7-1989

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DOI: https://doi.org/10.1111/j.1467-6486.1989.tb00736.x

Published in Journal of Management Studies, Volume 26, Issue 4, pages 397–416, July 1989
http://dx.doi.org/10.1111/j.1467-6486.1989.tb00736.x

COMPETITIVE GROUPS AS COGNITIVE COMMUNITIES: THE CASE OF SCOTTISH KNITWEAR MANUFACTURERS*

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ABSTRACT

This article explores how the mental models of organizational strategists determine perceptions of competing organizations and responses to competitive conditions. We first outline a cognitive perspective for discussing competitive strategy, and then use this framework to analyse the particular case of the Scottish knitwear industry. We show how the structure of that industry both determines and is determined by managerial perceptions of the environment. We conclude by drawing out a few general implications of our framework for research and theory on competitive strategy.

INTRODUCTION

Research on business competition has largely focused upon two issues. First, in an efffort to explain why some generic organizational forms succeed and others fail, industrial economists (*e.g.*, Scherer, 1980) and population ecologists (*e.g.*, Hannan and Freeman, 1977) have studied the evolution and structure of competitive groups such as 'industries' and 'organizational species'. On the other hand, strategy researchers (*e.g.*, Porter, 1980; Rumelt, 1984) have typically focused upon individual firms, with an eye toward explaining why the strategies of some organizations lead to competitive superiority while those of others do not. These two issues are not, of course, independent. The structure of competitive groups partly emerges from the strategies of individual firms. Conversely, the strategies of individual firms, both realized and intended, reflect the nature of the broader competitive environment. This non-independence means that a complete understanding of competition will be possible only when the reciprocal links between firm-level strategies and group-level structures are uncovered.

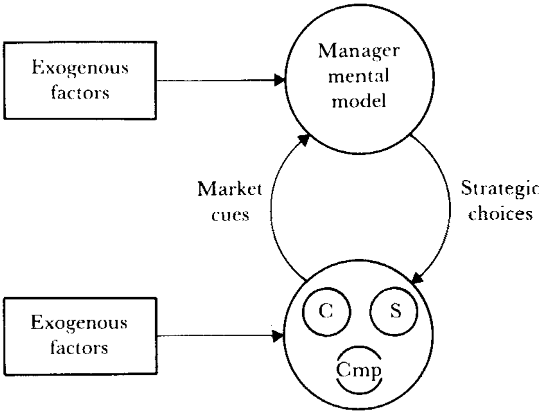
In this article we argue that one important link between group-level and firm-level competitive phenomena are the mental models used by key decision-makers to interpret the task environment of their organization. Business rivalry occurs within a complex network of transactions among producers, their suppliers, and their customers. As has been noted by Child (1988) and Meyer and Rowan (1977), this network of transactions functions at two different levels of analysis. Actual resource exchanges occur at the *material* or technical level where decisions are being made about what goods or services to produce, what raw materials to purchase and from whom, and what customer groups to target. At the material level, business competition can be analysed in terms of well-researched concepts such as entry and/or mobility barriers, the cross-elasticity of demand, product differentiation, and pricing.

However, material decisions ultimately reflect the intuition and cognitive constructions of decision-makers. At a *cognitive* level, business competition must be analysed in terms of the mental models of decision-makers and how such mental models lead to a particular interpretation of the competitive milieu. Since most research on business competition has examined its technical and material bases, these cognitive aspects have been largely ignored in the literature. Because it suggests various mechanisms to link group-level and individual-level competitive dynamics, we hope to show that a cognitive perspective on rivalry is a fruitful complement to more traditional explanatory models.

THE COGNITIVE UNDERPINNINGS OF COMPETITIVE STRUCTURES

In taking a cognitivist stance on interfirm competition, we follow a growing number of researchers who have begun to explore the 'interpretive' side of organizational activities (*e.g.*, Barley, 1983, 1986; Bartunek, 1984; Daft and Weick, 1984; Dutton and Jackson, 1987; Kiesler and Sproull, 1982; Ranson, Hinings and Greewood, 1980; Sims and Gioia, 1986, Smircich and Stubbart, 1985; Weick, 1979). The interpretive approach rests upon four long-standing assumptions. First, activities and structures of organizations are assumed to be determined in part by the micro-momentary actions of their members. Second, such actions are assumed to be based upon an information-processsing sequence in which individuals attend to cues in the environment, interpret the meaning of such cues, and then externalize these interpretations via concrete activities. Third, it is assumed that 'meaning' is problematic, and that individuals must construct actively an interpretation by linking received cues with well-learned and/or developing cognitive structures. Finally, individuals are assumed to possess a reflective capability such that they are able to verbalize at least the contents of their interpretations if not the processes through which such interpretations were generated. Taken together, these four assumptions portray human activity as an ongoing input–output cycle in which subjective interpretations of externally situated information become themselves objectified via behaviour (*e.g.*, Berger and Luckmann, 1967; Weick, 1979). This continual objective–subjective–objective transformation makes it possible eventually to generate interpretations that are shared by several people. Over time, individual cognitive structures thus become part of a socially reinforced view of the world (Berger and Luckmann, 1967; Douglas, 1986).

The cyclical nature of interpretive activity implies that the material and cognitive aspects of business rivalry are thickly interwoven. This mutual dependence will be a major theme in our argument, and is illustrated schematically in figure 1. Technical/material transactions along the value chain provide an ongoing stream of cues that must be noticed and interpreted by organizational decision-makers (*e.g.*, Hedberg, 1981). Through processes of induction, problem-solving, and reasoning, decision-makers construct a mental model of the competitive environment which consists minimally of two types of beliefs; beliefs about the identity of the firm, its competitors, suppliers and customers, and causal beliefs about what it takes to compete successfully within the environment which has been identified. Given limits to human rationality (*e.g.*, March and Simon, 1958; Schwenk, 1984), not all cues are attended to and interpreted. Thus, the mental models of decision-makers are only partial representations of the transactional network. Furthermore, mental models are influenced by information exogenous to the transactional network such as the idiosyncratic personal histories of decision-makers and, as we will note below, the mental models of decision-makers in other organizations.



Note: C = Customers
S = Suppliers
Cmp = Competitors

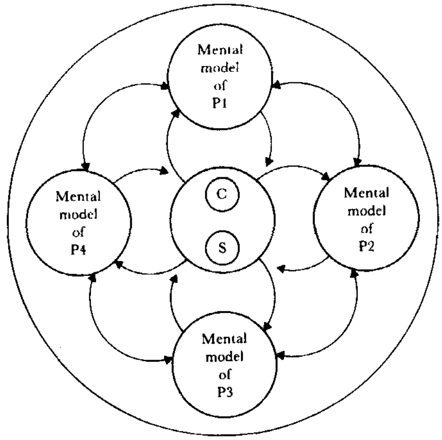
Figure 1. Reciprocal influence of technical and cognitive levels of analysis

Just as mental models are determined by cues from transactions within the value chain, such transactions are themselves partially determined by the cognitive constructions of organizational decision-makers (see figure 1). Beliefs about the identity of competitors, suppliers, and customers focus the limited attentional resources of decision-makers on some transactional partners to the exclusion of others (Porac, Thomas and Emme, 1987). Both a supply-side 'industry' definition (*e.g.* 'We're part of the "consumer electronics industry"') and a demand-side 'market' definition (*e.g.* 'We serve the "high-end audiophile market"') are probable results of this sort of segmentation. The narrowing of attention onto a given task environment means that strategic activities within this environment are closely monitored and controlled. These activities themselves are based upon beliefs about the causes of competitive success and failure (Salancik and Porac, 1986; Stubbart and Ramaprasad, 1987). Of course, because of inertial forces involving political, informational, and resource constraints, not all activities within the transactional network are strongly linked to the mental models of organizational elites. Together with exogenous influences, such as the actions of governments, macroeconomic dynamics, and the strategic choices of other firms within the network, this implies that an organization's transactions within the value chain reflect only imperfectly the mental representations of its key decision-makers.

In Weick's (1979) terms, figure 1 suggests that the material and cognitive aspects of an organization's strategic activities are linked together in a loosely coupled 'enactment' process in which each is determined partly, but not solely, by the other. However, at the firm level this reciprocal relationship does not occur in isolation of the other parties involved in the same transactional network (*i.e.*, customers, suppliers, competitors). Such parties are similarly interpreting material cues from the network, and are similarly enacting these interpretations through activities within the value chain. Although the interpretations of customers, suppliers and competitors are all involved in structuring the transactional network, the enactment processes of competitors are particularly important because they serve to link firm-level and group-level competitive activities. A crucial linking mechanism is the creation of socially-shared beliefs which define the relevant set of rivals and guide strategic choices about how to compete within this set. These shared beliefs establish the identity of individual firms and help to create a stable transactional network in which the actions of rivals are at least somewhat predictable.

Figure 2 illustrates this argument. Each competitor is involved in an individual enactment process in which the mental model of its strategists is reciprocally intertwined with its strategic choices within the marketplace. Because of both indirect and direct imitative tendencies (Aldrich, McKelvey and Ulrich, 1984; DiMaggio and Powell, 1983) over time, the mental models of competing strategists become similar, thereby creating 'group level' beliefs about the marketplace. Indirect imitation occurs because strategists from different firms face similar technical/material problems with a finite number of solutions. Belief similarity develops as a result of interpreting the same cues and solving the same problems. Direct imitation occurs because of both formal and informal communications among the set of competitors. Such communications permit the mutual exchange of ideas and concepts by externalizing individual mental models in a publicly observable form. The net result of both indirect and direct imitation is that the strategic choices of individual firms take place within the context of many shared beliefs about how and with whom to engage in transactions in the marketplace (Huff, 1982).

The above arguments bring together and extend ideas from a number of disparate research traditions. Oligopoly theory (*e.g.*, Stigler, 1964) openly accepts that consensual and group-based co-ordinating mechanisms are often involved in industrial competition. Similarly, strategy researchers (*e.g.*, Porter, 1980) have commented upon the interorganizational signalling and imitation that typically



Note: C = Customers
S = Suppliers
Pn = Producers

Figure 2. Mutual enactment processes within an industrial sector

goes on among rival firms. However, in accepting explicitly that competition occurs at two interwoven levels of analysis – a material level and a cognitive level – the present perspective provides psychological substance to previous assumptions and *ad hoc* observations. In doing so, an interpretive account of competition extends the work of institutional theorists (*e.g.*, DiMaggio and Powell, 1983; Meyer and Rowan, 1977) and cognitively oriented strategy researchers (*e.g.*, Huff, 1982) who have argued that consensual socially constructed beliefs influence the actions of competing organizations. The present perspective expands this view by localizing such beliefs in the mental models of organizational strategists.

Thus, rather than being an alternative to more traditional accounts of rivalry, a cognitive perspective complements and fills in the gaps of previous theorizing. Despite this complementarity, however, there has been very little explicitly cognitive research on business competition, and little is known about how mutual enactment processes structure the activities of firms within a competitive milieu. In the remaining sections of this article, we hope to provide empirical substance to our arguments through a case analysis of a single industrial sector. Our focus will be upon Scottish knitwear manufacturers, a collection of relatively small firms located primarily in the Border region of Scotland. This particular group of firms is an ideal case for studying the influence of shared beliefs given its small size, cultural homogeneity, geographical characteristics, and long-standing traditions.

Extensive semi-structured interviews were conducted with top managers from approximately 35 per cent of these companies over a six-month period. The results of these interviews were combined with detailed analyses of secondary industry data to answer three interrelated questions:

Q1: What are the consensual identity and causal beliefs constructed by top managers to make sense of transactions within their competitive environment?

Q2: How do such beliefs relate to the strategic activities of firms within the sector?
Q3: How are such beliefs maintained or altered over time?

In the next section, we will present a brief background on Scottish knitwear manufacturers and their place within the international knitwear industry. Much of our analysis will draw from earlier work by Baden-Fuller, Pitt, Stopford and Taylor (1987). Following this, we will discuss evidence bearing upon the above questions and conclude with a general discussion of the implications of a cognitive perspective for research on business competition.

CHARACTERISTICS OF THE SCOTTISH KNITWEAR BUSINESS

The production of wool has a long history in Scotland and can be traced back at least to the twelfth century (Leggett, 1947). It was at this early date that sheep were introduced into the country's northern islands by the Norsemen and into the Border region by the English from the south. The prominence of wool in the history of Scotland is probably due to the country's climate, which requires warm clothing and is also quite hospitable to the raising of sheep (Harrison, 1956). Formal woollen trade associations were in existence as early as the mid-1600s, with the border towns of Galashiels and Hawick being at the centre of trade activity. In the late eighteenth century, Glasgow traders travelling to the Far East began to import finer wools from China, leading to the development of Scottish expertise in the preparation of cashmere and its use in the production of knitted and woven garments. The industrial revolution and the invention of automatic knitting and weaving equipment encouraged the establishment of firms manufacturing garments in mass quantities. Some of the oldest Scottish knitwear companies in existence today were founded during this period in the mid- to late-nineteenth century.

We include within our target group of firms 17 companies manufacturing 'high quality' knitted outerwear. Table I lists these companies, together with their production location and recent performance. As can be seen, a small number of the 17 firms are located outside Scotland, in the Midlands region of England. These have been included because they share commonalities in production techniques and general strategies, and because they are typically cited as being competitors of at least some of the Scottish firms. Five of the firms are independent divisions of Dawson international, Britain's third largest textile company and a leader in the Scottish sector.

In general, the companies listed in table I produce 'fully-fashioned' knitted outerwear under their own brand name using high quality Scottish or cashmere yarn. At the top end of the price range, garments produced by these firms can retail to the consumer for as much as £450 (approximately $800 US). The least expensive garments will retail for approximately £35–40 ($60–70 US). Typically, a large portion of the total production is exported to Europe, Japan, and the United States. Fully-fashioned knitwear is produced by combining various coloured yarns into a garment whose size and shape is determined on the knitting machine. This contrasts with the 'cut-and-sew' technique where large lots of

Table I. Scottish knitwear firms and their performance (1984–1986)

Company	*Location*	*Sales (£m)*	*Export/Sales*	*ROCE*
Barrie	Hawick	6.5	0.70	0.32
Ballantyne	"	13.5	0.60	0.48
Glenmac	"	3.5	0.70	0.21
McGeorge	Dumfries	9.0	0.80	0.48
Pringle	Hawick	29.5	0.40	0.49
Lyle & Scott	Hawick	22.5	0.40	na
Cooper & Rowe	Nottingham	9.0*	0.40*	0.07
John Smedley		8.5	0.40	0.16
James Johnson	Elgin	8.0	0.40	0.23
Alan Paine	Surrey	8.0	0.80	0.07
Dalkeith/Jaeger		6.0*	0.40*	0.08*
Sabre Intl.		6.5	0.30	0.20
Cox Moore	Nottingham	6.0*	0.50*	0.09*
Robertson	Dumfries	3.5	na	0.10*
Peter Scott	Hawick	4.0*	0.80*	0.07*
MacDougal	Hawick	2.0	0.40	0.10

* Based on 1984 data
Source: Baden-Fuller *et al.*, 1987

knitted yarn are cut into pieces that are then sewn together to form garments. The cut-and-sew technique is faster and allows for a much higher scale of production. At the same time, it results in a lower-quality garment and more unused yarn, making it unsuitable for the manufacture of expensive cashmere products. Many cut-and-sewn garments are produced with neutrally coloured yarn and dyed as one piece when finished. Such 'piece dying' permits fast responses to trends in the popularity of various colours. On the other hand, piece dying produces garments of only one colour, and thus cannot match the intricate and rich designs of knitwear produced in the fully-fashioned manner.

The transactional network in which the Scottish firms are embedded begins with the purchase of dyed yarn chiefly from local spinners. Todd & Duncan, another Dawson subsidiary, is a major supplier of cashmere yarn to firms within the entire sector. None of the 17 companies spin or dye their own yarn. Labour is supplied through local channels. Both tradition and several training colleges have resulted in generally high skill levels and technical expertise. Production machinery is purchased externally, usually from German or Japanese suppliers. A major transformation is occurring in production technology as computer-integrated manufacturing techniques are supplanting less automated processes. Such techniques link the product design process with the control sequences of knitting machines electronically, thus permitting faster product development and shorter manufacturing lead times. In recent years, the breadth of the product range has expanded dramatically, with each producer now manufacturing thousands of varieties of sweaters. The major dimensions along which products vary are size, shape, colour and knitting design. From a marketing point of view, the latter three are especially important, and the typical producer changes about 20 per cent of its product line in any given year to match market trends. A few of the larger firms have small in-house design staffs to create new product variations. All the firms, however, hire outside design consultants. Finished garments are sold to retail stores around the world by independent agents who work on a commission basis. As part of their contractual agreement, agents are usually not permitted to sell other brands of knitwear but can represent other manufacturers who produce goods complementing their knitwear range (*e.g.*, shoes, handbags, men's suits, *etc.*). The typical retailers who are customers of the Scottish manufacturers are large department stores and exclusive speciality shops carrying classic clothing styles in expensive variations.

From an international standpoint, the total production of the Scottish firms in our sample is but a small fraction of worldwide trade in knitted outerwear. According to 1984–6 data provided by Baden-Fuller *et al.* (1987), the largest European producers of knitwear today are Italian firms, whose total volume of trade is three and one-half times that of British firms, the next-largest European producers. The production of the Scottish firms is only a fraction of this amount, accounting for about 20 per cent of total British production and only 3 per cent of the total European trade. This fraction is substantially smaller when firms from the Far East and US are considered. Nevertheless, the Scottish firms account for nearly 50 per cent of total British exports in knitted outerwear and have enjoyed substantially higher levels of profitability than other British knitwear producers, although not quite as high as Italian firms. According to Baden-Fuller *et al.* (1987), the Dawson companies have tripled their nominal output since 1979. The other Scottish firms have grown also. The data of Baden-Fuller *et al.* suggest that few of the Scottish firms operated at a loss during the period from 1972 to 1985.

In Porter's (1980) terms, the Scottish knitwear manufacturers seem to be following a 'focus' strategy by concentrating their efforts upon a narrow segment of the retail market. The aim is to sell premium quality, expensive garments through specialist distribution channels to a limited number of high income consumers. Two aspects of this strategy are noteworthy. First, the strategy seems more evolutionary than planned, having developed over several decades in response to problems encountered in the marketplace. Ten years ago, the Scottish firms sold in fewer international markets and with a more limited product range than is currently the case. They have gradually been forced by competing knitwear firms to expand both their range and their international customer base. Although the Scottish firms manufacture with up-to-date electronic knitting equipment, they have historically used traditional, labour intensive methods of hand finishing. Such methods permit the manufacture of very high quality sweaters, and the pool of skilled workers available to these companies has allowed them to exploit fully the traditional methods. On the other hand, traditional methods are not as efficient as more modern manufacturing techniques. As other domestic and foreign firms began to produce lower cost, higher volume, and lesser quality garments, the Scottish manufacturers, intendedly or unintendedly used the 'high quality' strategy to defend their position in the market. This strategy seems to be based upon certain beliefs about the nature of demand for Scottish products and the skills necessary to satisfy such demand.

Second, the cognitive foundation for these beliefs evolved within a culturally homogenous and close-knit community of firms. The top executives of most of these companies share family and/or educational histories, and have had similar career paths within and across firms. The small size and geographical isolation of Hawick, the centre of Scottish knitwear production, has fostered high levels of interfirm communication, both formally (*e.g.*, through the Hawick Knitwear Manufacturers Association and the Cashmere Association) and informally (in certain cases, the top managers from competing firms live within walking distance of each other). This cultural and geographical homogeneity has fostered the development of a shared identity and definition of the business as well as a consensual understanding of what it takes to compete successfully within the business environment so defined. It is difficult to untangle the precise historical origins of this shared perspective. However, in the next section we will summarize the results of our research by mapping what seem to be the core identity and causal beliefs comprising the current mental model. We will also try to show how such beliefs influence, and are influenced by, the strategies and structures of the Scottish knitwear companies.

THE HAWICK MIND: THE MENTAL MODEL OF SCOTTISH KNITWEAR MANUFACTURERS

Any discussion of shared perceptions must begin with an important qualification. Although social enactment processes inevitably press toward shared mental models, each individual manager within a cognitive community has a unique set of problems to work out and a unique informational base from which to generate possible solutions. Thus, to speak of *the* mental model of Scottish knitwear manufacturers is a bit problematic since variation exists from firm to firm in how managers conceptualize the details of the competitive environment. Cognitive anthropologists who have studied cultural consensus have begun to suggest that it is best to think of consensus as a set of core beliefs that are shared by many individuals within a group but around which there exists 'intracultural variation' (*e.g.*, Garro, 1986; Romney *et al.*, 1986). Such core beliefs are particularly shared by central or prototypical members of the group, as these individuals represent the central tendencies of the group as a whole. This sort of reasoning is evident in Huff's (1982) analysis of the interplay of industry-level and firm-level beliefs in strategy formulation.

In our analysis of the Scottish knitwear sector, we took intra-industry variation in beliefs as a given. At the same time, however, we sought to distil from interview and secondary data core beliefs that seemed to be repeated by our sources and widely accepted. Our analyses suggest that certain beliefs about competitor and market identity isolate a commonly perceived competitive arena for many of the Scottish managers. In addition, one or two core beliefs about how to deal with other parties in the transactional network seem to be important determinants of both the activities of individual firms and industry co-ordination. It is to these beliefs that we now turn.

Consensual Identity Beliefs and the Definition of Competitive Space

It is axiomatic that a first step in a firm's formulation of competitive strategy is the identification of its major competitors (*e.g.*, Porter, 1980). Two criteria have been advanced in the literature to distinguish competitors from non-competitors. The industry criterion suggests that this distinction should be made on the basis of technology – firms are competitors when they share similar technological attributes. The market criterion suggests that this distinction should be made on the basis of product substitutability – firms are competitors when they produce products that can substitute for one another in the satisfaction of customer needs. Both of these criteria have their advocates, and both are probably useful to some extent. Regardless of which criterion is used, however, the definitional problem revolves around interpreting cues from the environment (cues about technological similarity and/or product substitutability) and making decisions about which firms are competitors and which firms are not.

Despite sophisticated methods for analysing and determining competitive boundaries (*e.g.*, Urban *et al.*, 1984), these decisions ultimately rest upon the intuition and common sense of managers. To some extent, competitive boundaries are arbitrary (Day *et al.*, 1979; Weitz, 1985). Managers must somehow cut through this ambiguity and frame a competitive arena by classifying and simplifying the diversity of firms known to exist. In earlier work, we have suggested that this problem is resolved by using cognitive structures which categorize firms on the basis of their perceived similarities and differences (Porac *et al.*, 1987; Porac and Thomas, 1988). These structures appear to be at least weakly hierarchical in the sense that managers make type–subtype judgements such as 'We're a "retailer" but only "grocery retailers" are our competition'. Our earlier evidence has begun to suggest strongly that such statements of identity define for managers the perceived competitive space in which they place their business. According to Abell (1980), such identities should be the foundation of a firm's competitive strategy.

The Scottish knitwear manufacturers have defined their business as the production of top quality cashmere pullover and cardigan sweaters. This business definition reinforces and is reinforced by beliefs about the marketplace. Most of the Scottish producers perceive that the ultimate wearers of their garments are individuals in the top 2–5 per cent of income groups in any given country. The following comments by the managing directors of three Scottish companies illustrate this perceptual set:

> 'We're top-end. We're not interested in Marks & Spencer's or anybody other than the top 2 per cent in any country' (MD).
> 'If people are looking for knitwear, the top 5 per cent, we are the segment they will look to' (MD).
> 'We are in the market where customers simply want the best. Pure and simple. People must want the best' (MD).

This market definition, whether correct or incorrect, is often the first distinction that is discussed by managers when describing their business. In the minds of the managers, it has both demand-side and supply-side elements. The former is a set of assumptions about a group of individuals who can afford to spend a lot of money on a sweater. The latter is a set of assumptions about which firms in the world are capable of producing such sweaters. It is this latter set of beliefs that defines the Scottish knitwear manufacturers as a competitive group since it has prompted these firms to view each other as the major competitive threats. Some comments by a few of our respondents illustrate this quite clearly:

Quite honestly, there is not a lot of competition. The Italian industry is a different industry from ours. The Asian industry is a different industry from ours. . . Basically it's pullovers and cardigans. It's classic type garments. In my opinion, it is quite clearly defined that people expect to buy the best cashmere pullovers from Scotland. And it can be narrowed down and it comes to Hawick, and then you make your choice between the companies that are in Hawick which cashmere sweaters you want to buy' (MD).

The majority of our competitors are either within our own group, or within our own town. . . We don't try to be high fashion like the Italians. We call ourselves 'classical elegance' (MD).

Such comments point to one of the clearest conclusions that can be reached about the Scottish manufacturers. From their point of view, no other producers can manufacture the kinds of sweaters that they manufacture. Thus, when asked to discuss their competition, they focus mainly upon each other, although a firm's specific Scottish competitors may be seen as varying from one market (typically defined as a country in Europe, North America or the Far East) to another. Knitwear producers from Italy, the Far East, and even others within the UK are defined as being in 'different businesses'.

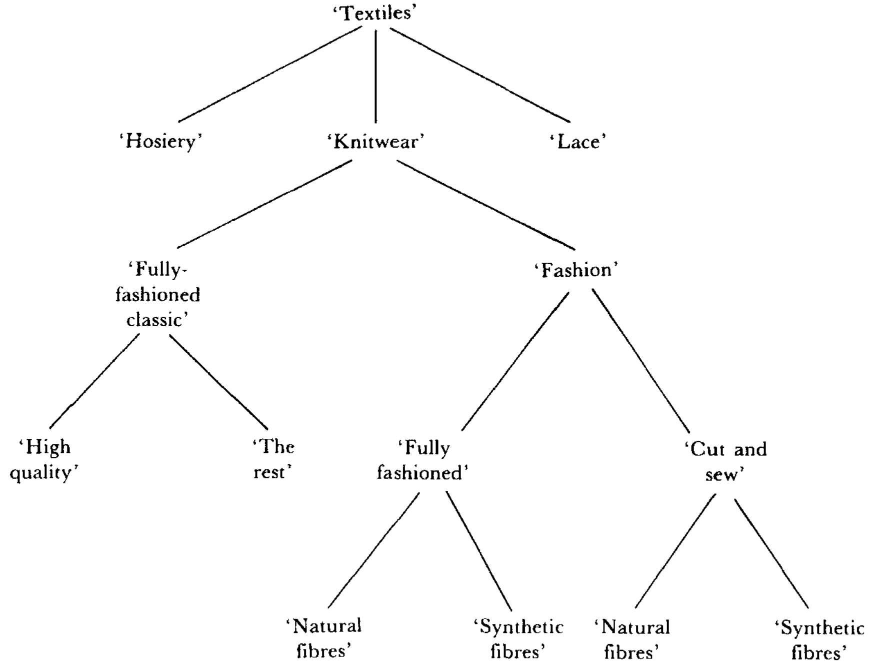


Figure 3. Elicited 'cognitive taxonomy' of one managing director of a Scottish knitwear firm[1, 2]

[1] This taxonomy was generated with a 'top-down' method often used to elicit taxonomic mental structures. The respondent was asked to begin with the category 'Textiles' and classify the subtypes of successively more specific categories of textile firms. This and other techniques for generating taxonomic cognitive structures are discussed in Porac and Thomas (1987).

[2] The respondent placed his own business in the 'High Quality' category of 'Fully Fashioned Classic' knitwear firms. Only the four or five other firms within the same category were considered competitors.

This perceptual focus can best be seen in a 'cognitive taxonomy' (Porac and Thomas, 1987) elicited from the owner of one of the firms within our sample (see figure 3). This manager distilled his competition from 'textile firms' to 'knitwear firms' to 'fully-fashioned classic knitwear firms' to a rather small number of firms producing 'high quality, fully-fashioned, classic knitwear'. This small group consisted of only Scottish companies. Most of the managers who were interviewed spoke about the need to think of companies outside of the Scottish group as 'somewhat' competitors, and there was a recognition that knitwear firms do compete with producers of other types of garments. As one manager noted, 'fashion is inherently substitution'. However, such beliefs did not seem to structure the definition of the perceived competitive space and were often discussed as afterthoughts only when prompted by direct questioning. For example, one managing director noted that 'I suppose in a way that you have to concede that we compete with all textile companies because everybody is trying to sell clothes, or a lifestyle'. This manager was one who defined his firm's competition as only other producers in Hawick. In addition, perceived threats by potential competitors outside of the Scottish group were sometimes dismissed:

> I don't think we have a lot of competition in this company. There is a crowd out in Hong Kong that manufactures for Ralph Lauren's Polo. They have copied us stitch for stitch. That is certainly a bit of a threat. But they got it wrong. They've missed some of the details. . . We are different, and few people do it like us (MD).

The tendency to minimize outside threats is characteristic of a strong ingroup–outgroup perceptual bias.

The Maintenance of Perceived Boundaries: Enacting a Competitive Group

What is particularly interesting about the rather sharp definition of competitive boundaries by Scottish manufacturers is the fact that these market perceptions have formed in the absence of systematic and replicable market research. Although some firms reported that such research was just beginning to get under way at the time of our interviews, admittedly there was a dearth of statistical information about market trends and consumer preferences. Instead, managers reported that market information is distilled informally from four word-of-mouth sources. First, a firm's agents around the world are consulted periodically to assess the trends in particular markets. Agents also convey information to the manufacturers through their choice of merchandise each season. Secondly, manufacturers contract exclusive design consultants from major markets to interpret fashion trends and suggest new garment designs. Third, market information is obtained as a firm's executives travel from country to country visiting shops and trade exhibitions. Finally, the Scottish firms track each other through informal contacts in trade associations and local communication networks within Hawick.

It is difficult to say whether market information that is obtained in these ways accurately portrays the preferences of consumers and the competitive structure of the knitwear sector. For example, it is difficult to know whether it is *really* only the top 5 per cent of wage earners in a given country that buys Scottish garments. However, it is not difficult to see that the range of market information sampled by Scottish managers is very restricted. Contacts with retail shop owners who are customers of the knitwear companies occur principally through agents. These agents are typically selected because their non-knitwear product lines are compatible with the 'classic image' that the Scottish manufacturers wish to project with their own garments. The agents, in turn, contact shops that sell classically-designed clothing. Since such shops usually do not carry a full range of fashion designs, their merchandise is usually sold to customers who are predisposed toward traditional knitwear products. Most of the market information possessed by the parties within this network is information that comes through network transactions. Given the fact that such transactions occur among a limited and preselected group of parties, the network acts as an information filter by narrowing the range of market data to that which is of immediate concern only to the producers, agents, retailers and consumers. Of course, what is of immediate concern is the purchase and selling of 'classical elegance', and thus the transactional network acts to reinforce and maintain the focused definition of the business described by our respondents as the selling of 'classic knitwear'. The perceived competitive space of 'classic knitwear' is thus segmented from the multitude of other knitwear producers, and the major competitive threats are viewed as coming from within the Scottish firms. Given the self-reinforcing nature of this transactional network, the perceived competitive boundaries probably could not be drawn in any other way.

This enactment cycle is portrayed graphically in figure 4. The self-definition as a producer of 'high quality fully-fashioned classic knitwear' leads to the selection of agents selling classically designed clothes, who are suppliers of shops merchandising classic garments to consumers with a limited range of preferences for 'classical elegance'. Market cues from consumers are filtered back through informal network channels and provide the Scottish firms with information primarily about preferences for variations on classically designed garments. Such filtered information is assimilated into the existing business definition, and focuses the attention of managers on a limited set of possible product offerings. In doing so, both the business definition and the competitive space it implies are reinforced, and the Scottish firms use their finite psychological and material resources to compete with each other in the fully-fashioned classic knitwear sector.

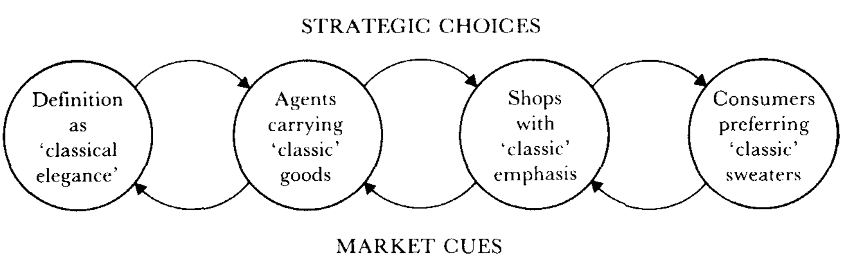


Figure 4. Enactment processes through the transactional network

The enactment cycle demonstrates the complex interweaving of technical and cognitive factors in structuring a transactional network. The producer–agent–

retailer–consumer network has been set up to solve certain technical problems in the production and delivery of manufactured knitwear. For example, the use of agents allows the small Scottish producer to economize in the distribution of its products in world markets. Similarly, agents specialize in traditionally designed lines of clothing to economize on time since supplying all types of retail shops is impossible. However, each of these technical choices is based upon a definition of the business as 'selling classically designed clothing'. Reciprocally, each choice reinforces this definition by narrowing the range of informal channels through which relevant market information flows. The result is a competitive arena defined by symmetrical mental models throughout the value chain. As one managing director put it, '. . . the best cashmere pullovers come from Scotland. There's a tradition behind it. People have it in their minds, people who own the shops, and they pass it along to their customers. . . The Italians would be competitors, but because of the tradition, no one expects to buy the best cashmere pullovers from Italy'. Because of the interweaving of cognitive structures and technical choices, this tradition locks out competitors and locks in the Scottish firms. Because of the joint action of interwoven technical and cognitive constraints, they have very little choice but to look inward and develop ways of competing among themselves. Such competitive tactics are based upon causal beliefs about how to compete within this sector, and it is to these beliefs we now turn.

Competitive Strategy and Causal Beliefs About Firm Performances

Spender (1980) and Huff (1982) have suggested that firms within an industrial sector develop consensual beliefs (or 'recipes') about how to manage their task environment. According to Huff (1982), shared beliefs about appropriate strategies provide a context within which the choices of individual firms are made. For Scottish knitwear producers, the core causal beliefs structuring choices within the 'high quality fully-fashioned classic knitwear' sector involve consumer demand, retailers, Scottish producers and suppliers. These are summarized in table II.

Table II. Generalized causal beliefs among knitwear managers

Network element	*Belief*
Customers	'The top 5 per cent of wage earners are unaffected by economic trends'
Competitors	'Scottish companies are not good at fashion design'
	'Friendly competition'
Suppliers	'Scottish spinners are the finest in the world'
	'Buy equipment for quality and flexibility'
Retailers	'Minimum order quantity is one'

Consumer demand. Since the Scottish firms have defined their market as the top wage earners in any given country, there exists the generalized belief that demand is relatively unaffected by trends in the economy. Thus, managers view consumer demand for their garments as stable. More importantly, consumers are viewed as more concerned with 'value' than 'price'.

Retailers. A high degree of consensus exists that retailer satisfaction is the key to the success of the business. A number of managers noted that a key element for ensuring this satisfaction is the ability to produce small lots of almost custom garments. As one manager noted 'We have only one requirement – the minimum order must be one'.

Producers. Since the firms within the Scottish sector are relatively small in number, culturally homogenous, and focused upon each other as competitors, a number of beliefs have developed over time to make sense of each other's actions and to regulate the activities of the group. One important belief is the assumption that Scottish firms are not good at designing high fashion garments. High fashion is generally a skill attributed (rightly or wrongly) to Italian producers. Secondly, informal norms about 'gentlemanly competition' exist to regulate the degree of rivalry within the group. Strict price competition is frowned upon, although apparently not unheard of, with firms competing mainly on the basis of design, service, and quality. Finally, there seem to be generalized beliefs about the size and focus of a successful Scottish firm. A few of the larger Scottish producers have recently begun to contradict the conventional wisdom of focusing upon 'classical elegance' by developing lines of 'sports' garments such as cotton golf sweaters. Managers outside these firms regarded such developments with disdain, and complained that they represent a dilution of 'Scottish quality'. As one managing director noted, 'The Barries and the Glenmacs are very good because they are trying to preserve quality. They are a good force in Scottish knitwear. The 'niggers in the woodpile' are the Lyle & Scotts and the Pringles who have become so big that they've lost their direction'. Thus, the perceived prototype of a Scottish knitwear producer is a small firm manufacturing high quality fully-fashioned cardigans and pullovers.

Suppliers. The Scottish firms purchase yarn from suppliers around the world. However, there is the perception that local suppliers in Scotland are the best. In particular, most managers hold one firm, Todd & Duncan, in very high esteem, and thus purchase much of their yarn from this one company. Beliefs about equipment suppliers, on the other hand, are both shared and apparently unique to individual firms. The consensual element is the assumption that competitive success in the classic sector stems largely from the flexibility to produce small lot sizes consistently over time. Since labour is a small part of the costs incurred in producing garments, machinery is purchased not to replace labour but to enhance flexibility. Within this general consensus, however, each individual firm seems to have a unique set of beliefs about the strengths and weaknesses of various equipment types, and thus each has an idiosyncratic mix of equipment purchased from around the world.

As part of the enactment process, this set of core beliefs about the transactional network is both a cause and a consequence of the focused Scottish knitwear business definition. The belief that high fashion is not the business of Scottish firms has defined the perceived competitive boundaries sharply to include primarily the Scottish producers themselves. The focus upon traditional designs, coupled with informal rules governing the intensity of price competition, has narrowed the range of feasible strategic possibilities. Customization via small lot sizes is one such possibility, and causal beliefs about production flexibility have emerged to guide activities toward this goal. Attaining such flexibility has sustained the narrow business definition by creating expectations on the part of retailers that custom variations in classic designs are feasible. Retailers are thus able to differentiate themselves from each other by offering subtly unique garments, thus creating the demand for even more flexibility in the future. In this way, a focused niche for minor variations in classic knitwear has been reinforced all along the value chain.

CONCLUSIONS AND IMPLICATIONS

In essence, we have suggested that the Scottish knitwear sector exists as it does today because the mental models and strategic choices of key decision-makers intertwine to create a stable set of transactions in the marketplace. In stabilizing such transactions, the mental models of strategists form a critical link between group-level and firm-level dynamics. In answer to the questions posed at the beginning of this article, we have identified core identity and causal beliefs that permit managers to define competitive boundaries and make sense of interactions within these boundaries. We have shown how such beliefs both cause and result from certain technical choices about how to conduct firm activities. Finally, we have suggested that such beliefs are reinforced by a mutual enactment process in which the technical choices of firms constrain the flow of information back to decision-makers, thereby limiting their vision of the marketplace to that which has already been determined by existing beliefs. Although much more research must be undertaken to establish clearly the merits of an interpretive view of business competition, we feel that the preliminary arguments presented above add value to the existing literature in three areas.

The Existence of 'Cognitive Oligopolies'

A cognitive perspective complements well-known arguments in the literature on oligopolistic competition. In such rivalry, firms are known to co-ordinate their activities and to stabilize their competitive tactics in predictable ways. Our cognitive account fleshes out the social psychological details of this co-ordination by showing that it is structured by the interaction of mental models and strategic choices along the value chain. More importantly, however, our analysis of the Scottish knitwear sector calls attention to the very definition of an oligopolistic competitive situation. Oligopolists are competitors because they have defined each other as such. But competitive boundaries are fuzzy, and managers must mix market signals with existing mental models to make choices about who to watch and who to ignore. Within this interpretive process, material conditions and mental models become inextricably intertwined. Thus, it is impossible to understand rivalry in such cases without attending to its cognitive foundations.

This argument can be taken even further. Uncertain environments create the need to gather information about one's abilities and skills. One way of gathering such information is to examine others who are similar to oneself (Festinger, 1954). We suggest that the need for social comparison creates an inevitable press among managers to look outward and establish similar competitive benchmarks against which they can compare their own firms. Judgements about organizational similarity, however, must be based upon a view of the environment and the organizations comprising it. Because human rationality is limited in scope, such a view is necessarily constrained, meaning that the number of perceived competitors must be small enough to define and regularly monitor. Evidence presented by Gripsrud and Grønhaug (1985) and Porac and Thomas (1988) strongly suggests that the press to define a limited set of competitive benchmarks exists even in highly fragmented business environments consisting of small firms with low market power. Within such situations, a mutually defined set of competitors can be thought of as a 'cognitive oligopoly' in that the competitive space is being psychologically segmented to simplify and make sense of the business environment. When coupled with the enactment processes we have outlined in this article, the existence of cognitive oligopolies turns standard economic dogma around completely by suggesting that interfirm monitoring and co-ordination *create* rather than result from oligopolistic situations.

Industries, Strategic Groups and 'Primary Competitive Groups'

This reasoning has interesting implications for recent discussions concerning the relative merits of aggregating firms into 'industries' or 'strategic groups'. Hunt (1972) used the strategic group notion to explain differences among firms *within* industries, and suggested that such groups have important implications for decisions concerning industry entry. Since Hunt's work, much research has been undertaken to explore the nature of strategic groups as an intermediate level of aggregation between the firm and the industry (McGee and Thomas, 1986). Guiding much of this research has been the argument that industry level analyses gloss over important strategic assymmetries among member firms, assymmetries that can best be described by determining the relevant strategic groups. Thus, major efforts have been made to develop clustering techniques to categorize firms within an industry on the basis of obtainable proxy measures of their strategies.

As McGee and Thomas (1986) noted in their recent review of this literature, many of the studies measuring strategic group membership have classified firms on the basis of attributes tangentially related to intended strategies. The resulting 'strategic groups' are thus analytical abstractions of the researchers. Such abstractions are useful when the aim is to assess similarities and differences among firms without regard for their strategic relevance. Such would be the case, for example, in developing a science of 'organizational systematics' (McKelvey, 1982). However, when attempting to understand the strategic interactions occurring within and among groups of similar firms, the social psychological reality of 'the group' must be taken into account. To do so, however, requires that the researcher assess the shared perceptions of member organizations and how such perceptions influence strategy formulation.

Our analysis of the cognitive dynamics among Scottish knitwear manufacturers suggests an alternative frame for understanding the grouping problem. The clearest conclusion from our research is that these organizations existed in the minds of Scottish managers as a group of firms competing among themselves and being somewhat protected from other groups within the international knitwear trade. We suggest that this consensual recognition is a defining feature of a 'primary competitive group' – a collection of firms who define each other as rivals. Primary competitive groups differ from strategic groups in a number of ways. Rather than being analytical abstractions, primary groups constitute the psychological reality for their members. Rather than being purely supply-side categorizations, primary groups consist of both market and technological distinctions, since in the minds of managers these two elements are inextricably intertwined. Rather than calling attention to the material conditions of competition, primary groups evolve through the reciprocal enactment of both material *and* cognitive conditions. Thus, rather than being purely economic entities, primary groups are sociological and psychological entities. Because of these differences, primary competitive groups are a fruitful area for further research.

The 'Competitive Cusp'

Rivalry presents an essential dilemma to the competitive strategist. On the one hand, strong pressures exist to imitate organizations that have been successful in obtaining environmental resources (*e.g.*, DiMaggio and Powell, 1983; Hannan and Freeman, 1977). At least marginal similarity is required to tap into the same resource niches. On the other hand, relative superiority in obtaining environmental resources stems from creating and sustaining organizational uniqueness (*e.g.*, Porter, 1980). These dual isomorphic and differentiating pressures create a competitive 'cusp' upon which the strategist must balance plans for ensuring the uniqueness of his or her firm among essentially similar organizational forms.

Our analysis of the Scottish knitwear companies suggests that the managers of these firms resolve this strategic dilemma by utilizing and refining the common stock of identity and causal beliefs within the group. Participation in the enacted definition of the Scottish group provides a convenient generic recipe for market activities: purchase yarn from local spinners, sell sweaters that will appeal to classically-minded high-income consumers, create a flexible production system that can manufacture garments in small lots, hire exclusive agents around the world to market these products, and temper the aggressiveness of one's approach to pricing. In addition to an obvious presence in or near Scotland, these activities, and the mental model which drives them, are the price of admission into the Scottish sector. Accepting these beliefs, and engaging in the necessary technical choices to realize them materially, immediately constrains the possible strategies for differentiating one firm from the others within the group. The belief of many managers is that the best differentiating strategy is to offer design variations on the classic theme that are more attractive than the variations produced by other firms, and to do so in a way that maximizes a retailer's ability to customize. Thus, the apparent differences among Scottish firms have to do with styling, colour and subtle variations in technology that are believed to give a firm a competitive edge. In this way, differences are created within an otherwise homogenous competitive group.

NOTE

* This research was funded by the Competitiveness Programme of the Economic and Social Research Council of Great Britain. Additional support was provided by the Centre

for Business Strategy at the London Business School. The authors would like to express their gratitude to the managers of the firms who participated in the study. Additional thanks go to John Stopford, David Taylor, Kiran Palmar, and Sebastian Green for comments and help in the collection of data.

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