£46,000,000	21.0%
Total Market Size at Consumer Prices	<u>£253,000,000</u>		<u>£219,000,000</u>	

Source: Section A5.7.3B

Table 66 – Comparison of Market Valuation by Retail Segments (1976)

	Wall's 1976 Estimates	Glacier 1976 Estimates
CTNs and SGSs	£79,000,000	£77,000,000
Supermarkets and Freezer Centres	£77,000,000	£46,000,000
All Other Retail Outlets	£97,000,000	£96,000,000
	<u>£253,000,000</u>	<u>£219,000,000</u>

Source: Section A5.7.3B

A5.7.3C Distribution of Consumer Expenditure (Value at Consumer Prices) Through Different Types of Outlets (1973 to 1977)

Table 67 – Distribution of Consumer Expenditure (Value at Consumer Prices) Through Different Types of Outlets (1973 to 1977)

Outlet Types:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
CTN, SGS, Seasonal Outlets		£56,600,000	£63,300,000	£82,900,000	£96,000,000	£91,000,000	1
Self Service Supermarkets		£12,800,000	£18,200,000	£23,600,000	£34,000,000	£43,000,000	1
Home Freezer Centres		£11,500,000	£18,900,000	£31,300,000	£43,000,000	£44,000,000	1
Entertainment		£6,100,000	£7,300,000	£8,000,000	£9,000,000	£11,000,000	1
Catering		£13,200,000	£15,500,000	£21,400,000	£29,000,000	£33,000,000	1
Mobile Vendors		£20,800,000	£25,800,000	£34,800,000	£42,000,000	£44,000,000	1
		<u>£121,000,000</u>	<u>£149,000,000</u>	<u>£202,000,000</u>	<u>£253,000,000</u>	<u>£266,000,000</u>	1

Source: (1) Ice Cream Report (1979, p. 9) Appendix 2 which relates the estimates that Wall's had provided. Glacier did not provide a similar analysis.

Notes: (1) The Commission notes that it had no basis upon which to verify these estimates. In addition, Glacier took issue with the estimates arguing the difficulty in outlet classification and the risk of a significant degree of statistical error in grossing up data from samples to derive percentage distributions between the different outlet categories (Ice Cream Report (1979, p. 16. §37)).

A5.7.3D Distribution of Consumer Expenditure (Share) Through Different Types of Outlets (1973 to 1977)

Table 68 – Distribution of Consumer Expenditure (Share) Through Different Types of Outlets (1973 to 1977)

Outlet Types:	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
CTN, SGS, Seasonal Outlets		46.8%	42.5%	41.0%	37.9%	34.2%	1
Self Service Supermarkets		10.6%	12.2%	11.7%	13.4%	16.2%	1
Home Freezer Centres		9.5%	12.7%	15.5%	17.0%	16.5%	1
Entertainment		5.0%	4.9%	4.0%	3.6%	4.1%	1
Catering		10.9%	10.4%	10.6%	11.5%	12.4%	1
Mobile Vendors		17.2%	17.3%	17.2%	16.6%	16.5%	1

Source:

Tables in Section A5.7.3C

Notes:

(1) The Commission notes that it had no basis upon which to verify these estimates. In addition, Glacier took issue with the estimates arguing the difficulty in outlet classification and the risk of a significant degree of statistical error in grossing up data from samples to derive percentage distributions between the different outlet categories (Ice Cream Report (1979, p. 16. §37)).

A5.7.3E Consumer Expenditure Distribution According to Two Broad Retail Market Groups (1973 to 1977)

Table 69 – Consumer Expenditure Distribution According to Two Broad Retail Market Groups (1973 to 1977)

Outlet Types:	Consumer Situation:	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
CTNs, SGSs, and Seasonal Outlets	Traditional	£56.60	£63.30	£82.90	£96.00	£91.00	1
Self Service Supermarkets	Grocery	£12.80	£18.20	£23.60	£34.00	£43.00	
Freezer Centres	Grocery	£11.50	£18.90	£31.30	£43.00	£44.00	
Entertainment	Traditional	£6.10	£7.30	£8.00	£9.00	£11.00	
Catering	Catering	£13.20	£15.50	£21.40	£29.00	£33.00	
Mobiles	Traditional	£20.80	£25.80	£34.80	£42.00	£44.00	
		£121.00	£149.00	£202.00	£253.00	£266.00	
							Notes
		1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	1
Traditional Trade		£83.50	£96.40	£125.70	£147.00	£146.00	
Grocery Trade		£24.30	£37.10	£54.90	£77.00	£87.00	
Catering		£13.20	£15.50	£21.40	£29.00	£33.00	
		£121.00	£149.00	£202.00	£253.00	£266.00	
		1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	
Traditional Trade		69.0%	64.7%	62.2%	58.1%	54.9%	
Grocery Trade		20.1%	24.9%	27.2%	30.4%	32.7%	
Catering		10.9%	10.4%	10.6%	11.5%	12.4%	

Sources:

Tables found in Sections A5.7.3B and A5.7.3C

Notes:

(1) Paragraph 19 of the Ice Cream Report (1979, p. 8) provides an indication of how Wall's classified the retail market in two broad segments for the purpose of analysing retail trade rather than as a basis of market segmentation. The table below describes the manner in which Wall's categorised the various retail outlets. On the basis of these groupings it is possible to draw a rough indication of the size of the groups at consumer prices. (According to the Commission, Net Sales Value was a more appropriate indication of the relative position of the national manufacturers than Sales by Volume or Sales at Consumer Prices (see the Ice Cream Report (1979, p. 21, §50)). The original classification used by Wall's did not include the Catering Trade. Here the segment is represented accordingly.

A5.7.3F Consumer Expenditure Distribution According to Whether Outlet is Static or Mobile

Table 70 – Estimated Consumer Expenditure for Static versus Mobile Outlets (1976)

	Wall's Estimates	Glacier's Estimates
Mobile Trade	£42,000,000	£42,000,000
Static Trade	£211,000,000	£177,000,000

Source:

Section A5.7.3A

A5.7.3G Actual and Weather Corrected Sales Indices by Wall's and Glacier (1971 to 1977)

Table 71 – Actual and Weather Corrected Sales Indices by Wall's

	1971	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)	Notes
Actual Sales	100	91	107	96	105	113	103	1
Weather Corrected Sales	100	101	108	104	101	106	104	

Source Paragraph 244 of the Ice Cream Report (1979)

Notes (1) Sales Volume Index 1971 = 100

Table 72 – Actual and Weather Corrected Sales Indices by Glacier

	1971	1972 (B)	1973 (G)	1974 (B)	1975 (G)	1976 (VG)	1977 (B)
Actual Sales		100	130	116	120	119	104
Weather Corrected Sales		100	118	112	104	97	101

Source Paragraph 262 of the Ice Cream Report (1979)

Notes (1) Sales Volume Index 1972 = 100

A5.7.4 Number and Types of Outlets Served by Walls

Table 73 compares the number and types of outlets service by Wall's during 1967 and 1976. Each outlet is categorised by Retail or Wholesale Segment. The classification is based on the evidence presented in the report and in Appendix 5.

Table 73 – The Number and Types of Outlets Served by Wall's (1967 versus 1976)

Type of Outlet	Traditional Segment		Take Home Segment		Catering Segment		Wholesaler Segment	
	1967	1976	1967	1976	1967	1976	1967	1976
CTNs	21,120	17,620						
General Stores and Small Grocers	29,500	16,530						
Seasonal Outlets and Kiosks	4,550	3,490						
Cinemas, theatres, and bingo halls	1,050	870						
Supermarkets			720	5,060				
Home Freezer Centres			0	980				
Institutions			2,930	2,910				
Expensive Restaurants					3,810	3,060		
Economy Restaurants					4,280	2,200		
Canteens					3,370	3,110		
Cash and Carry Stores			0	500				
Wholesalers							0	230
Mobile Vehicles	1,000	1,200						
	57,220	39,710	3,650	9,450	11,460	8,370	0	230

Source: (Monopolies and Mergers Commission 1979, p. 35, §88)

Table 74 – The Number and Categories of Segments Serviced by Wall's (1967 versus 1976)

	1967	1976
Traditional Trade	57,220	39,710
Take Home Retail Trade	3,650	9,450
Catering Trade	11,460	8,370
Wholesale Distribution	0	230

Source: Tables in Section A5.7.4

A5.7.5 Freezer Cabinets Owned by the National and Secondary Manufacturers

Table 75 – Freezer Cabinets Owned by the National and Secondary Manufacturers (1976)

	Number of Cabinets	Percentage of Total
Wall's	59,000	46.8%
Glacier	56,750	45.0%
Five Main Secondary Manufacturers (1)	8,000	6.3%

Notes:
 (1) The 'Five Main Secondary Manufacturers' include Northern Dairies (N. Ireland), Hortons, Pendletons, Creamery Fare, Milk Marketing Board (N. Ireland)

Source: Appendix 9 of the Ice Cream Report (1979, pp. 177-178) and paragraph 235

A5.7.6 Estimates of Glacier Share of Market per Outlet Type

Table 76 – Estimates of Glacier Share of Market per Outlet Type at Consumer Prices

Outlet Types:	1976
Indoor Entertainment	66%
Caterers and Institutions	35%
Supermarkets and Department Stores	25%
Freezer Centres	17%
Mobiles	33%
CTNs, General Stores, Smaller Grocers, Garages, Off Licences, Cash and Carry	39%
Outdoor Entertainment	33%
Total Market Share	34%

Source: The Ice Cream Report (1979, p. 59, §162)

A5.7.7 Secondary Manufacturers

Summarising Appendix 9 of the Ice Cream Report (1979, pp. 177-178), Table 77 presents a comparison of the levels of net sales value of the manufacturers providing information to the Commission for 1976 highlighting whether such manufacturers provided their retail customers with freezer cabinets.

Table 77 – A Comparison of National and Secondary Manufacturers

Name of Company	Net Sales Value of Own Products in 1976	Number of Freezer Cabinets Provided to Retail Customers
T Wall and Sons (Ice Cream) Ltd	£48,100,000	59,000
Glacier Foods Ltd	37,900,000	56,750
Treats Holdings Ltd	4,488,000	Nil
Northern Dairies (Ireland) Ltd	2,110,000	Between 2000 and 4000 cabinets
Ashford Creameries (Worcestershire) Ltd	1,990,000	Under 130 cabinets
Ross Foods Ltd	1,940,000	Under 130 cabinets
Dairy Tops Ltd (Dairy Tops Group)	1,705,000	Nil
William Pendleton and Sons Ltd (Dairy Tops Group)	1,520,000	Between 450 and 1300 cabinets
Creamery Fare Continental Ice Cream Ltd	1,330,000	Between 450 and 1300 cabinets
Hortons Ice Cream Co Ltd	1,230,000	Between 2000 and 4000 cabinets
Milk Marketing Board for Northern Ireland	Between 300,000 and 1,200,000	Between 450 and 1300 cabinets
Alex S Donald Ltd	Between 300,000 and 1,200,000	Between 130 and 450 cabinets
Jeffery's (Cornish Ice Cream) Ltd (Dairy Tops Group)	Between 300,000 and 1,200,000	Nil
Mancuso Bros	Between 300,000 and 1,200,000	Nil
Mor-Isis Products Ltd	Between 300,000 and 1,200,000	Under 130 cabinets
S Reece & Sons Ltd	Between 300,000 and 1,200,000	Nil
Rossi's of London Ltd	Between 300,000 and 1,200,000	Nil
J Thayer & Sons Ltd	Between 300,000 and 1,200,000	Between 130 and 450 cabinets
Windsor Creameries	Between 300,000 and 1,200,000	Under 130 cabinets
Calorval Ltd	Between 50,000 and 300,000	Under 130 cabinets
Camp Bros (Cafe) Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets
Criterion Ices Ltd	Between 50,000 and 300,000	Under 130 cabinets
Ebor Ice Cream Co Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets
The Farmers' Dairies (IOW) Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets
Fifti Ices	Between 50,000 and 300,000	Under 130 cabinets
Franco Ices	Between 50,000 and	Under 130 cabinets

Name of Company	Net Sales Value of Own Products in 1976	Number of Freezer Cabinets Provided to Retail Customers
	300,000	
Giulianotti Bros (Holburn) Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets
Guanaria and Sons Ltd	Between 50,000 and 300,000	Nil
Harvian Frozen Foods Ltd	Between 50,000 and 300,000	Under 130 cabinets
Martins Dairies (Looe) Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets
Meschias Ltd	Between 50,000 and 300,000	Nil
Palatine Food Services Ltd	Between 50,000 and 300,000	Nil
Pastureland Ices Ltd	Between 50,000 and 300,000	Nil
Pollards Confections Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets
G Porrelli and Co Ltd	Between 50,000 and 300,000	Under 130 cabinets
Mark Reay Ltd	Between 50,000 and 300,000	Nil
B Sidoli and Sons Ltd	Between 50,000 and 300,000	Between 130 and 450 cabinets

Source: (Monopolies and Mergers Commission 1979, pp. 177-178)

The following summarises paragraphs 231 to 232 of the Ice Cream Report (1979, pp. 85-88).

Dairy Tops Group

Dairy Tops Group owned Dairy Tops Ltd, founded in 1970, and Jeffrey's (Cornish Ice Cream) Ltd, founded in 1933. Both organizations were involved in the "substantial production of own label products" for leading national retailers and in the marketing of their own brands (Monopolies and Mergers Commission 1979, p. 85).

In 1977 Associated British Foods, a company that had originally exited the ice cream industry in 1962 by selling off Neilsons (Ice Cream & Frozen Foods) Ltd, a substantial manufacturing concern, to JLC, returned to the market through the acquisition of Dairy Tops Group. Associated British Foods also acquired a 40% shareholding in William Pendleton and Sons Ltd. In the same year, Associated set up a frozen foods and ice cream distribution company in partnership with the British Oxygen Company.

Since 1972, the three subsidiaries experienced very rapid expansion of production and sales. Table 78 presents the main product lines of these organizations.

Table 78 – Product Lines and Main Retail Customer Group of Associated British Foods

Organisation	Product Line	Main Customer Group
Dairy Tops Ltd	Mainly concerned with the sales of standard varieties of ice cream in <i>bulk</i> packaging. Produced specialist range of stick confections packaged as multipacks. Bought-in choc ices also packaged as <i>multipacks</i> .	Wholesalers, Home Freezer Centres and Supermarkets. Take-home.
Jeffrey's	Half-litre and smaller <i>dessert</i> packs aimed at the higher end niche of the market.	Mainly national freezer centres and grocery multiples. Some inroads made in other outlet types in Kent.
Pendleton's	Manufacture and distribution of certain <i>confectionery</i> products and <i>bulk</i> freezer packs, <i>family blocks</i> , and <i>catering</i> packs.	Mobile vans, CTNs, small and larger grocery stores located mainly in the North West.

Source: (Monopolies and Mergers Commission 1979, p. 85, §231).

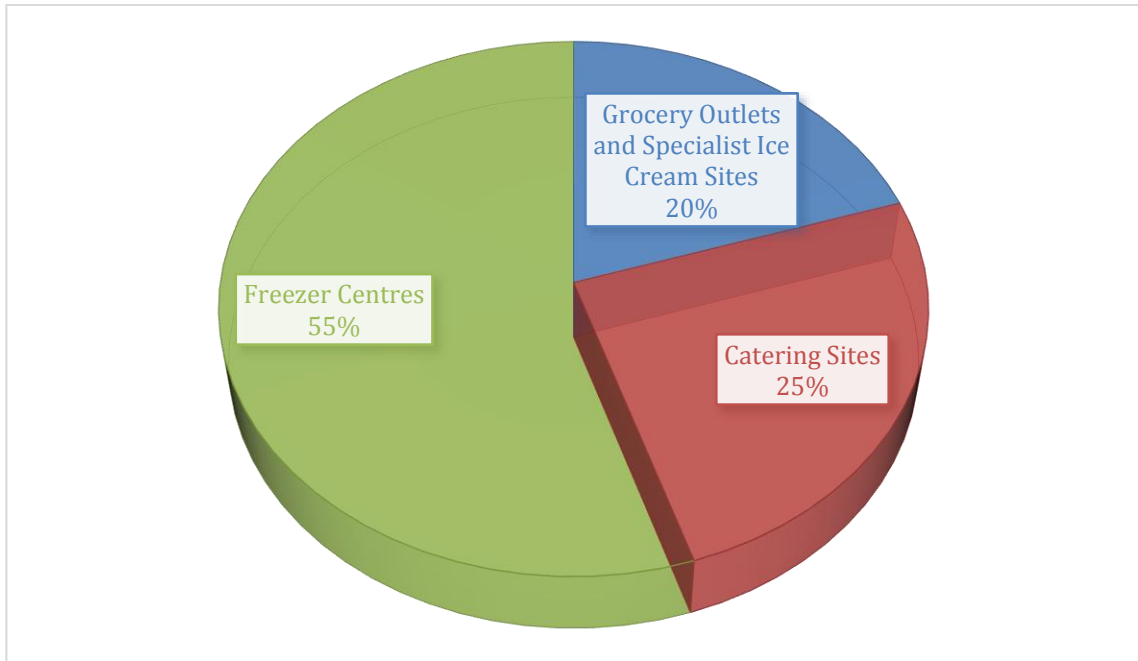
Northern Dairies (Ireland) Limited

Northern Dairies was the largest supplier of ice creams in Northern Ireland although it held a presence in Scotland and the Republic of Ireland. It supplied 1500 grocery stores, 100 major supermarkets, 40 home freezer centres, 1200 CTNs, and 500 catering outlets through a fleet of shop delivery vans departing from depots located within its sphere of operations. The company focused on the manufacture of bulk and dessert items while buying in its requirements of ices and soft mix.

Ashford Creameries

As a subsidiary of the Fiesta Foods Ltd frozen foods group, Ashford experienced significant increases in their sales of ice cream during the 1972 – 1976 period with bulk packs being the main growth area and its products retailing all over the country. Confectionery items such as choc-bars and ice-llollies were bought in. Figure 218 shows the percentage distribution of its sales per outlet type and it should be noted that Ashford had not direct relationships with the CTN trade.

Figure 218 – Distribution of Ice Cream Sales of Ashford Creameries



Source: (Monopolies and Mergers Commission 1979, pp. 86-87, §231)

Ross Foods Ltd

Ross Foods was a wholly owned subsidiary of the second largest supplier of Frozen Foods in the UK (the Imperial Foods Group). However, despite the potential opportunities from rationalisation of some of its operations via other members of the group, for some reason unknown, it did not attain the size and dominance of either Wall's or Glacier. Its main sphere of operations included the Midlands and the North of the UK.

Ross Foods manufactured bulk and dessert lines buying in the requirements for iced lollies. It sold its products mainly to groceries, supermarkets, and catering outlets with minimal CTN trade.

The case of Ross Foods is interesting: although the organisation was a wholly owned subsidiary of the second largest supplier of Frozen Foods in the UK (the Imperial Foods Group) Unfortunately, there is insufficient evidence to draw any conclusions why this could be the case. However,

Creamery Fare Continental Ice Cream Ltd

This company operated mainly in the London and the South Eastern area. It maintained a more extensive range of ice cream products and supplied supermarkets, small retailers, catering establishments, freezer centres, and wholesalers. Creamery Fare has “an exceptionally numerous range of bulk and dessert lines and [had] considerable business with catering outlets as well as in own label production for the national multiple grocery trade” (Monopolies and Mergers Commission 1979, p. 87). The organisation practices freezer exclusivity in smaller restaurants, cafes, and other outlets.

Creamery Fare also managed its own distribution with a fleet of owned vehicles for relatively light deliveries and hired bulk transport. In 1973, the organisation acquired a larger and more modern factory.

Hortons Ice Cream Company Ltd

Hortons expanded during the 1970s as it experienced growth in the demand for its products. Operating several storage depots across South England and its own fleet of vans, Hortons delivered ice cream direct to its customers. These included catering outlets, numerous small retail outlets, mobile vans, freezer centres, and cash and carry and distribution wholesalers in the South and South West. Hortons supplied a wide range of bulk and dessert lines which it manufactured and iced lollies and choc ices which it bought from third parties.

Dayville Limited

Dayville, a subsidiary of the City Hotels Group Ltd, operated a different business model: it held fielded an ice cream parlour franchise selling a common range of 32 American style flavours from bulk containers scooped at each of the 80 points of sale. Turnover amounted to approximately £1.5m of ice cream and associated products⁹⁵⁵.

A5.7.8 Distribution of Net Sales Value of Wall's According to Retail Outlet Type

Table 79 – Distribution of Net Sales Value of Wall's According to Retail Outlet Type

	Walls Net Sales Value	
	%	£
CTNs and SGSs	38.0%	£18,278,000
Seasonal Outlets	7.0%	£3,367,000
Entertainment Outlets	2.0%	£962,000
Mobile	6.2%	£2,982,200
Supermarkets and Freezer Centres	29.0%	£13,949,000
Wholesale Catering and Other Outlets	17.8%	£8,561,800
		<u>£48,100,000</u>

Notes: Net Sales Value of Wall's £48,100,000 (See Section A5.7.1C).

Sources: Paragraph 71 and Footnote 1 to Paragraph 71 of the Ice Cream Report (Monopolies and Mergers Commission 1979).

A5.8 Stakeholders from whom the Commission Gathered Evidence

A5.8.1 Description of Stakeholders

The parties from whom the Commission gathered evidence for its investigation include a wide array of stakeholders in the market: the two main national manufacturers, several secondary manufacturers, retailers, trade and consumer associations, and government departments (Table 80).

Unilever and JLC also competed in a related industry, that of frozen foodstuffs, which was the subject of an investigation by the Commission in 1974 (report published as Monopolies and Mergers Commission 1976). This latter report,

⁹⁵⁵ Refer to the Ice Cream Report (1979, §232).

referred to as the Frozen Foodstuffs Report (1976), was, in part, used by the Commission to supplement the evidence within the Ice Cream Report (1979).

The evidence notes additional sources including an independent history of Unilever⁹⁵⁶, a book relating to the manufacture of ice cream⁹⁵⁷, and related industry statistics generated by the UK government⁹⁵⁸. The evidence collected covered a significant portion of the history of the UK ice cream industry and allowed the authors of the report to draw contrasts between early developments in the period between the 1920s and circa 1969 to those occurring in the 1970s up until 1976.

Table 80 – Industry Stakeholders from whom Commission Gathered Evidence

Stakeholder Type Stakeholder Description	Source Paragraphs
National Manufacturers	
(1) Unilever T. Wall's and Sons (Ice Cream) Limited (Wall's) both on its own behalf, and, on the behalf of those subsidiaries of Unilever involved within the industry, namely, (a) Treats Investments, a wholly owned subsidiary of Unilever, which holds an 85% share in Treat Holdings, which, in turn operates three subsidiaries (Treats Products Ltd of Leeds, Hulley's Dairy Ltd of Sheffield, and Taylors (Bilston) Ltd of Willenhall). Treats trades independently of and competes against Wall's. (b) Wall's-Whippy Ltd, as a wholly owned subsidiary of T. Wall's and Sons that deals with direct retail franchisees.	§3, §283, §58, §130, §126-127
(2) J. Lyons & Company Ltd Lyons Maid Ltd (Lyons Maid) both on its own behalf and on the behalf of those subsidiaries of Glacier Foods Limited (Glacier) involved within the industry. Lyons Maid Ltd (Lyons Maid), a fully owned subsidiary of Glacier, is the major trading company with respect to the ice cream business of the group. It operates and manages the entire ice cream business of Glacier Foods as a single integrated business. Glacier is responsible for managing the ice cream business of J. Lyons & Company Ltd (Lyons) in terms of manufacturing and marketing. Other wholly owned subsidiaries of Glacier that are involved in the manufacture, distribution and sale of ice creams and which acts as nominees and agents of Lyons Maid but not trading on their own account include: Midland Counties Ice Cream Ltd Tonibell Manufacturing Co Ltd, Bertorelli's Ice Cream Ltd, Tastee-Freez Ltd, Mister Softee Ltd, JFN (Mobile) Ltd, Lyons Maid (Mobile) Ltd, Cornish Cream Ice Company (1940) Ltd.	§3, §140
Secondary Manufacturers	§4, §283
The Commission sought evidence from about 250 manufacturers selected at random whose details were constructed from lists obtained from Lyons Main, Wall's, and other sources including published information. The aim was to obtain information from the more important secondary manufacturers. Although there were organisations that did not respond, the Commission did	§229 – §231, see also Appendix 9 of the 1979 report.

⁹⁵⁶ Refer to the Ice Cream Report (1979, §66 fn. 1).

⁹⁵⁷ Refer to the Ice Cream Report (1979, §52 fn. 1).

⁹⁵⁸ Refer to the Ice Cream Report (1979, Appendix 4).

Stakeholder Type Stakeholder Description	Source Paragraphs
not believe that these omissions would have invalidated its conclusions and recommendations. The Commission received detailed responses from (a) 45 Secondary manufacturers varying in size and including medium sized and small producers, and, (b) 47 very small-scale producers. Of these, six manufacturers reached sales revenues of £100,000 plus or were engaged in potentially restrictive practices. These organisations included Dairy Tops (Group) Ltd, Northern Dairies (Ireland) Ltd, Ashford Creameries Ltd, Ross Foods Limited, Creamery Fare Continental Ice Cream Ltd, and, Hortons Ice Cream Company Ltd.	§309, §231
Retailers	§4, §283
33 multiple Confectionery/Tobacconists/Newsagents (CTNs) or CT organisations ten of whom owned some 3000 shops between them.	§297
The Commission conducted a survey among randomly selected independent CTNs sending out 484 questionnaires and obtaining 104 responses.	§299
An unspecified number of national catering firms.	§306
Distributors	
50 large multiple grocery firms including supermarket retailers, freezer centre operators, cash-and-carry stores, general stores and wholesalers of frozen foods.	§300
Representative Associations	§4, §283
The Ice Cream Alliance represents approximately 1,500 member firms directly or indirectly involved in all aspects of the ice cream trade ranging from manufacturing, distribution, catering and so on. The Alliance is regarded within the industry as the voice of smaller ice cream manufacturers and retailers.	§284
The Ice Cream Federation represents 17 of the larger ice cream manufacturers in the UK.	§288
The National Federation of Retail Newsagents represents about 30,000 newsagents most of which retail ice cream.	§289
The Retail Confectioners and Tobacconists Association represents 8000 members who, in turn, own between 10,000 to 12,000 confectionaries and tobacconists most of which retail ice cream.	§291
The Multiple Tobacconists, Confectioners, and Newsagents Group.	§293
The British Hotels Restaurants and Caterers Association and the Cinematograph Exhibitors Association of Great Britain and Ireland.	§294
Co-operative organisations.	§295
The Confederation of British Industries, the Trade Union Congress, and the Consumer Association, and the Transport and General Workers' Union.	§296
Government Departments and Related Bodies	§5, §283
The Ministry of Agriculture, Fisheries, and Food.	§296
24 Local Authorities in various parts of the UK.	§308
Other Organisations	§307

Source: (Monopolies and Mergers Commission 1979)

A5.8.2 Types of Triangulation Recognised in the Report

All the five types of triangulation (Patton 2002; Miles *et al.* 2013) have been recognised as present within the Ice Cream Report (1979) (Table 81).

Table 81 – Types of Triangulation Present in the Ice Cream Report (1979)

Triangulation Method	Examples of Presence in the Report
<p>Methods Triangulation: “Checking out the consistency of findings generated by different data collection methods” (Patton 2002, p. 556).</p> <p>Sources Triangulation “Checking out the consistency of different data sources within the same method” (Patton 2002, p. 556).</p>	<p>Apparent in instances where certain quantitative data are questioned as to their validity and whether these reflect the true state of the market (e.g., issues of market size given by various manufacturers). In paragraphs 15 and 21 and in Appendix 4 of the 1979 Report (pp. 165-171), for example, the Commission describes the relative difficulty it encountered in estimating total sales of ice cream, market size, shares and related trends because of the relatively large number of small manufacturers in the industry and differences in the sources and methods used by manufacturers in generating data. It is interesting to note that in most cases the estimates provided by Wall’s were always at least 11% higher than those provided by Lyons Maid. Briefly, the Commission relied on three main sources of quantitative evidence: (a) data collected by the Business Statistics Office on individual companies under the Statistics of Trade Act (1947) and published in the <i>Business Monitor</i>; (b) data obtained from Wall’s and Lyons Maid who use different methods in calculating their own estimates of market size; and, (c) data obtained from other manufacturers. Paragraphs 13 and 14 of the Appendix 4 of the 1979 Report provide significant insights into the considerations made by the Commission on calculating the relevant indicators to accomplish its task in the public interest. Most importantly, the measures taken by the Commission to calculate size and share figures denote the extent of triangulation efforts of the investigators. (Chapters 6 to 8 and Appendix 4 of the Ice Cream Report further discuss the problems encountered by the Commission in deriving realistic and proper market estimates and indicators.)</p> <p>Sources triangulation is also apparent in the range of methods (e.g., written reports, telephone surveys, archival evidence from manufacturers and third parties, formal hearings, surveys etc.) and in the multiple sources of evidence (e.g., views of manufacturers, retailers, distributors, representative organizations (e.g., National Federation of Retail Newsagents, the Consumer Association), and others) used by the investigators to compile the reports.</p>
<p>Analyst Triangulation: “Using multiple analysts to review findings” (Patton 2002, p. 556).</p>	<p>Apparent in the number of different analysts and investigators needed to compile the evidence and produce the report. Instances of disagreement among investigators and analysts are noted.</p>

Triangulation Method	Examples of Presence in the Report
<p>Theoretical or Perspective Triangulation: “Using multiple perspectives or theories to interpret the data” (Patton 2002, p. 556).</p>	<p>Apparent in that the legal, economic, and social policy implications are always considered.</p> <p>This form of triangulation is also apparent in the procedures of the Commission. The Commission appears to communicate its provisional findings prior to the completion of the report. Organisations that are found to be in possible breach of the relevant sections at law are informed of the relevant breaches and are allowed to make formal submissions in writing and/or during hearings. Hearings are conducted in the presence of legal counsel. The apparent advantage of this process is to collect more evidence and to clarify existing submissions thereby ascertaining whether or not provisional conclusions are correct⁹⁵⁹.</p>
<p>Data type Triangulation: Using both qualitative and quantitative data.</p>	<p>The report contains an extensive range of both qualitative and quantitative data.</p>

Source – Adapted from Patton (2002), Miles *et al.* (2013), and Monopolies and Mergers Commission (1979)

⁹⁵⁹ Vella and Foxall (2011) point out that such communications by the Commission may already set the occasion for those organisations being investigated to alter their behaviour patterns before the investigation is concluded. This would be a source of bias. However, there does not seem to be any other manner in which the Commission may collect further evidence to ascertain whether there actually is a monopoly situation in the market that corresponds to the definition found in the law.

A5.9 Summarising the Views of Interested Parties with Respect to Freezer and Outlet Exclusivity

The Ice Cream Report (1979) summarises the views of a wide variety of parties who have vested interest in the ice cream industry. These parties include businesses, consumer associations, trade bodies, and government departments among others. Taken together these views provide an overview of the general insights to the issues being investigated. The following sections summarise the opinions of the various parties associated with retailers with respect to freezer and outlet exclusivity.

A5.9.1 Views of Interested Parties Summarised in the 1979 Report

Table 82 – Table Summarising the Views of Interested Parties on Freezer and Outlet Exclusivity

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
Trade Organisations			
Ice Cream Alliance (§284-§287)	The Ice Cream Alliance represents approximately 1,500 member firms directly or indirectly involved in all aspects of the ice cream trade ranging from manufacturing, distribution, catering and so on. The Alliance is regarded within the industry as the voice of smaller ice cream manufacturers and retailers (§284).	<p>In favour of freezer exclusivity when freezers are supplied by parties other than the retailer.</p> <p>The Alliance argued that the provision of freezer cabinets by manufacturers would cease to be profitable if retailers used the cabinets for the storage and display of competing ice cream brands. The Alliance claimed that it do not know of any manufacturer who did not presume the exclusive use of freezer cabinets provided (§285).</p> <p>Most retailers either could not afford or refused to finance their own freezer cabinets. The Alliance claimed that without the provision of freezers by manufacturers, retailers would cease supply ice creams and many ice cream retail outlets would be lost (§285). The Alliance, however, did not provide any indication with respect to the number or percentage of retailers who would actually cease selling ice creams.</p> <p>In addition, the Alliance argued that retailers were compelled to use freezers dedicated to ice cream for hygiene and quality purposes (§285).</p> <p>See also the claims made by the Multiple Confectioners, Tobacconists, and Newsagents</p>	<p>Against outlet exclusivity unless the retailer was an outlet that mainly in ice cream or was easily identified as being tied to a particular supplier through advertising and branded appearance.</p> <p>The Alliance was especially concerned by the situation where the legal enforceability of an outlet exclusivity contract, months-long termination notices prescribed in such agreements, and, the aversive consequences of non-compliance (regulatory informational punishers) precluded retailers from turning to other manufacturers in times where the majors were unable to keep retailers well stocked to meet exceptionally high demand. Smaller manufacturers appeared to retain greater flexibility in this respect (§89-99, §182-189, §285-286) (See Note 1).</p> <p>In addition, outlet exclusivity was opposed by the Alliance because some companies associated with the major manufacturers could sell rebranded versions of the main ice cream brands at a much lower price and at substantially better discounts. This created unfair competition (§286).</p> <p>The Alliance also argued that such exclusivity</p>

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		below.	arrangements created effective barriers to the smaller manufacturers precluding them from access to the retail shops dominated by the major ice manufacturers (§286).
The Ice Cream Federation (§288)	The Ice Cream Federation represents 17 of the larger ice cream manufacturers in the UK.	Did not express an opinion on the issue.	Did not express an opinion on the issue.
National Federation of Retail Newsagents (§289)	The National Federation of Retail Newsagents represents about 30,000 newsagents most of which retail ice cream.	<p>In favour of freezer exclusivity when freezers are supplied by parties other than the retailer.</p> <p>The Federation claimed freezer exclusivity to be a fair practice when the freezer was supplied and maintained by the manufacturer (thereby constituting a saving to retailers) although it argued that both retailers and consumers would benefit if the slow selling product lines by the main manufacturer imposing exclusivity within a given retail location could be replaced by the best-selling lines of rivals (§289).</p>	<p>Not necessarily in favour of outlet exclusivity</p> <p>The Federation accepted short-term (e.g., six months) outlet exclusivity arrangements but called long term contracts (e.g., three years) as “punitive” (Monopolies and Mergers Commission 1979, p. 105, §289).</p>
The Retail Confectioners and Tobacconists Association (§291-§292)	The Retail Confectioners and Tobacconists Association represents 8000 members who, in turn, own between 10,000 to 12,000 confectionaries and tobacconists most of which retail ice cream.	<p>In favour of freezer exclusivity when freezers are supplied by parties other than the retailer.</p> <p>The Association also claimed freezer exclusivity to be a fair practice but claimed that such a restriction should be waived when the manufacturer could not fulfil supply obligations (§291).</p> <p>The Association made similar comments to the Ice Cream Alliance stating that the retail trade would oppose any measures that precluded manufacturers from supplying freezer cabinets.</p>	<p>Against outlet exclusivity.</p> <p>The Association stated that retailers should not be tied exclusively to a particular manufacturer when such retailers are equipped with their own cabinets. However, the Association did recognize that manufacturers providing point of sale materials to a retailer had the right to request the retailer to clearly indicate and distinguish any other rival ice cream brands (§291).</p> <p>The Association claimed minimum contract</p>

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		<p>The Association claimed that any such move would result in many retailers ceasing to stock ice creams. It claimed that manufacturers were in a far better position to ensure that the cabinets to be installed were the more economic and efficient models available (§291).</p> <p>The Association also stated that it was unclear whether retailers would indeed stock more than a single manufacturer's brands. It opined that the similarity of products, pricing, and margins among rivals was such that compelled retailers to remain 'loyal' to a single supplier (§291).</p> <p>The Association claimed minimum contract duration to be problematic if agreements stipulated a relatively long-term period (e.g., five years) (§292) and inadequate notice of termination.</p>	<p>duration to be problematic if agreements stipulated a relatively long-term period (e.g., five years) (§292) and inadequate notice of termination.</p>
The Multiple Tobacconists, Confectioners and Newsagents Group (§293)		Given the keen competition among manufacturers, the Group did not consider a change in present arrangements was needed.	Given the aggressive competition among manufacturers, the Group did not consider a change in present arrangements was needed.
The British Hotels Restaurants and Caterers Association (§294)		In favour of freezer exclusivity. Satisfied by level of competition among manufacturers.	No comment made on outlet exclusivity. Satisfied by level of competition among manufacturers.
Cinematograph Exhibitors Association of Great Britain and Ireland (§294)		In favour of freezer exclusivity. Satisfied by level of competition among manufacturers.	No comment made on outlet exclusivity. Satisfied by level of competition among manufacturers.
Co-operative Organisations UK		In favour of freezer exclusivity even though recognised as potentially restrictive.	Did not comment on outlet exclusivity.

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
(§295)		<p>Although freezer exclusivity may be considered restrictive, in its absence many smaller retailers would cease to offer ice cream because of an inability to finance the purchase of the equipment and sustain the costs of maintaining it (§295).</p> <p>Even if exclusivity were removed, it seems that retailers would still continue conducting business with a single manufacturer because (a) rival ice cream products were considered to be sufficiently similar that having more than one supplier would mean carrying “duplicate varieties of several suppliers” (Monopolies and Mergers Commission 1979, p. 107, §295), and, (b) they would be able to negotiate better discounts for drops of larger quantities (§295).</p>	<p>Cooperative organisations opined that tied retailers were not precluded from receiving visits from competing suppliers. Better terms could, in effect, be relayed back and original suppliers had to improve their level of service to retain their customers (§295).</p>
Retailers			
Multiple Confectioners, Tobacconists, and Newsagents (§297-§298)	33 multiple CTNs or CTs ten of whom owned some 3000 shops between them.	<p>In favour of freezer exclusivity.</p> <p>All respondents were tied with exclusivity contracts and claimed that the demand of freezer exclusivity by manufacturers was a reasonable provision. An unspecified number of multiples claimed that many retail outlets would cease to operate in the ice cream sector if freezer exclusivity were stopped (§298).</p> <p>The Commission asked an unspecified number of multiple CTNs whether they ever conducted a cost benefit analysis of outright purchase of freezer cabinets instead of tying themselves exclusively with suppliers.</p>	<p>Similar arguments made for and against freezer exclusivity seem to apply.</p>

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		<p>In this respect, the respondents claimed that investment in cabinets was rejected due to (a) the cost of the equipment itself. The CTNs believed that manufacturers were better poised to source the cabinets more economically and expertly.</p> <p>(b) The cost of maintaining the equipment.</p> <p>It should be noted that Glacier and Wall's had an installed freezer cabinet base of 56,750 and 59,000 by 1978. Moreover, Unilever and Glacier jointly owned a company the primary purpose of which was to supply, install and service freezer cabinets to those outlets tied to either Wall's or Lyons Maid (see Chapter 4 of the 1979 Report especially paragraphs §212, §219-§221). The other manufacturers had a significantly lower number of installed freezers: 2 manufacturers held between 2,000 and 4000 cabinets each, 3 manufacturers held between 450 and 1,300 cabinets, 9 manufacturers held between 130 and 450 cabinets, and 10 had below 130 cabinets by 1976/1977. Treats did not have any cabinets installed (Appendix 9 of the 1979 Report).</p> <p>(c) The cost of prompt and reliable equipment repair and replacement especially during periods of high demand (§298).</p> <p>(d) The CTNs remarked on the relatively low contribution to turnover generated by ice cream sales in any individual store (§297-§298) which</p>	

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		<p>would not justify the expense incurred in owning and running freezers.</p> <p>Other evidence suggests that average ice cream revenues for the more prominent retailer segment, that of CTNs, accounted for only 1% to 2% of their total turnover (§17, §297). Indeed Wall's claimed that the average value of sales to CTNs stood at £530 in 1977 (§17 fn1).</p> <p>(e) Multiple CTNs also claimed that for any single store, the presence of rival brands was not economical and increased the costs of operation by attending to such issues as having additional price lists, point of purchase displays, sales rep visits and so on. The presence of rival brands was claimed to have no appreciable increasing effect on sales revenues (§298).</p> <p>(f) Further, only an unspecified few of multiple CTNs claimed that they considered the products of Wall's and Glacier to be appreciably different in the range on offer. The main factors influencing consumer demand was advertising and marketing promotions (§298). Therefore, claims made by the Ice Cream Alliance, the Retail Confectioners and Tobacconists Association, Cooperative Organizations UK, and others (including Wall's, see §316-319 and Glacier see §358-366) with respect to the possible disappearance of a number of retail outlets from the ice cream sector and the lack of differentiation among the major manufacturers in terms of product ranges appear to be credible given the possible</p>	

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		investment required in a cabinet freezer, the cost of maintaining the freezer, the need for readily available replacements or repair in case of breakdown during peak season, and the volume of sales that have to be generated at going margins to recover such investments within a reasonable period.	
Independent CTNs (§299)	The Commission conducted a survey among randomly selected independent CTNs sending out 484 questionnaires and obtaining 104 responses.	73% of the respondents claimed to be satisfied with exclusivity. 79% of the respondents have exclusivity contracts. 71% claimed that the advantages of freezer exclusivity entailed savings on related capital investment and maintenance costs. Only 25% claimed the restriction on the range of rival brands as a disadvantage of freezer exclusivity (§299).	No comments were made with respect to outlet exclusivity. 82 (79%) of the respondents obtained their supply of ice creams only from either Wall's or Lyons Maid; 8 (8%) from a third supplier, and, the remainder, 14 (13%) from one of the majors and from an additional third supplier (§299). Similar arguments made for and against freezer exclusivity seem to apply.
National Catering Establishments and Entertainment Organisations (§307)		No criticism made.	No criticism made.
Distributors			
Multiple Grocery Distributors (§300-§305)	50 large multiple grocery firms including supermarket retailers, freezer centre operators, cash-and-carry stores, and general stores wholesalers of frozen foods.	Mixed Opinion. One of the more important distributors claimed that as long as the supermarket sector remained under-developed, freezer exclusivity worked for the advantage of industry participants. The main benefit was that retailers would have hesitated to purchase and maintain their own equipment. However, the supermarket segment has now expanded and there was ready availability of suitable small cabinets to the extent that exclusivity was not desirable (§302).	Mixed Opinion. Similar arguments made for and against freezer exclusivity seem to apply.

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		<p>An unspecified number of the more important distributors were against freezer exclusivity and associated implications to their business to the extent that they either were in considering or actually started installing their own freezer base (§302). These distributors did not specify the advantages of not being tied exclusively to one supplier. Presumably, they favoured a wider level of choice at retail for their customers and for consumers in general.</p> <p>On the other hand, several other distributors did not oppose exclusivity claiming that their trade policy dictated serving retailers with a single manufacturer's brand set. The single manufacturer policy was followed for several reasons including, (a) space restrictions at retailer level, (b) removing the retailer's responsibility and expense of purchasing and maintaining freezer cabinets, (c) simplifying order processing and merchandising, (d) encouraging manufacturers to assume a more active role in maintaining the equipment, in merchandising, and in keeping adequate levels of inventory, (e) since ice cream requires special handling, delivering a single manufacturer's brands reduce per store delivery costs because of larger drop densities, and, (f) volumes purchased from a single manufacturer rather than from a spread of manufacturers occasioned better distribution discounts (§303).</p> <p>This said, however, an unspecified number of multiples did deploy cabinets and seek supply from both Wall's and Lyons Maid. Some of the</p>	

Organisation	Description	Freezer Exclusivity	Outlet Exclusivity
		<p>stores owned by the multiples would be tied exclusively to one supplier and others to the other (§304). The benefits or reasons for this form of arrangement are not clear beyond the nature of consumer demand at retail level and spreading the risk of being tied to a single supplier. Presumably, however, the level of volume discounts obtained under a diversified mix and related benefits were less than having a single supplier.</p> <p>As was the case with multiple CTNs, leading supermarkets claimed to have found little difference in the high quality of the products on offer by Wall's and Lyons Maid. In addition, the products were claimed to be substantially similar in size, weight, and composition (§305).</p>	

Source: Chapter 7 of Monopolies and Mergers Commission (1979)

Notes:

(1) The report does not state whether there are penalty clauses within exclusivity contracts. However, in the case of Wall's, the Commission reports that prevailing company policy was to enforce adherence to the various contractual provisions "in all cases [although] it was rarely necessary for measures beyond explanation and persuasion to be taken since customers accepted the logic of Wall's position" (Monopolies and Mergers Commission 1979, p. 36, §91). Glacier made similar statements claiming that resolution is sought through discussion with retailers and judicial determination is possibly sought only after repeated breaches (Monopolies and Mergers Commission 1979, p. 68, §184). In any case, both Glacier and Wall's had provisions of quick termination in case of breach. Presumably, the negative utilitarian consequences of breach included the loss of utilitarian (e.g., special negotiated discounts) and informational (e.g., long-standing relationship with suppliers, reputation) benefits, which, in turn, might damage business.

It is unclear why informally documented arrangements with the larger of retail customers would appear to preclude retailers from escape-avoiding the punishing effects of stock-outs. Presumably, any form of purchase agreement is legally binding and, thus, enforceable as long as it satisfies the standard legal requirements for contracting. Also, the loss of specially negotiated discounts and related benefits might have been a sufficient deterrent for not breaching established contracts.

A5.10 Qualitative Evidence on Reinforcers and Punishers

A5.10.1 Patterns of Utilitarian and Information Reinforcement

Table 83 – Common and general patterns of Utilitarian Reinforcement shaping and maintaining national manufacturer behaviour

Utilitarian Reinforcers and Punishers			
Positive Reinforcers	Negative Reinforcers	Positive Punishers	Negative Punishers
<p>Increases[†] in consumer demand for specific brands and ice cream in general.</p> <p>Increases in value, volume, and frequency of consumer sales at retail outlet segments and in individual outlets within local, regional, and national spheres of operation.</p> <p>Commensurate increases in sales revenues and volumes value, volume, and frequency of retailer sales at outlet segments and in individual outlets within local, regional, and national spheres of operation. Related reinforcers also include increases in orders, order and drop size, and frequency, and improvements in the number and, more importantly, in the quality of retailers within a given area in terms of product ranges sold.</p>	<p>Decreases[‡] in positive utilitarian punishers. For example, the presence of Unilever’s wholly-owned subsidiary, SPD Ltd (involved in the distribution of frozen foods) and its continued use by Wall’s alleviated the burden and the extent of investing directly in an entirely novel distribution system (Section A5.2 and Section A5.4).</p>	<p>Relatively high levels of capital investment in complex production technology involved in serving the market by adopting a business model of national coverage (Section A5.2)</p> <p>Relatively high levels of capital investment in distribution facilities given the lack of a fully developed third party distribution system (Section A5.2).</p> <p>The costs involved particular to the manufacture of ice cream, i.e., an infrastructure and value chain that kept ice cream at relatively low temperatures from manufacturing facilities to the point of consumer purchase and consumption. The value chain also required refrigerated transport and storage throughout (Section A5.2).</p> <p>Increases in variable and fixed</p>	<p>Decreases in positive utilitarian reinforcers.</p>

Utilitarian Reinforcers and Punishers			
Positive Reinforcers	Negative Reinforcers	Positive Punishers	Negative Punishers
<p>Commensurate increases in volumes distributed and manufactured. Increases and improvements in cash flows and profits.</p>		<p>manufacturing, distribution, and marketing costs, including such items of expenditure as distances travelled by distributors, fuel and energy costs, part-time and full time employment levels, inventory levels, frequency and rates of replenishment below agreed upon or estimated levels, spoilage, costs of the provision of freezer cabinets and point of sale material, advertising, and so on.</p>	
<p>The susceptibility to seasonality and the unpredictability of the weather (Section A5.2): Good summers resulted in increases in many of the positive consequences of the ice cream business including increased sales and profits.</p>		<p>The susceptibility to seasonality and the unpredictability of the weather (Section A5.2):</p> <p>Good summers signified an increase in the costs associated with increased activity in production, distribution, and retailer and consumer marketing. For example, Wall's supplemented its standard production runs with night and weekend shifts to meet the demand generated by exceptional weather conditions.</p> <p>During bad summers there were costs involved in storing any ice cream produced during the season and during off-season months. Both national manufacturers made pre-season estimates and planned production runs accordingly. Thus, both ran the risk of experiencing</p>	

Utilitarian Reinforcers and Punishers			
Positive Reinforcers	Negative Reinforcers	Positive Punishers	Negative Punishers
		<p>shortages of stocks during good summers and excess stocks during bad summers. Stock shortages signified lost revenues and profits. Excess stocks signified the costs arising from spoilage due to the short shelf life of ice cream.</p>	

Table 84 – Common and general patterns of Informational Reinforcement shaping and maintaining national manufacturer behaviour

Informational Reinforcers and Punishers			
Positive Reinforcers	Negative Reinforcers	Positive Punishers	Negative Punishers
<p>Increases in profitability and gains towards economies of scale in manufacturing, distribution (see note 1), marketing to retail and marketing to consumers, related metric used (see note 2), and overall market share and related product category and outlet segment shares (see note 3).</p> <p>Increases in return on capital employed, capital and human resource productivity.</p> <p>Improvements in efficiency and value added indicators.</p> <p>Improvements in the extent of nationwide retail penetration with each and all retailer segments to cover the two main consumer situations, increases in retailer order sizes, frequency, and stock replenishment levels.</p> <p>Increases in the performance of customers and consumers (see note 3).</p> <p>Environmental changes within other industries that favoured the business of the organisation (see note 4).</p>	<p>Decreases in the relative burden of positive utilitarian punishers on business operations.</p> <p>For example, (a) a reduction in the per unit distribution costs (see also note 1); (b) decreases in idle or excess manufacturing capacity; (c) decreases in idle or excess (refrigerated) distribution capacity; (d) decreases in obstacles within the routes to retailer and consumer sales; and, (e) decreases in the general performance of rivals (see note 3).</p>	<p>Increases in negative utilitarian reinforcers: For example, an increase in the per unit distribution cost.</p> <p>Increases in the positive utilitarian punishers.</p> <p>Environmental changes within other industries that favour the business of rival organisation (see note 4).</p> <p>High proportion of fixed overhead with high levels of sales revenues required to break even and register profit (Section A5.2).</p> <p>Ice cream had a relatively short life and off-season periods could not be utilised to build sufficient inventories in anticipation of the higher level of activity typical of the summer months. Thus, off-season, the national manufacturers were faced with significant large and relatively idle spare capacity. As a rule, this factor constrained the scope of the behaviour setting faced by manufacturers. This aversive consequence of the ice cream trade had serious implications on business operations when the effects of unpredictable weather fluctuations</p>	<p>Decreases in positive utilitarian reinforcers. For example, decreases in sales and market share.</p> <p>Decreases in positive utilitarian and informational reinforcers. For example, a decrease in the share of the grocery trade segment (Section A5.2).</p>

Informational Reinforcers and Punishers			
Positive Reinforcers	Negative Reinforcers	Positive Punishers	Negative Punishers
<p>The susceptibility to seasonality and the unpredictability of the weather (Section A5.2):</p> <p>Good summers produced positive effects on the frequency and the rates of sales, order sizes, faster stock turnover, and related improvements in performance metrics including the potential for higher profitability and approaching planned levels of scale economies.</p>		<p>were factored in (Section A5.2).</p> <p>The susceptibility to seasonality and the unpredictability of the weather (Section A5.2): Good summers presented production, inventory, and distribution planning problems with substantial risks of being unable to meet exceptionally high demand from existing stocks and from production runs based on pre-season estimates and existing capacity.</p> <p>Bad summers signalled a significant risk of not breaking even, of registering profits, and of shortfalls between relatively low summer demand on the one hand and accumulated stocks plus production runs based on pre-season estimates and existing capacity on the other.</p>	

Notes
<p>‡ The terms “increases” (or “improvements”) and “decreases” include the presentation and removal (or absence) respectively of consequential stimuli.</p> <p>(1) Achieving distribution economies, for example, involved considering the relative volumes of ice cream distributed to individual retailers including the frequency and size of retailer orders. These factors, in turn, had implications on per unit distribution costs per retailer: Unit costs of distribution per retailer were inversely proportion to the size of the order (the drop size) and directly proportional to the distance the distributor had to travel from the storage facility to the location of the retail storage facility or outlet and the number of retailers within a specific geographic area. Therefore, increases in drop sizes coupled with increases in the quantity and quality of retailers within the sphere of operation close to a cold storage facility informationally reinforced distribution behaviours (the richer utilitarian patterns derived therefrom also reinforced such behaviour).</p> <p>(2) See, for example: (1) Sections A5.2 to A5.4 of Appendix 5 discuss the overall performance of Wall’s, Treats, and Glacier providing an indication of the</p>

Notes

measures used by the organizations to derive positive and negative feedback on their performance, on the level of achievement given their business model, learning history and objective (precurrent behaviour), and on the accuracy of such performance as follows: (a) trading performance including feedback measures for correcting the effects of weather on sales in order to analyse actual sales growth (see the Ice Cream Report (1979) paragraphs 243-244, 254-255, and 261-264 relating to Wall's, Treats, and Glacier respectively); (b) gross profit margins and associated indicators (see the Ice Cream Report (1979) paragraphs 245, 256, and 265 relating to Wall's, Treats, and Glacier respectively); (c) financial targets especially return on average capital employed (see the Ice Cream Report (1979) paragraphs 246-247, 257-258, and 266-268 relating to Wall's, Treats, and Glacier respectively); (d) statements of the sources and applications of funds (see the Ice Cream Report (1979) paragraphs 248-251, 259, and 269 relating to Wall's, Treats, and Glacier respectively); and, (e) operating ratios and related analyses (see the Ice Cream Report (1979) paragraphs 252-253, 260, and 270-273 relating to Wall's, Treats, and Glacier respectively). (2) Appendices 10 to 20 provide related and further metrics used by Wall's, Glacier, and Treats in conducting their business and in assessing their performance, level of achievement and accuracy of performance. (3) Appendices 22 and 23 provide further analyses of the extents to which Wall's and Glacier maintained data about their respective performance in every facet related to the business and studied the data for sources of improvement.

(3) The discussion in Section A5.6.4 of this research demonstrates the type of information collected by the national manufacturers on market size, on the behaviour of rivals within outlet segments and product categories, and on the trends in retail and in consumer demand for ice cream. By inference, the various data and metrics collected and presented by the national manufacturers show that their behaviour was, to an extent, shaped and maintained by feedback on the level of achievement and the accuracy of performance. In addition it should be noted that there existed information exchange agreements between Wall's and Glacier spanning a decade between 1965 and 1975. Until 1969, the firms had a scheme for inter-firm comparisons wherein they exchanged cost, sales, and profitability data. Between 1965 and 1973, the firms exchanged data on the sales turnover of their respective individual lines of branded products. After 1973, the firms only exchanged information on sales volumes of broad product categories. Information exchange meetings were conducted to ensure that the figures were provided on a comparable basis (§62). Taken together this evidence suggests that national manufacturers were informationally reinforced and punished by the accuracy of performance and the level of achievement among its rivals and retail customers.

(4) Section A5.2, for example, describes encroachment of rival secondary manufacturers on an emerging retail segment. This encroachment resulted from a number of factors including developments in wholesale distribution in the associated frozen food industry. Such changes also facilitated improvements in the business of the national manufacturers, such as for example, a wider range of available customers including cash and carry wholesalers and home freezer centres (see also Section A5.4). Therefore, whereas some of these developments functioned as informational punishers (rival encroachment), others functioned as informational reinforcers (expanding the distribution and retail coverage).

A5.10.2 Topography and Function of Reinforced and Punished Practices Emitted by Wall's

Table 85 – Topography and Function of Reinforced and Punished Practices Emitted by Wall's

Repertoire	Topographical description of practices	Function of Behaviour
Market Research	Observation of the performance of others and of the physical contingencies (intelligence gathering and statistical modelling for weather prediction and correction).	Functioned as feedback regulating escape-avoidance behaviours of such aversive events as the unpredictable nature of the weather, declines in consumer demand, variability in demand and long-term negative shifts of purchase and consumption patterns, imperfect information about the market, and imitative efforts by rivals • Functioned as feedback regulating approach behaviours of such events as market opportunities, increases in demand, and long-term positive shifts of purchase, and limited product ranges of rivals.
Intermediation	The construction, maintenance, and expansion of a nationwide retail and distribution network (and the routinization of channel behaviour patterns).	Behaviour that functioned to approach the patterns of reinforcement signalled by and contingent upon trading with existing and new retailers.
Personal Selling	The identification of outlets with potential for selling ice cream (pioneering new retail outlet types, the development of the business of existing retailers, and the canvassing of retail customers with an existing and relatively large volume of ice cream business from rivals.	Behaviour that functioned to approach the patterns of reinforcement signalled by and contingent upon trading with existing and new retailers. Also functioned as escape-avoidance of aversive consequences arising from retailers dealing with competition.
Discriminatory Behaviour	Developed a differential reward system and different types of contracts as characteristic of the retail network agreements. Such a system functioned to reward relatively higher rates of retailer approach and traded business.	Occasioned by differing rates of retailer approach. Functioned to further shape and maintain differing rates of approach and routinization of such approach.
Freezer and Outlet Exclusivity	Freezer and outlet exclusivity as characteristics of retailer contracts signed on a nationwide scale for a relatively long period.	Exclusivity functioned to encourage retailer approach by negatively reinforcing retail behaviour (through the removal of the more important aversive consequences of retailing ice cream) and positively reinforcing retail approach through a differential reward scheme • Exclusivity functioned to stabilise and make more predictable the incidence of patterns of reinforcement contingent upon retailers trading ice cream and consumers purchasing and consuming the product. As such exclusivity functioned as escape-avoidance of uncertainty arising from demand variability and fluctuations in weather (the removal or reduction of positive punisher). In a chained sequence, for example, the

Repertoire	Topographical description of practices	Function of Behaviour
		reduction of uncertainty (punishing discriminative stimulus) occasions more precise planning (R) which, in turn, results in improved performance (+Sr). Exclusivity functioned to barricade outlets from rivalry thereby demonstrating an instance of escape-avoidance from the aversive consequences of encroachment.
Rationalization and Consolidation of Large Scale Operations	Rationalization and consolidation of large-scale production, distribution, and marketing operations.	Behaviour that functioned to escape-avoid the aversive consequences associated with the costs of transacting in the market including production, distribution, retailing, and mass consumer marketing.
Technological and Technical Progressiveness	Technological and technical progressiveness in production and in distribution including modernization, infrastructural replenishment across all spheres of operation.	Behaviour that functioned to escape-avoid the aversive consequences associated with the costs of transacting in the market including production, distribution, retailing, and mass consumer marketing • Behaviour also functioned to facilitate the positive consequences with such other behaviours as Intermediation.
Product Development	Product development and the generation of variety and novelty.	Behaviour that functioned to approach the patterns of reinforcement signalled by and contingent upon the mass purchase and consumption of ice cream.
Mass Consumer Marketing	Mass consumer marketing via advertising, ubiquitous, and controlled availability of the product range and brands, comprehensive product ranges and differentiation through distinctive branding and higher level of quality (including routinization of consumer behaviour).	Behaviour that functioned to approach the patterns of reinforcement signalled by and contingent upon the mass purchase and consumption of ice cream.

A5.10.3 Morphological Characteristics of the Consumer Marketing Mix by Wall's and its Advantage Conferring Properties (the Selecting Consequences)

Table 86 – The Morphological Characteristics of the Consumer Marketing Mix by Wall's and its Advantage Conferring Properties (the Selecting Consequences)

Behavioural Repertoire	The Morphological Characteristics of the Consumer Marketing Mix by Wall's and its Advantage Conferring Properties (the Selecting Consequences)
The Consumer Marketing Mix	<p>Mass consumer marketing practices typically conferred relative advantage with respect to the capacity of the entire consumer marketing mix (and its characteristic features) to signal the consumer patterns of reinforcement and punishment matching or exceeding consumer reinforcement criteria. Through the marketing mix and its characteristic features Wall's acquired the capacity to systematically and persistently occasion, shape and maintain consumer approach and purchase of its brands over rival offerings.</p> <p>Between 1922 and 1963 place practices in consumer marketing mix involving direct mutuality plus exchange relations with consumers functioned to shape and maintain consumer approach and directly generate literal exchange that was cost-effective and profitable (the selecting consequence prescribed by the large scale operation rule defined within business model of Wall's). Mutual reinforcement arose from (a) consumer behaviour terminating in literal exchange directly with Wall's (positively reinforcing the place practice and the large scale operation rule) and contributing to profitability (negatively reinforcing the large scale operation rule), and, from the various elements in the marketing mix, for example, product variety, locational convenience, and so which positively and negatively reinforced consumer purchase and consumption given the consumer selective criterion.</p> <p>After the 1940s and right until 1963, Wall's replaced its impracticable tricycle operation with refrigerated vans. The method of transport does not appear to have been the selecting consequence involved: (a) by the 1960s the volume of business had grown exponentially, and (b) the 1960s heralded a decline in consumer and, consequently retailer, demand arising from consecutive bad weather seasons and purchase taxes as well as changing trends in consumer behaviour combined with advancements in the frozen food industry, the proliferation of domestic refrigeration which triggered changes in consumer reinforcement criteria in relation to where consumers shopped (abandonment of the traditional trade retail outlets in favour of larger one stop shopping offered by the grocery trade segments), and the emerging salience of the take-home market. Given the rules defined in the business model orientated around large scale operations and scale economies, direct mutuality plus exchange relations with consumers were a less cost effective means to achieve profitability (the selective consequence, the punisher, signalled by the business model).</p> <p>Thus, direct mutuality exchange relations with consumers were selectively eliminated from the repertoire of Wall's</p>

Behavioural Repertoire	The Morphological Characteristics of the Consumer Marketing Mix by Wall's and its Advantage Conferring Properties (the Selecting Consequences)
	<p>(and transferred to the repertoire of Wall's Whippy which, in turn, replaced the model with franchising for similar reasons) and were replaced by mutuality only relations. To be more precise, it was the direct literal exchange portion of the relationship that was selectively eliminated from the relationship with Wall's. The selecting consequences were the punishing effects of operating this portion rather than the mode of transport per se.</p> <p>Between 1922 and 1977: Distinctive branding, advertising, premium pricing, market leadership, and product quality as characteristic morphological (form and/or structure) features of the product and promotion elements of the marketing mix functioned to distinguish Wall's products from those offered by all other rivals and to regulate consumer approach by providing feedback (as informational reinforcers) on the performance of the product with respect to satisfying particular consumer selective criteria in relation to other ice cream brands and non-ice cream (imperfect) substitutes. These features evolved over the years and retained identical function throughout.</p> <p>Between 1922 and 1975: Freezer and outlet exclusivity (as a characteristic morphological feature of the consumer marketing mix) functioned to channel consumer traffic within a particular store rendering the consumer behaviour setting scope relatively closed depending upon the existence of imperfect substitutes and consumer selective criteria (the selecting consequences). The selecting consequences relate to what appears to have been happening in any single outlet: Vella and Foxall (2011) report that consumers would tend to purchase alternative brands and products of ice cream available at a single store rather than visit alternative stores if their preferred brand was not available.</p> <p>Across the entire history covered in the report, product lines and ranges functioned to provide feedback (as informational reinforcers) on the number of alternative ways to obtain reinforcement contingent upon the purchase and consumption of ice cream (and imperfect substitutes). It appears that novelty, variety, and comprehensiveness of products was a particular feature that conferred advantage because variety is a primary reinforcer of human behaviour (Foxall 1990, p. 42). Novelty also functioned to broaden consumer behaviour setting scope offering a new alternative route to relative patterns of reinforcement contingent upon purchase and consumption of the heavily contested impulse confectionery product class. Premium products appeared as satisfying some of the reinforcement criteria of adult consumers. (By 2000 an entire market segment was formed around this product (Vella and Foxall 2011). The product was introduced by Wall's although Bertorelli's (acquired by Glacier in the 1960s) had a similar premium dessert product.)</p> <p>The type of outlet as a feature of place strategies also appeared to have confer advantage: outlets functioned to signal product availability and prime the learning history of consumers to encourage the formation of consumer situations (impulse and/r or take-home) thereby generating approach and ultimately terminating in literal exchange at retail.</p>

A5.11 The History of J Lyons & Co and Contributions to the Ice Cream Trade

JLC had different origins to Wall's and started out as a catering company incorporating as a public company in 1894 and with an established head office and food manufacturing facilities in Cadby Hall (Hammersmith, London). At the turn of the 20th century, JLC expanded through establishing a chain of corner houses, teashops, and restaurants (Greater London Record Office 1995). The manufacture of ice cream began in Cadby Hall in the 1920s to service its chain of teashops and, later, retail outlets. By 1926, JLC set up an ice cream wholesaling business to sell the ice cream it manufactured to a variety of retail outlets (predominantly CTNs) across the country and to which it provided free refrigerated cabinets in exchange for exclusive patronage⁹⁶⁰. By 1976, JLC brands (Figure 219) were available in 55,000 retail stores in all the retail segments and through 2,800 mobile vans⁹⁶¹.

Figure 219 – Overview of Brands owned by J Lyons and Company

<p>Lyons Maid The Lyons Maid brand is the principal brand promoted and distributed nationwide (§141). These brands contribute significantly to JLC sales (§163).</p> <p><i>Special purpose brands include:</i></p> <p>Midland Counties The Midland Counties repertoire was retained for the local brand equity built by Midland Counties Dairies Ltd for ice cream and water products (§141). Includes both soft mix and hardened ice creams (§163).</p> <p>These brands contribute significantly to JLC sales and together with Lyons Maid provide the predominant share to sales volumes (§163).</p> <p>Bertorelli Distinctively high quality products and more expensively priced special deserts (§141, §163).</p> <p>Tonibell Soft and hard ice cream for mobile sales (§141) either as dessert and impulse in hand items (§163).</p> <p>Tastee-Freez Soft ice cream for sale in static outlets (§141, §163).</p> <p>Mister Softee Soft ice cream for mobile sales (§141, §163).</p> <p><i>Source: Monopolies and Mergers Commission (1979, §141, §163-165, Appendix 1)</i></p>
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Four important features stand out from the history of JLC within the ice cream trade in contrast to that of Wall's: First, by 1976 JLC ended up with 365 product

⁹⁶⁰ Refer to the Ice Cream Report (1979, §143).

⁹⁶¹ Refer to the Ice Cream Report (1979, §141).

lines (down from 434 in 1974) which was considerably greater than the lines maintained by Wall's, Treats, and other suppliers⁹⁶². This wide range of products was inherited through the various mergers and acquisitions made over the years. Although consumers prized variety and comprehensiveness, Glacier sales were always below those of Wall's and reading through the history as presented by the Commission one gets the impression that the organisation was always in second place following (but not necessarily tailgating) Wall's. Indeed after 1973 when Glacier reached the highest peak in its sales volume, the organisation was unable to take advantage of the very good seasons in 1975 and 1976: in 1975 industrial action resulted in Glacier's brands being displaced by other brands within various distribution depots and in 1976 customers reacted negatively to price hikes which made Glacier's brands more expensive than those of Wall's⁹⁶³. Moreover, the company failed to develop its bulk ice cream business between 1972 and 1976⁹⁶⁴, a period that was characterised by a growth trend in the product category⁹⁶⁵.

Second, JLC did not establish a national brand of any equivalent standing to those of Wall's until the early 1960s with two important acquisitions (Eldorado and Neilsons)⁹⁶⁶.

Third, JLC's ice cream business did not perform as well as Wall's. For example, with respect to Return on Capital Employed, Glacier's performance was below the level of an average company in food manufacturing in 3 of the six years between 1972 and 1977 and always below that of Wall's. The Total Average Return on Capital Employed (1972 to 1977) of Glacier was both below that of the average company in food manufacturing (13.2% versus 17.0%) and that average return of Wall's (13.2% versus 20.9%). See for example, Table 87⁹⁶⁷.

Table 87 – Comparison of Return on Capital Employed (1972 to 1977)

	1972	1973	1974	1975	1976	1977	Total Average Return (1972 to 1977)
Average Company in Food Manufacturing	16%	16%	16%	17%	20%	17%	17.0%
Glacier	10.4%	18.0%	4.0%	22.2%	23.1%	1.5%	13.2%
Wall's	14.4%	21.1%	8.3%	27.9%	34.4%	19.2%	20.9%

Source – Section A5.7.11

Fourth, expansion and growth occurred through a series of mergers and acquisitions.

⁹⁶² Refer to the Ice Cream Report (1979, §165 fn.1). See, in particular, the tabulated comparison of the number of product lines held by Wall's, JLC, and Treats in Section A5.3.4.

⁹⁶³ Refer to the Ice Cream Report (1979, §263).

⁹⁶⁴ Refer to the Ice Cream Report (1979, §161, §264).

⁹⁶⁵ In similar fashion to Wall's, JLC was largely responsible for distributing its products directly through retailers providing exclusive cabinets.

⁹⁶⁶ Refer to the Ice Cream Report (1979, §29).

⁹⁶⁷ Refer to footnote 502 on page 466 for interpretation of key performance metrics as informational stimuli.

The following provides an overview of the various stages of growth and mergers and acquisitions by JLC⁹⁶⁸. Glacier claimed that all these strategic moves and developments were occasioned by the favourable consequences (both in terms of cost saving and increases in sales) inherent to expansion and to the rationalisation of its range of brands, its manufacturing facilities, its resources of cold storage and distribution, and in providing/acquiring specialist expertise⁹⁶⁹. It is also clear from the evidence that JLC pegged its overall performance in relation to Wall's to the extent that on at least two occasions acquisitions and mergers were, in part, clearly motivated by the relative differences in size and market shares.

Immediately after the War, JLC recommenced ice cream manufacturing and supply. In 1947 JLC acquired the ice cream business of Walker Dairies Limited (Liverpool), which was a substantial manufacturer in the area. Subsequently, in 1951 and in 1954, JLC acquired Glacier Foods Limited (Maidenhead), a manufacturer involved in the production of ice-lollies, and the ice cream business of Massarellas Supplies Limited (Doncaster) respectively⁹⁷⁰. By 1957, JLC closed down the production facilities at Maidenhead and Doncaster. Production of ice cream was concentrated in the Liverpool factory and in a new factory established at Bridge Park, Middlesex. The latter factory was extended gradually as demand grew⁹⁷¹. The Commission does not specify whether any of the brands of the three companies were maintained. It is probable that the reason for acquisition was to acquire the brands of the three firms and, therefore, buy market share given that the production locations were closed down. Presumably, the brand repertoires of these firms would have been co-branded under the Lyons Maid brand. The evidence on the number of product lines maintained by JLC⁹⁷² suggests that this is probably the case. In addition, and as shall be seen, upon acquiring two large brand repertoires (Eldorado and Neilsons), JLC integrated the acquired brands under the Lyons Maid label⁹⁷³.

In 1959, JLC acquired exclusive rights to manufacture and distribute soft ice cream brands "Mister Softee" (from Mister Softee International Limited, to be sold only through mobile vans) and "Tastee-Freez" (from Tastee-Freez International Inc., to be sold in static sites only)⁹⁷⁴. It appears that JLC set up two individual subsidiary companies to manage these businesses⁹⁷⁵. By the end of the 1950s, two other major brands existed as its principal rivals, Wall's and Eldorado. Eldorado Ice Cream Company Limited, a subsidiary of Union International Limited (UIL), owned the latter brand⁹⁷⁶.

The spate of acquisitions continued in 1962 when JLC acquired Neilson (Ice Cream & Frozen Foods) Ltd from Associated British Foods. Neilsons was established in the early 1950s and had grown to be a substantial manufacturer

⁹⁶⁸ In conjunction with this analysis, see also the Ice Cream Report (1979, §350).

⁹⁶⁹ Refer to the Ice Cream Report (1979, §148).

⁹⁷⁰ Refer to the Ice Cream Report (1979, §144). Massarellas was a relatively large manufacturer of ice cream.

⁹⁷¹ Refer to the Ice Cream Report (1979, §144).

⁹⁷² Refer to the Ice Cream Report (1979, §63-165).

⁹⁷³ Refer to the Ice Cream Report (1979, §63-165).

⁹⁷⁴ Refer to the Ice Cream Report (1979, §145).

⁹⁷⁵ Refer to the Ice Cream Report (1979, §140).

⁹⁷⁶ Refer to the Ice Cream Report (1979, §144).

by the early 1960s. Associated sold its interest as it exited the ice cream industry⁹⁷⁷.

In early 1963 JLC merged with Eldorado in the following manner: JLC reactivated the dormant Glacier Foods Limited. Glacier acquired the ice cream business of JLC (including Neilsons) and Eldorado Ice Cream Company Limited (owned by UIL). Neilsons was renamed to Lyons Maid Limited. In turn, Lyons Maid became the major operating company of JLC acquiring also the ice cream assets of Glacier⁹⁷⁸. JLC claimed that these mergers were occasioned by two considerations: (a) both Eldorado and Neilson had grown substantially in size because of over-optimistic estimates of the growth potential of the ice cream market. Substantial surplus capacity was created in the industry when sales fell in the 1960s⁹⁷⁹ due to several years of bad weather⁹⁸⁰. (b) The potential aversive consequences resulting from an unmatched and unassailable dominance of Wall's in the market if the merger of the three organizations did not proceed⁹⁸¹.

An operant interpretation suggests that a number of stimulus events achieved motivational function. Despite its history of growth by following a strategy of acquisition and mergers, JLC did not have a national brand of equivalent standing relative to Wall's until the 1960s. Until then, therefore, given its business model oriented towards benefiting from the mass consumption of ice cream via large-scale production, distribution, retailing and consumer marketing operations, Glacier may have experienced a recurring state of deprivation: environmental conditions were such that in relation to Wall's the full benefits of large-scale operations were not forthcoming. Between 1962 and 1963, JLC merged with Nielson (Ice Cream & Frozen Foods) Ltd and Eldorado Ice Cream Company respectively. Neilsons was established in the early 1950s and had grown to be a substantial manufacturer by the early 1960s. Eldorado, on the other hand, was established before WWII and, like Wall's, had grown to become one of the main competitors of JLC in the ice cream trade. Eldorado had also grown substantially in its production capacity. Both Nielson and Eldorado appeared to have anticipated further potential in the ice cream market extending the growth experienced during the 1950s. However, the downturn in demand in the early 1960s, due to successive bad seasons and the imposition of a purchase tax by government on ice cream⁹⁸², resulted in both firms being faced with surplus capacity. Under normal circumstances, the presence of excess capacity and a new repertoire of national level brands by virtue of the history of JLC and its plans for further expansion and rationalisation (precurrent regulatory (informational) stimuli signalling the possible positive benefits of growth and said rationalisation), would have signalled the availability of the potential benefits of acquiring the additional capacity and subsuming the brands of Eldorado and Nielson under the Lyons Maid umbrella.

⁹⁷⁷ Refer to the Ice Cream Report (1979, §146). See also Section A5.7.7 subheading Dairy Tops Group.

⁹⁷⁸ Refer to the Ice Cream Report (1979, §148).

⁹⁷⁹ Refer to the Ice Cream Report (1979, §32, §146).

⁹⁸⁰ Refer to the Ice Cream Report (1979, §32)

⁹⁸¹ Refer to the Ice Cream Report (1979, §146).

⁹⁸² Refer to the Ice Cream Report (1979, §32, §146).

However, the state of deprivation of Glacier in conjunction with the potential aversive consequences to the business signalled by the relatively unmatched and increasingly unassailable dominance of Wall's in the market functioned as *establishing operations*. Such potential aversive consequences included reduced utilitarian reinforcers (declines in sales and profits) and reduced informational reinforcers (decline in profitability, market shares, and scale economies (i.e., efficiency) in the various aspects of its operation⁹⁸³).

The *value altering effects* derive from: (1) the increasing effectiveness of Wall's marketing practices in engendering approach and exchange at retail, and, (2) the increasing effectiveness of Wall's marketing and production practices in benefiting from scale economies and market penetration. These improvements in Wall's performance signified a more successful rival in the environment and, thus, the presence of Wall's operated on the environment of JLC as a more salient informational punisher. (3) The state of deprivation of Glacier in conjunction with its expansion plans. The organisation claimed that "a national ice cream brand to compete on nearly equal terms with the dominant Wall's brand was only likely to be established if the separate business of the three next most significant manufacturers [i.e., JLC, Neilsons, and Eldorado] were merged into a single operation more nearly equal in size to that of Wall's" (Monopolies and Mergers Commission 1979, p. 55, §146). The *behaviour altering effect* refers to an increase in the number of acquisitions performed by JLC and intensification of its efforts to rationalise and consolidate its operations.

Three consolidation strategies were adopted as part of this merger operation:

(a) Branding and Coverage: JLC gradually integrated the product lines of the acquired businesses under the Lyons Maid label weeding out slower selling items and replacing them with the faster selling substitute products. The strategy resulted in a strengthening of the Lyons Maid label as a national brand.

(b) Manufacturing: The Eldorado factory was closed down and production was shifted to the existing facilities at Bridge Park, Liverpool, and the newly acquired ex-Neilsons' factory at Barking.

(c) Distribution: In 1963, UIL, JLC, and Associated Fisheries merged their frozen food interests to form Fropax Eskimo Food Ltd to compete on more equal footing with Bird's Eye which dominated the frozen food industry. An existing Glacier subsidiary was renamed Alpine Refrigerated Deliveries and this firm operated a specialist distribution service for Glacier's ice cream business and for Fropax⁹⁸⁴. Through a series of changes Alpine was ultimately jointly owned by JLC and Findus (UK) Limited, a fully owned subsidiary of Nestlé⁹⁸⁵. Figure 148 provides a graphic representation of the highly complex legal and shareholding structure of the Lyons Group of ice cream companies.

⁹⁸³ Refer to footnote 502 on page 466 for interpretation of key performance metrics as informational stimuli. In the present case, a reduction in the quality and quantity of a stimulus event is considered, by definition, as negative.

⁹⁸⁴ Refer the Ice Cream Report (1979, §148).

⁹⁸⁵ Fropax turned out to be a failure and the company merged with the original UK Findus company.

These changes are referred to in the Ice Cream Report (1979, §147-8, §151-152) and explained in greater detail in the Frozen Foodstuffs investigation by Monopolies and Mergers Commission (1976, §187-9).

It should also be noted that in 1964, JLC (51%) and UI (49%) established a company called Lyons Union Limited. Lyons Union owned 79% of Glacier Foods with the remaining 21% held by Associated Fisheries. In 1968, Nestlé purchased 75% of the interest held by AF in Glacier. JLC, through Lyons Union, bought the remaining 25%. In 1970, JLC bought out the interest of UI in Lyons Union and the latter was renamed Lyons Ice Cream Holdings Limited. The shareholding in Glacier Foods thus became 84.6% (JLC) and 15.4% (Nestlé)⁹⁸⁶. In these changes lie the origins of Nestlé's early involvement in the ice cream industry in the UK⁹⁸⁷. As shall be seen, the creation of Alpine marked an important turn in the distribution strategy of JLC for national coverage, which was also supplemented by three additional acquisitions.

Bertorelli's (London) Limited was acquired by Glacier (and renamed to Bertorelli's Ice Cream Limited) in 1965 to broaden its (a) product range with a range of high quality ice cream targeting the upper end of the market served mainly by the catering trade, and, (b) the reach of distribution to all areas of the UK where demand for such a range of products existed. The Tonibell Manufacturing Co Limited was acquired in 1969 for its range of soft and hard ice creams and its retail network of mobile sites, static outlets, and ice cream parlours. The Bertorelli's factory was closed down in the same year and all production shifted to the Tonibell facility. The latter facility and several unprofitable parlours and static outlets were closed by 1975⁹⁸⁸.

In 1973, Glacier acquired Midland Counties Dairies Ltd (located in Birmingham and renamed as Midland Counties Ice Cream Ltd). Midland Counties presented a significant opportunity for the ice cream business of JLC⁹⁸⁹: (a) by the early 1970s Wall's business had grown significantly and its size/dominance was unparalleled. The increasing sales, profitability, market share being gained by Wall's functioned as an informational punishing event of increasing prominence.

This dominance also implied possible further loss of ground in the future. (b) Sales were such that Glacier was severely under-represented in the Midlands (a second utilitarian and informational punisher). The acquisition of Midland Counties would address this problem because of the latter's stronghold in the region. In addition, the addition of Midland Counties signified that the size of Glacier would be closer to that of Wall's. (c) JLC claimed that the aversive consequences of the acquisition related to unsustainable sales relationships originally entered into by Midland Counties in a bid to achieve national coverage⁹⁹⁰. (d) The acquisition marked other important changes: Tonibell and

⁹⁸⁶ Refer to the Ice Cream Report (1979, §152).

⁹⁸⁷ One of the limitations of the Ice Cream Report (1979) is that although it presents evidence with respect to the complex legal and shareholding structure of JLC, it does not provide any particular details on a number of related issues that may have had some form of incidence on the investigation. For example, what problems related to integration did the large number of mergers create? What strains did this create on the flexibility of the organisation to meet consumer demand? What were the effects on rivals? From a legal perspective, why did JLC, upon merger, always create two organisations: a holding company and a subsidiary operating company? Why was there such a marked difference between the complex structure of JLC and the relatively simpler one adopted by Unilever? These questions remain, to a large extent, unanswered.

⁹⁸⁸ Refer to the Ice Cream Report (1979, §149).

⁹⁸⁹ Refer to the Ice Cream Report (1979, §150, §261-264).

⁹⁹⁰ Refer to the Ice Cream Report (1979, §150).

Bertorelli's production facilities would be transferred to the MCIC Birmingham factory. (e) The Midland Counties Brand would remain bringing in some 60 additional product lines⁹⁹¹. (f) The distribution network of Midland Counties would be used to include the distribution of other brands⁹⁹². Given the acquisition was carried through, it would seem that the expected positive consequences of acquisition outweighed the costs involved.

With the establishment of Alpine and the acquisition of Midland Counties, JLC had consolidated a significant distribution network. Paragraphs 182 to 189 of the Ice Cream Report (1979) discuss the distribution arrangements in greater detail, however, a number of salient aspects must be mentioned: First, in similar fashion to the shared distribution services provided by SPD to Wall's and Birds Eye, Alpine distributed frozen foods for Findus (UK) Ltd and most of the Lyons Maid ice cream for JLC. To the extent that Glacier argued that the arrangement ensured that both enjoyed "a specialised distribution system with economies of scale that could not be achieved if each company sought to make its own distribution arrangements" (Monopolies and Mergers Commission 1979, p. 65, §176). Second, both the increased trading volumes within a twelve-year period and significant reductions in capital investments to run those volumes demonstrate the increased prominence of Alpine within the distribution landscape of the ice cream market and its importance to JLC (Table 88). Third, Alpine transported ice cream from factory cold stores to its depots (via bulk vehicles) and then to all types of customers (via non-liveried radial distribution vehicles) including: (a) retailers who had agreements for regular supply of Lyons Maid ice cream (i.e., those under freezer and outlet exclusivity); (b) mobile supply outlets with high turnover; (c) a number of independent distributors who because of their long standing relationship with Glacier functioned as radial distributors in similar fashion to Alpine serving retailers of all types located in parts of Scotland, Wales, and England; and, (d) several wholesalers who served the catering trade and/or retailers did not have regular agreements with Lyons Maid (for example, where retailer order levels were considered uneconomic to deal with directly). In return of these services, Glacier undertook not to use the distribution services of other organisations except in special circumstances⁹⁹³. Clearly, therefore, the strength of retailer approach orientated the manner in which Glacier directed its distribution efforts: The weaker the approach (where retailer's purchases dropped below £50 per annum⁹⁹⁴), the less marketing effort and investment was made by Glacier within the particular bilateral contingency relation. The strongest approach (Alpine as a wholesaler of most of its Lyons Maid products, and retailers with outlet and freezer exclusivity) strengthened the efforts made by Glacier and maintained the practices described above within those set of bilateral contingency relations.

⁹⁹¹ Refer to the Ice Cream Report (1979, §150, §163, 165).

⁹⁹² Refer to the Ice Cream Report (1979, §150).

⁹⁹³ Refer to the Ice Cream Report (1979, §176-178).

⁹⁹⁴ Refer to the Ice Cream Report (1979, §178 fn.1).

Table 88 – Comparison of Rewarding Consequences of using Alpine Refrigerated Deliveries (1964-1976)

1964	1976
£18,000,000 of ice cream and frozen foods delivered (at wholesale value).	£100,000,000 of ice cream and frozen foods delivered (at wholesale value).
144 Centralised Refrigerated Depots.	84 Centralised Refrigerated Depots.
54 Bulk Delivery Vehicles.	54 Bulk Delivery Vehicles.
800+ Radial Distribution Vehicles (Vehicles that distribute products from depot to retail customers. Vehicles not liveried).	485 Radial Distribution Vehicles (Vehicles that distribute products from depot to retail customers. Vehicles not liveried).

Source: (Monopolies and Mergers Commission 1979, §176)

A5.11.1 Glacier's Sales per Retail Segment

Glacier defined its retail segments differently from Wall's⁹⁹⁵ and did not provide a detailed breakdown of its sales per segment (see Section A5.4.1, Appendix 5) as its rival did claiming that it had more confidence in providing global rather than sectorial sales figures⁹⁹⁶. In addition, the estimates of market size and of market and retail segment shares differed between the two firms. Therefore, no completely comparable figures exist for Glacier⁹⁹⁷.

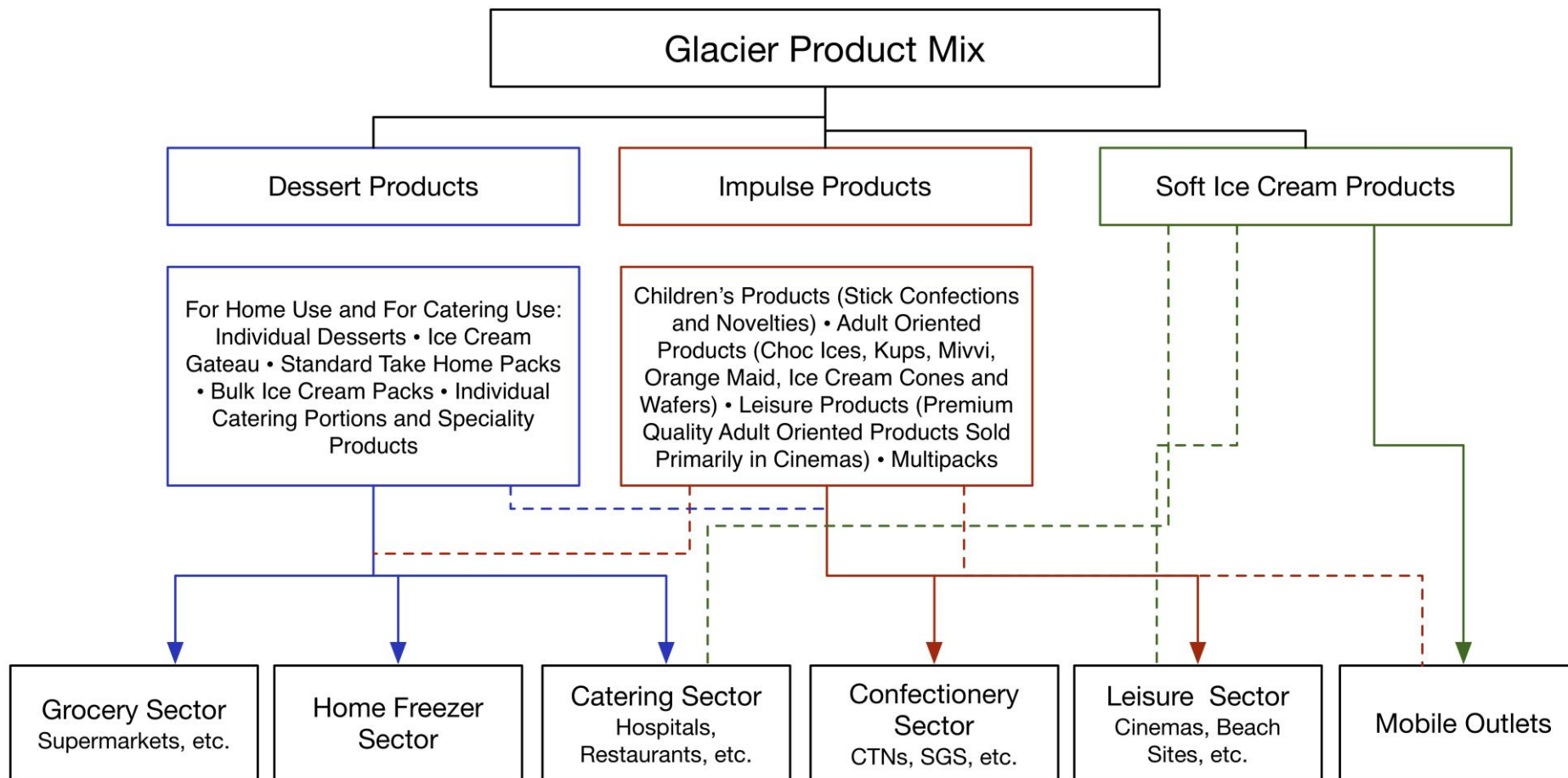
Figure 220 summarises the product flows to the various retail segments of Glacier through its various subsidiaries.

⁹⁹⁵ Refer to the Ice Cream Report (1979, §19).

⁹⁹⁶ Refer to the Ice Cream Report (1979, §162 fn.2).

⁹⁹⁷ It should be noted that generally Wall's provided more details than any of the other organizations. There appears to have been a history of maintaining detailed records and related performance metrics. The level of detail suggests that the behaviour of Wall's was informationally reinforced (and punished) by relatively higher patterns.

Figure 220 – Product Flows to the Various Retail Segments of Glacier Through Its Various Subsidiaries



Source: Monopolies and Mergers Commission (1979, p.174)

Table 89 presents the shares of each segment that Glacier claimed to have held in 1976 based on its own estimates of market size (which are significantly lower than those calculated by Wall's).

On average market share of Glacier had been declining steadily since 1974 despite an exceptionally good summer in 1976. In contrast the mean share of Wall's has remained relatively static tending towards a slight increase for the same period.

Table 89 – Shares of Each Retail Segment Held by Glacier

	Glacier Share of Total Segment	Number of Outlets
Indoor Entertainment (Leisure Sector)	66%	3,500 (16% of Lyons Maid brand sales, largely impulse) (Note 2)
Outdoor Entertainment (Leisure Sector)	33%	
Caterers and Institutions	35%	10,000 (13% of Lyons Maid brand sales) (Note 2)
Supermarkets (Grocery Sector also includes national and regional multiple chains, cooperatives. Voluntary groups and independent grocers)	25%	9,000 (21% of Lyons Maid brand sales, largely take-home)
Freezer Centres	17%	
Mobiles	33%	2,800
CTNs, General Stores, Small Grocers, Garages, Off Licences, Cash and Carry (Confectionery Sector)	39%	25,000 (39% of Lyons Maid brand sales, largely impulse) (Note 2)
Total Market Share	34%	55,000 (Note 1)

Source: (Monopolies and Mergers Commission 1979, §158-161)

Note 1: The Commission reports that Glacier's brands were sold to nearly 55,000 retail outlets (§141). The evidence presented by Glacier, however, is incomplete as the number of outlets it reported per segment only add up to 47,750 outlets (§160-162).

Note 2: Brand shares are calculated at standard wholesale prices.

A5.11.2 Performance Comparisons at a Glance

Section A5.7.1 (Appendix 5), in particular, contrasts the annual sales values and volumes of the three main national manufacturers, their net profits (contrasted to an average company in food manufacturing), and return on capital employed (as a measure of efficiency) between 1972 and 1976. Clearly, Wall's was in a strong leadership position. In addition, the evidence discussed so far indicates that Wall's became a significant reference point (informational stimulus) against which Glacier measured its own performance and moulded its strategy.

The year on year variations are due among other things to the effects weather has on sales of ice cream in the UK. During the poor summers of 1972, 1974, and 1977 the three nationals registered below average sales. The summers of 1973 and 1976 were good while 1976 was an exceptional year. The key informational stimuli, sales values, sales volumes, net profitability, return on sales, and, return on capital employed (including the relative positions vis-à-vis competitors), indicate the weak position of Glacier despite its various efforts. Aside from the vagaries of British summers, 1975 to 1976 appear to have hit

Glacier particularly hard as detailed earlier. Table 90 contrasts the sales growth rates of Wall's and Glacier.

Table 90 – Comparison of Sales Growth Percentages

	Change in Sales 1976/1975	Change in Sales 1977/1976
Wall's	17.9%	1.0%
Glacier	9.9%	-2.1%

Source: Section A5.7.1C

The Commission also provides an indicator of the performance of the average firm in food manufacturing which indicates performance in relation to the average member in the sector and may be also indicative of fitness.

Section A5.7.1E contrasts the market shares achieved by Wall's and Glacier in relation to the rest of the industry. No data relating to earlier periods was available in the Ice Cream Report.

A5.12 Appendix 3 of the Frozen Foodstuffs Report (1976)

The following tables are derived from Appendix 3 of the Frozen Foodstuffs (1976) report published by Commission. These figures were estimates provided to the Commission by Bird's Eye.

Table 91 – The sales to households of the major categories of frozen foods and the major categories of all foods 1964 to 1973

	Vegetables			Fish			Meat			Confectionery and Fruit			Total		
	Frozen	All Vegetables	%Age Frozen	Frozen	All Fish	%Age Frozen	Frozen	All Meat	%Age Frozen	Frozen	All Confectionery and Fruit	%Age Frozen	Frozen	All	%Age Frozen
1964	80,000	6,862,000	1.2%	55,000	454,000	12.1%	23,000	2,657,000	0.9%	6,000	1,176,000	0.5%	164,000	11,149,000	1.5%
1965	82,000	6,926,000	1.2%	57,000	455,000	12.5%	26,000	2,647,000	1.0%	8,000	1,183,000	0.7%	173,000	11,211,000	1.5%
1966	106,000	6,853,000	1.5%	59,000	459,000	12.9%	29,000	2,614,000	1.1%	12,000	1,214,000	1.0%	206,000	11,140,000	1.8%
1967	108,000	6,882,000	1.6%	59,000	460,000	12.8%	35,000	2,648,000	1.3%	12,000	1,189,000	1.0%	214,000	11,179,000	1.9%
1968	125,000	6,912,000	1.8%	67,000	457,000	14.7%	38,000	2,604,000	1.5%	15,000	1,242,000	1.2%	245,000	11,215,000	2.2%
1969	135,000	6,715,000	2.0%	75,000	436,000	17.2%	41,000	2,604,000	1.6%	18,000	1,256,000	1.4%	269,000	11,011,000	2.4%
1970	139,000	7,039,000	2.0%	80,000	429,000	18.6%	41,000	2,684,000	1.5%	21,000	1,246,000	1.7%	281,000	11,398,000	2.5%
1971	149,000	6,855,000	2.2%	73,000	415,000	17.6%	44,000	2,669,000	1.6%	22,000	1,220,000	1.8%	288,000	11,159,000	2.6%
1972	175,000	6,674,000	2.6%	84,000	407,000	20.6%	53,000	2,533,000	2.1%	23,000	1,214,000	1.9%	335,000	10,828,000	3.1%
1973	225,000	6,635,000	3.4%	86,000	383,000	22.5%	60,000	2,411,000	2.5%	29,000	1,323,000	2.2%	400,000	10,752,000	3.7%

Source: (Monopolies and Mergers Commission 1976, p. 98)

Table 92 – The sales to households of Confectionery and Fruit in relation to total food sold 1964 to 1973

	Confectionery and Fruit			Total			% Age of Total	
	Frozen 000s tons	All Confectionery and Fruit 000s tons	% Age Frozen	Frozen 000s tons	All 000s tons	% Age Frozen	% Age Frozen	% Age of All
1964	6,000	1,176,000	0.51%	164,000	11,149,000	1.47%	3.7%	10.5%
1965	8,000	1,183,000	0.68%	173,000	11,211,000	1.54%	4.6%	10.6%
1966	12,000	1,214,000	0.99%	206,000	11,140,000	1.85%	5.8%	10.9%
1967	12,000	1,189,000	1.01%	214,000	11,179,000	1.91%	5.6%	10.6%
1968	15,000	1,242,000	1.21%	245,000	11,215,000	2.18%	6.1%	11.1%
1969	18,000	1,256,000	1.43%	269,000	11,011,000	2.44%	6.7%	11.4%
1970	21,000	1,246,000	1.69%	281,000	11,398,000	2.47%	7.5%	10.9%
1971	22,000	1,220,000	1.80%	288,000	11,159,000	2.58%	7.6%	10.9%
1972	23,000	1,214,000	1.89%	335,000	10,828,000	3.09%	6.9%	11.2%
1973	29,000	1,323,000	2.19%	400,000	10,752,000	3.72%	7.3%	12.3%

Source: (Monopolies and Mergers Commission 1976, p. 98)

A5.13 Timeline of Unilever's Development (1920 – 1980)

The following timeline is reproduced verbatim from articles found in the History Section of the Unilever Website.

1920 – 1929: UNILEVER IS FORMED

But during the decade the margarine market suffers declining demand as butter becomes more affordable.

Before his death in 1925, Lever Brothers founder Lord Leverhulme builds up a private portfolio of companies that include some dealing with produce from his newly acquired estate in Scotland's Western Isles. Many of these, including Mac Fisheries Ltd, will eventually be bought by Lever Brothers.

At the end of the decade alliances reach their ultimate conclusion and the official history of Unilever begins. First, Jurgens and Van den Bergh join together to create Margarine Unie. Then two years later – in one of the largest mergers of its time – Margarine Unie teams up with Lever Brothers to create Unilever.

Highlights:

1920	Lever Brothers gains control of the Niger Company, which later became part of the United Africa Company.
1922	Lever Brothers buys Wall's, a popular sausage company which is beginning to produce ice cream to sell in the summer when demand for sausages falls.
1923	The collapse of the German economy creates even harsher trading conditions for Jurgens and Van den Bergh.
1925	Lever Brothers buys British Oil & Cake Mills, one of its major competitors and the manufacturer of New Pin Soap.
1926	Lever Brothers launches its Clean Hands Campaign. Part of its child health policy, it educates children about dirt and germs and encouraging them to wash their hands 'before breakfast, before dinner and after school.'
1927	Jurgens and Van den Bergh, who have already teamed up with two European businesses, Centra and Schicht, join forces to create Margarine Unie – the Margarine Union. The union quickly gains new members, creating a large group of European businesses involved in the production of almost all goods created from oils and fats. Planters Ltd, a Lever Brothers company, launches the first vitamin-enriched margarine – Viking.
1928	Margarine Unie acquires the French-Dutch Calvé-Delft group with factories in the Netherlands, France, Belgium, and Czechoslovakia. The following year the Union also acquires the firm Hartog's.
1929	On 2 September Lever Brothers and Margarine Unie sign an agreement to create Unilever. The businesses initially aim to negotiate an arrangement to keep out of each other's principal interests of soap and margarine production, but ultimately decide on an amalgamation instead.

1930 – 1939: OVERCOMING CHALLENGES

The 1930s is a tough decade – it starts with the Great Depression and ends with a new world war.

These conditions make the newly merged business's need to rationalise even more urgent. So in the UK Unilever cuts its 50 soap-manufacturing companies to concentrate on fewer brands, while governments in continental Europe protect local butter production through taxes, excise duties, and limits on production. The end result is that Unilever's margarine and edible fat plants are cut from ten to five.

But despite the recession the business continues to expand: partly through the development of new products in its established markets, and partly by acquiring companies to take it into emerging categories like frozen and convenience foods.

Highlights:

1930	On 1 January Unilever is officially established. Procter & Gamble enters the UK market with the acquisition of Thomas Hedley Ltd of Newcastle and becomes one of Unilever's largest rivals.
MID 30S	Soap production moves further from hard soaps to flakes and powders designed to make lighter work of household cleaning. This leads to expansion in the soap market.
1935	Vitamins A & D are added to margarine, to levels equivalent to those found in butter.
1938	After a campaign to improve public perceptions of margarine and the growth of vitamin-enriched brands including Stork in the UK and Blue Band in the Netherlands, sales of margarine rise to levels close to the highs of 1929.
LATE 30S	With the advent of World War II, exchange controls and frozen currencies make international trading increasingly complex. In Germany, Unilever is unable to move profits out of the country and has to invest instead in enterprises unconnected with oils and fats including public utilities.

1940 – 1949: FOCUSING ON LOCAL NEEDS

During the war years Unilever is effectively broken up, with businesses in German and Japanese-occupied territory cut off from London and Rotterdam. This leads to the development of a corporate structure in which local Unilever businesses act with a high level of independence and focus on the needs of local markets.

After the war, Unilever's interests in Eastern Europe are lost with nationalisation and the control exerted by the Soviet Union. The Chinese market is affected in a similar way.

Yet throughout the 1940s Unilever continues to expand in the food market. New businesses with a diverse range of products are acquired, and resources are put into research and development for new materials and production techniques.

Highlights:

1941	During the Blitz, Lifebuoy soap provides a free emergency washing service to Londoners. Lifebuoy vans equipped with hot showers, soap and towels visit bomb-struck areas of the capital to offer much-needed mobile washing facilities.
1943	Unilever becomes the majority shareholder in Frosted Foods which owns Birds Eye and the UK rights to a method of food preservation new to mass markets – deep-freezing. Years later, freezing will enjoy a resurgence of popularity when it's shown to be one of the best ways of naturally preserving the goodness of fresh food. Around the same time Unilever acquires Batchelor's, which specialises in freeze-dried vegetables and canned goods.
1945	At the end of the war, Unilever is able to regain control of its international network although remains shut out from Eastern Europe and China. The decentralisation of the business that was unavoidable during wartime is continued as a policy decision.
1946	Birds Eye launches the first frozen peas in the UK. At this time meat, fish, ice cream, and canned goods account for only 9% of Unilever's total turnover.

1950 – 1959: A POST WAR CONSUMER BOOM

From the late 40s into the 50s the development of new mass markets for consumer goods – including Africa and Asia – provide opportunities for expansion.

Unilever's United Africa Company grows fast, producing goods for sale in the newly independent African states, which helps create new local manufacturing industries. Meanwhile post-war prosperity in Europe, spurred by the start of the European Community, leads to a consumer boom and rising standards of living.

As new scientific advances come thick and fast, Unilever increases its focus on technology, making Port Sunlight Research its Research Division with responsibility for both UK and Dutch laboratories. It also establishes a nutrition research group in the Netherlands which later becomes the Unilever Food and Health Research Institute – a centre of excellence in nutrition.

During the 1950s new types of food – most famously the fish finger – are developed as a direct response to the need for nutritious food that makes use of ingredients available in the wake of post-war rationing. Some of these are then marketed through a promising new channel – commercial TV.

Highlights:

1954	Sunsilk shampoo is launched in the UK and will become our leading shampoo brand – by 1959 it's available in 18 countries worldwide.
1955	On the 22 September Unilever airs the very first advertisement on UK commercial TV, which is for Gibbs SR toothpaste. Fish fingers are introduced in the UK and within a decade they account for 10% of British fish consumption. Dove soap is launched in US.
1956	Unilever Research establishes its Biology Department, which in the 1980s will become the BioScience, Nutrition, and Safety unit. The PG Tips chimps make their debut appearance on the UK's newly launched commercial TV station. Aired on Christmas Day, the commercial is inspired by London Zoo's chimpanzees' tea party. It results in PG Tips becoming the UK's biggest selling tea brand. The first Miss Pears is crowned in the famous Pear's Soap beauty contest celebrating the beauty of natural, clear complexions.
1958	In the Netherlands Unilever expands into frozen foods and ice cream through the acquisition of Vita NV, which was later to become the Iglo Mora Group.
1959	Unilever launches its first margarine in a tub, replacing the traditional block wrapped in greaseproof paper, with Blauband in Germany followed by Flora in Britain.

1960 – 1969: A TIME FOR GROWTH

The Swinging Sixties bring optimism and new ideas as the world economy expands and standards of living continue to rise. As a result Unilever expands and diversifies through innovation and acquisition, setting up advertising agencies, market research companies and packaging businesses. In 1968 it tries to merge with Allied Breweries in a truly ambitious acquisition bid. But maintaining profit stability is difficult as the gap widens between best and worst performing operations, and funds are invested to maintain low-yield businesses.

In the mid-60s, a restructure increases opportunities to grow brands internationally. Control and European profit responsibility for the biggest brands is subsequently moved from individual operating companies to category-focused teams called Co-ordinations.

1970 – 1979: DIVERSIFYING IN A TOUGH CLIMATE

The growth of large retailers including supermarkets also starts a shift in negotiating power away from manufacturers.

So Unilever continues to build consumer goods businesses in sectors including transport and packaging and has a major thrust into North America with the purchase of National Starch. Fortunately the subsidiary United Africa Company yields large profits in oil-booming Nigeria, helping balance out the costs of businesses in Europe and the United States.

But while Unilever continues to diversify in the 1970s, it stops expanding along the supply chain as third party suppliers become larger and better equipped to take over non-core tasks.

1980 – 1989: FOCUSING ON THE CORE

At the start of the 1980s, Unilever is the world's 26th largest business. Its interests include plastics, packaging, tropical plantations and a shipping line, as well as a wide range of foods, home and personal care products.

Early in the decade in a bold change of strategy it decides to refocus on core product areas with strong markets and equally strong growth potential. The necessary rationalisation leads to large acquisitions and equally large divestments, including the sale of animal feeds, packaging, transport, and fish farming businesses.

But by 1989 the resulting growth of core businesses is clearly evident.

A5.14 Retained Sensitivities as Expressed by the Learning History of Wall's

Over its previous 40-year history operating in the market, the practices of Wall's appear to have acquired sensitivity to *the patterns of reinforcement and punishment* signalled by *consequential* stimuli in the behaviour setting and by the extent of relative setting scope stricture therein. The organisation tended to emit behaviour that functioned to *approach* patterns of reinforcement and to *escape-avoid* either declines in the patterns or reinforcement or the appearance/increases in patterns of punishment.

(1) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture when operating its business model under the conditions of **imperfect market information**. Wall's typically emitted market research practices that tended to operate on the environment to improve the availability of more precise and comprehensive information about (a) environmental conditions, (b) the performance of firms (self and others) given these conditions, (c) possible opportunities and threats, and, (d) associated considerations of uncertainty and of environmental complexity (especially understanding the manner in which various contingencies were operating independently, simultaneously, and in combination).

(2) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture arising from the rate and strength of **Retailer Approach** and from the likelihood that such approach terminated in literal exchange. Wall's typically emitted practices that tended to (a) shape, to maintain, and to increase the positive reinforcers and decrease the punishers and (b) counter/benefit from relative degree of setting scope stricture generally associated with retailer approach and literal exchange terminal behaviours. Such emissions included an **intermediation repertoire** comprising personal selling, direct mutuality-plus-exchange relationships with retailers, outlet and freezer exclusivity, and a system of differential rewards that discriminated among different rates of approach among retailers. The pitched unique selling proposition at retail also depended upon the marketing mix emphases with consumers.

(3) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture arising from the rate and strength of **Consumer Approach** and from the likelihood that such approach terminated in literal exchange. Wall's typically emitted practices that tended to (a) shape, to maintain, and to increase the positive reinforcers and decrease the punishers and (b) counter/benefit from relative degree of setting scope stricture generally associated with consumer approach and literal exchange terminal behaviours. Such emissions included a **mass consumer marketing repertoire** that comprised product development, the generation of variety and novelty, an increasing degree of product range

comprehensiveness, distinctive and strong branding (particularly pursuing market leadership and building a brand repertoire with a strong reputation geared around quality and value for money,), strong product quality, advertising and promotional expenditure (e.g., merchandising, point of purchase displays, and so on).

(4) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture when operating its business model under the conditions of **demand variability**. Wall's typically emitted practices that tended to increase the relative stability of reinforcers (sales and profits) or dilute the schedule of punishment⁹⁹⁸ (costs) and counter/benefit from relative degree of setting scope stricture. Such practices included more sophisticated market research techniques to identify opportunities for developing new products, product development, the generation of novelty and variety, product range comprehensiveness, technical and technological progressiveness to handle the increasing complexity of the product ranges manufactured more efficiently and effectively, and further intermediation efforts through diversification into retail segments that previously did not carry ice cream (during the 1960s and 1970s this was the grocery trade).

(5) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture when operating its business model under the conditions of **seasonality and unpredictable fluctuations in the weather** (also an averseness to the negative cumulative effects brought about by seasonality and the weather). Wall's typically emitted practices that tended to increase the relative stability of reinforcers (sales and profits) or dilute the schedule of punishment⁹⁹⁹ (costs) and counter/benefit from relative degree of setting scope stricture. Such emissions included freezer and outlet exclusivity, producing bulk and dessert products, advertising to attempt to equalise the effects of seasonality over the winter months, and statistical modelling for weather forecasting and correction.

(6) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture when operating its business model (large-scale operations in production, distribution, and marketing and the special requirements of producing, storing, and distributing ice cream) in the **absence of a fully-fledged wholesale sector**. Wall's typically emitted practices that tended to increase relative reinforcement patterns and/or decrease punishment and counter/benefit from relative degree of setting scope stricture. Such emissions included rationalisation and consolidation of operations through a clear focus on scale economies, technical and technological operations (including infrastructural replenishment across the entire operations, for example, the formation of Embisco and Total Investments), and increasing the quality and quantity of retailer and consumer approach.

⁹⁹⁸ See Chapter 5, Section 5.3.2A on schedules of punishment.

⁹⁹⁹ Ibid.

(7) Wall's exhibited a persistent sensitivity to positive and negative changes in the patterns of reinforcement and punishment (in terms of changes in quality, quantity, salience, and degree of variability and flow) and in the extent of setting scope stricture when operating its business model under conditions of **competitive encroachment**. Wall's typically emitted practices that tended to counter or benefit from setting scope stricture resulting from competitive encroachment or increase/decrease relative patterns of reinforcement/punishment. Regularly emitted practices included intermediation, freezer and outlet exclusivity, personal selling, running a differential reward scheme, mass consumer marketing, distinctive branding, pursuing market leadership and building a brand repertoire with a strong reputation geared around quality and value for money, increasing product range comprehensiveness, product development, generating novelty and variety, effective advertising and promotions, rationalisation and consolidation of large-scale operations to improve efficiency and effectiveness, and technological and technical progressiveness.

(8) Among the most important changes during the 1970s is the evidence for competitive encroachment through the seemingly increasing rate imitation of *successful* products. Competitive imitation resulted in additional negative changes in the relative incidence of the patterns of reinforcement and punishment and scope qualification effects resulting from competitive encroachment. Imitation signalled patterns of punishment resulting from the negative consequences on the level of retailer and consumer approach (decreases in market share, threatened loss of market leadership, severe delays in recovering R&D investment) and from the constraining effects on the behaviour setting scope (reduced access to retailers) of such encroachment. Wall's behaviour acquired sensitivity to changes in the quality, quantity, salience, degree of variability, and the relative incidence of patterns of reinforcement contingent upon under the condition of increasing imitation by competition. Behaviour that tended to counter these effects included (a) increasing product development, advertising, personal selling, emphasis on brand reputation and product quality, and all other learnt efforts that in the past functioned to increase retailer and consumer approach, and, (b) increasing the rate rationalisation of its large scale operations via technological and technical progressiveness to benefit from improved efficiencies which could lead to more competitive pricing vis-à-vis the lower quality rival products¹⁰⁰⁰.

(9) The level and cumulative effects of past performance.

(10) By virtue of its learning history, the behaviour of Wall's may be also expressed in terms of its sensitivity to changes in the quality, quantity, salience, degree of variability, and the relative incidence of patterns of reinforcement and punishment contingent upon channelling retailer and consumer approach towards terminating in literal exchange in its own brands and thwarting the extent of competitive encroachment.

¹⁰⁰⁰ Chapter 5, Section 5.3 discusses competitive encroachment in greater detail as an example of environmental selection operating on behaviour by regulating patterns of reinforcement and by qualifying setting scope stricture. Sections A5.4.2 and A5.4.3 (Appendix 5) present the evidence with respect to competitive imitation.

(11) There is some evidence to suggest that during the 1970s the behaviour of Wall's was less sensitive delays in reinforcement (i.e., a lesser sensitivity to variable interval schedules) in contrast to secondary manufacturers¹⁰⁰¹. In addition, it also appears that the behaviour of Wall's was shaped and maintained by patterns of relatively high utilitarian and informational reinforcement than that of its rivals¹⁰⁰².

These factors functioned independently, simultaneously, and in combination to regulate the behaviour of Wall's during the 1970s carrying forward from the first generation-situation to the second generation-situation (inheritance and accumulation of rules).

¹⁰⁰¹ See Appendix 5, Section A5.4.2C.

¹⁰⁰² See Chapter 5, Section 5.4 wherein Wall's behaviour is hypothesized to fall in the Accomplishment Contingency Category of the BPM.

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