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Supra-complex decision making*

A framework for understanding the choice behaviour of the modern food consumer

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1. Introduction

In the modern food marketplace, the consumer is faced with challenges (increased market complexity, relatively scare cognitive resources and lifestyle changes), which urge the consumer to rely less on a thorough consideration of food attributes and nutritional/health consequences when faced with food choices. As a consequence traditional 'cognitive' food marketing (i.e., food marketing that refers to problem solving or to the achievement of product attributes/benefits) may fail, since this is based on information, which the consumer to an increasing degree does not seem to take into consideration (e.g., Mahajan and Wind 2002).

Cognitive dissonance theory (Soutar and Sweeney, 2003; Festinger, 1957) implies that a consumer when faced with a decision problem (like buying a food product) seeks to balance her/his knowledge, attitudes, goals, feelings or desires in order to serve her/his self-interest and to avoid a state of cognitive dissonance. Growing evidence (Dolfsma, 2002; Betmann et al., 1998; Denzau and North, 1994) suggests, however, that in the complex real world consumers rarely have a comprehensive idea of what behavior may serve their interests in the best way. Nevertheless, consumers keep on buying food products, and many other products and services every day, without necessarily ending up in dissonant and stressful states. In trying to understand this behavior consumer research has proposed that when consumers are facing a complex decision-making situation and/or if they are under time pressure, consumers may use decision (or cognitive) heuristics to simplify the task and thereby regain competence

to select best choices (e.g., Lee and Marlowe, 2003; Allison et al., 1990; Kaas, 1984; Payne, 1976). Also, it has been proposed that consumers in some situations may instead evaluate products based on a holistic, or affective, approach. For instance research suggests that the perceived physical appearance may affect consumers' expectations of liking for a food and subsequently buying intentions (Hurling and Shepherd, 2003). This view is supported by gestalt theory proposing that a consumer may hesitate to use mental resources to analyze individual attributes if the mere holistic perception (the 'gestalt') provides the consumer with 'sufficient' information to justify her/his decision. In this paper we propose, however, that neither of these approaches are sufficient enough to explain the decision problems that confront the consumer in the *supra-complex marketplace*.

We suggest that in the supra-complex marketplace consumers will refrain from evaluating products based on attributes *per se* because consumers' felt competencies to handle choice complexity by referring to product attributes have decreased to a level where they have become insufficient. Thus, in the supra-complex marketplace consumers no longer play with product attributes in order to assess the product's value to them. Instead they play with something else, which we in this paper propose to be *mental markers* in order to assess justification for consuming that particular product. While refraining from evaluating attributes may be relatively harmless when carried out in relation to products like furniture, clothes, mobile phones, etc., obviously its consequences can be serious in relation to food products due to their impact on the human body: (1) they may lead to the consumption of unhealthy food which would not have been bought upon thorough cognitive considerations; (2) they may seriously limit health authorities' and the marketers' ability to educate the consumer by information campaigns. As a consequence, this paper focuses especially on investigating the central propositions of our concern in relation to consumer food behavior. In the following

sections we discuss consumer food behavior under simple, complex and supra-complex choice conditions; we discuss the concepts of complexity and supra-complexity extensively and provide a framework for understanding consumer decision-making under conditions of supra-complexity. Also, we provide a case-example to illustrate our suggestions. Finally, we discuss the implications of the proposed framework and provide suggestions for further research.

2. Consumer behavior under conditions of perceived non-complexity, perceived complexity and perceived supra-complexity

Conceptualizing perceived complexity

By nature, consumers will seek to serve their self-interests. The main problem confronting the consumer is thus to find the 'best' road to accomplish this task. We suggest that 'perceived complexity' is a key construct for the purpose of understanding how consumers' respond to the task of fulfilling their self-interests in various choice situations. If consumers' rationality was unbounded and if they had unlimited amounts of time they would always know what choices to make to serve their interests - and since this can happen with full certainty no cognitive dissonance would occur. In principle, choice complexity therefore does not arise because of characteristics related to the marketplace; it arises because consumers' processing capacity is limited, which prevents consumers from processing unlimited amounts of cognitive information in relation to all choice situations. Thus, in many choice situations consumers are burdened with bounded rationality. Bounded rationality can be seen either as the attempt to do as well as possible given the demands of the world – the notion of optimization under constraints – or as the suboptimal outcome of the limited cognitive system

(cf. Todd and Gigerenzer, 2003). However, not all consumers suffer equally from bounded rationality in relation to all choice problems, since the main answer to bounded rationality is learning. Learning means developing a (cognitive) knowledge structure consisting of concepts and categories, which can be used for interpretation and evaluation of the real world (Denzau and North, 1994). Since no two consumers have exactly the same structure, choice complexity is subjective and therefore the concept 'perceived complexity' is appropriate. In relation hereto, one way of conceptualizing perceived complexity is by addressing entropy, which is a principle derived from physics indicating the degree of disorder in a system that has been applied to marketing research (e.g., Swait and Adamowicz, 2001). A system with an entropy equal to 0 is in 'perfect order', while a system with an entropy of 1 has reached its limit and is in 'perfect disorder'. In a consumer research context, we may think of perceived complexity as being equal to the degree of perceived information disorder – or uncertainty - in a certain choice situation. When perceived information disorder increases, the transformation of market information into knowledge will impose a higher burden on the consumer due to bounded rationality. Thus, perceived choice complexity can be conceptualized as the perceived difficulty of transforming information into knowledge in relation to a certain choice situation. This transformation process is moderated by the consumer's already established knowledge structure since perceived choice complexity can be expected to decrease with a more sophisticated and developed (context-specific and generalized) knowledge structure (e.g., Zinkhan and Braunsberger, 2004).

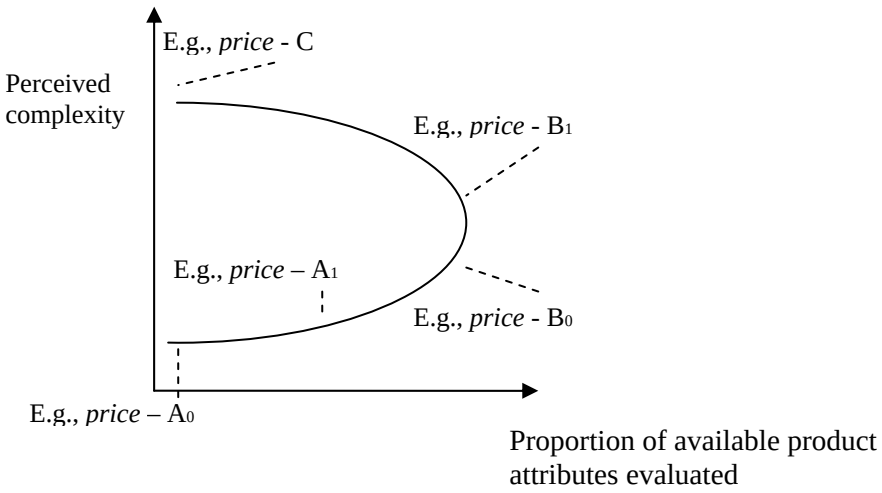
Consumer choice under different forms of perceived complexity

A product, and everything that comes with it, can be denoted as the output the consumer may obtain from accepting the offering, whereas the price to be paid can be seen as the input.

Under conditions of perceived non-complexity all product attributes can in principle be perceived 'unbiased' (Riesz, 1978; Lichtenstein and Burton, 1989) and suppliers and consumers do not disagree noteworthy about the content of the attributes. A very simple choice situation arises if a consumer perceives the products in a certain product category to be homogeneous. In such a situation, the consumer's main problem is to locate the supplier, which offers the product at the lowest price. No extra attributes would be evaluated since the consumer would not expect such an evaluation to be beneficial. This simple choice situation is marked 'A_0' in Figure 1.

Figure 1.

Consumer choice under different forms of perceived complexity – illustrated by the use of 'price'.



If instead, the consumer finds that the products available in a certain product category are distinct, the consumer's choice problem cannot be reduced to just being a simple problem of obtaining the lowest costs (the input). The consumer must also direct her/his attention to the possibility of getting different outputs from different products and thereby the transformation

from information to knowledge is getting more complicated. First, the consumer does not evaluate objective characteristics, s/he evaluates attributes (i.e., 'ascribed characteristics'), and the two are not necessarily in accordance. Second, due to bounded rationality, the transformation from information to knowledge is no longer free from costs and the consumer therefore now face the task of allocating resources to the choice problems that are most important to their interests. When perceived complexity increases only moderately (corresponding to the choice situation marked 'A_1' in Figure 1), consumers' are not heavily burdened by this task since attribute-information can still relatively easily be categorized, interpreted and evaluated. The consumer is therefore able - and because of the limited pressure on mental resources presumably also willing - to evaluate available product attributes.

The theory of optimal search (Stigler, 1961) suggests that a consumer will continue his/her search for information until the marginal costs of search becomes greater than the marginal expected return (i.e., the expected output of a product). Hence, when complexity continues to increase (corresponding to B_0, refer to Figure 1), the consumer will first seek information concerning attributes that are believed to be the most important for a successful outcome of the decision-making and may refrain from evaluating all the available attributes due to scarce resources. The curve from A_1 to B_0 therefore has an upward slope. In Figure 1 we switch to the letter 'B' to illustrate that the consumer is now burdened with restrictions on her/his mental capacity when evaluating attributes.

When perceived complexity increases further, the burden on consumers' mental resources increases subsequently. Many authors (e.g., Swait and Adamowicz, 2001; Bettman et al., 1998; Wilkie, 1974) have proposed that consumers will shift toward a simplified choice heuristic as perceived complexity increases and thereby also the risk of making 'improper'

choices. Decision-making heuristics have been grouped into different types (i.e., attribute-by-attribute versus alternative-by-alternative comparisons) and also according to whether or not a consumer is willing to make a trade-off (i.e., compensatory versus non-compensatory decision-making). Thus, heuristics are used by consumers to reduce complex decision tasks to simple operations and has also been described as 'inferential rules of thumb' (Allison et al., 1990). Simplifying the decision-making may also involve associations; for example, a consumer inferring the level of one attribute from the level of another attribute (Osselaer and Janiszewski, 2001). In Figure 1, this choice situation is illustrated by situation B_1. In this situation, consumers' evaluation of available attributes decreases with increasing perceived complexity as consumers are using choice heuristics.

We suggest that in some choice situations, and perhaps increasingly by number, consumers will refrain from evaluating products based on attributes *per se* because decisions about attributes have become supra-complex. *Supra-complex decision-making* occurs when the perceived difficulty of transforming product information into knowledge exceeds the expected benefits of doing so, even if decision-making heuristics, or other kind of attribute-related decision rules, were applied. In such situations, we cannot measure decision effectiveness as how close the consumer's decisions come to an ideal marketplace in which all product attributes are perceived and evaluated, since in such a supra-complex marketplace the consumer does not play with product attributes for the sake of evaluating products. The reason is that the consumer's knowledge structure is simply insufficient to match the task of evaluating attributes and thus the transformation process would require an improved knowledge structure. Such a refined knowledge (or cognitive) structure can, however, rarely be established on the spot but requires a learning process, which is resource demanding.

In the supra-complex marketplace consumers' still – of course – like to serve their own interests. Thus, we have to find a way to deal with supra-complexity without violating this basic assumption about human behavior. In other words, we need some sort of mental model, which accounts for the lack of consumer competencies to deal with attributes but which still allows consumers to evaluate the 'properness' of their decisions. We suggest that such a mental model should rely on the principle of 'mental justification'. In Figure 1 this principle is illustrated by the consumer's use of perceived price in situation 'C'. In situation C, the consumer may be just as price sensitive as in the more classical situation of A_0 – but for other reasons. In A_0 price acts as cost component, and nothing else. In C, price may be used as a 'mental marker' for the purpose of justifying the decision under the condition of perceived supra-complexity. A short example may illustrate this suggestion. A consumer wanting to buy a factory-made cake in a supermarket may simply give up on evaluating attributes (i.e. nutritional factors) since the consumer may not feel that any useable knowledge concerning the 'best' buy is obtained by conducting this evaluation. Instead, the consumer may simply pick the cake with the lowest price; not for the sake of inferring something about the remaining attributes but for the sake of obtaining mental justification: Even if the consumer picks a low-quality cake this situation could easily be mentally justified by referring to the low price. Thus, such a consumer can still maintain the belief that her/his own interests have been served – even though s/he may only have a slight idea of what is actually contained in the product. In the next main section the suggestion that consumers use mental markers to justify their decisions under conditions of perceived supra-complexity will be discussed in further detail.

Antecedents to perceived complexity and supra-complexity

Above we suggested that perceived complexity results from perceived system disorder, which to a higher or lesser degree makes it difficult for consumers to transform market information into knowledge. As already touched upon, consumers' knowledge structures (i.e., the cognitive organization of concepts and categories, which can be used for mental processing) may therefore influence perceived complexity (Lurie, 2004; Alba and Hutchinson, 1987). A consumer who meets a choice problem with a well-developed knowledge structure can - other things being equal - more easily organize and interpret problem related stimuli than consumers with less developed structures. The knowledge structure involves both context-specific and generalized components. Research (Zinkhan and Braunsberger, 2004) suggests that the two kinds of components are related; since knowledge structures developed in one context can be generalized to contribute to knowledge structures related to other (similar) contexts. That is, knowledge structures are transferable across related product categories. In the supra-complex marketplace neither the context-specific nor the generalized components are, however, sophisticated enough for providing the consumer with a sufficient platform for making decisions based on product attributes. Given the notion that consumers meet a choice problem with a certain knowledge structure (which also may include knowledge of cultural values, social norms, and the like) many other factors may also influence perceived choice complexity.

One main factor relevant for the present context is the type of the available attributes. Basically, product information can be classified into two groups of attributes (Nelson, 1970, 1974): (1) search attributes, which concern product properties that can be determined by the consumer before actually purchasing the product, (2) experience attributes, which concern

product properties that can be perceived and evaluated by consumer usage such as the taste of a new food product. When a consumer shops for a search good (i.e., a good for which the number of salient search attributes exceeds the number of salient experience attributes) the more shops that are visited, and the more products that are considered, the higher the probability of getting the most preferred combination of attributes and price. In the case of experience goods (i.e., a good for which the number of salient experience attributes exceeds the number of salient search attributes), the consumer has not only the usual search cost, but also the cost of testing the good (refer to Becker, 2000). This is likely to increase consumers' perceived choice complexity, since for experience goods the consumer can only evaluate the salient attributes when using the product. In addition to the distinction between search and experience attributes, Darby and Karni (1973) introduced the term credence. Credence attributes concern product properties that either cannot be perceived and evaluated by the consumer in the usage situation or can only be evaluated through expert assistance, e.g., the long-term health effects of certain food products. Empirical research supports the categorization into search, experience and credence attributes and also demonstrates that various consumers seem to agree on the categorization of attributes (Kaas and Busch, 1996). However, the term credence increases possible information asymmetry, which may exist between seller and buyer (Becker, 2000). This asymmetry makes the seller an 'expert' who tells the customer what s/he needs. Credence is thus a matter of trust. Since the consumer cannot transform credence information into knowledge because of the lack of verifiability, credence attributes are likely to be associated with a high degree of choice complexity.

Time availability is another factor with potential influence on perceived complexity. A consumer being short of time in relation to a choice problem, which under no restrictions on time would have been perceived to be only moderately complex (like the choice situation

marked 'A_1' in Figure 1) may refrain from evaluating the offered attributes but may instead switch to other decision-making strategies. Thus, as it has been advanced by previous research (e.g., Lurie, 2004; Payne et al., 1993) time pressure may increase perceived complexity and in the present context, time pressure may push the consumer along the curve displayed in Figure 1 towards more complex choice situations. If complexity due to specific combinations of search, experience and credence attributes and/or time restrictions increases to a degree where the consumer no longer feels able to engage in attribute interpretation for the purpose of evaluating the considered variants, a state of perceived supra-complexity has been reached. On top of this research (Swait and Adamowicz, 2001; Bettman et al., 1998; Simonson and Tversky, 1992; Payne, 1993; Baumeister and Vohs, 2003) has shown that also the number of attributes, the correlation between attributes, number of alternatives, preceding choice situations, among other factors, may influence perceived complexity.

3. Consumers facing supra-complex choices – a suggested framework

The principle of mental justification has been widely verified as an important determinant on consumers' propensity to act. For example, recent research (Okada, 2005) suggests that people will be less likely to consume hedonic goods when the situation makes it difficult for them to justify it. The need for justification may arise because there is a sense of guilt associated with hedonic consumption (Okada, 2005). Moreover, attribute balance theory suggests that consumers will avoid extreme attribute combinations (e.g., on a 100-point rating scale the combination of 60/60 will be preferred over the combination of 50/70 since the former has a more balanced attribute combination). According to Chernev (2005) this is due to the fact that the more balanced combination is the easiest to justify. This view is in

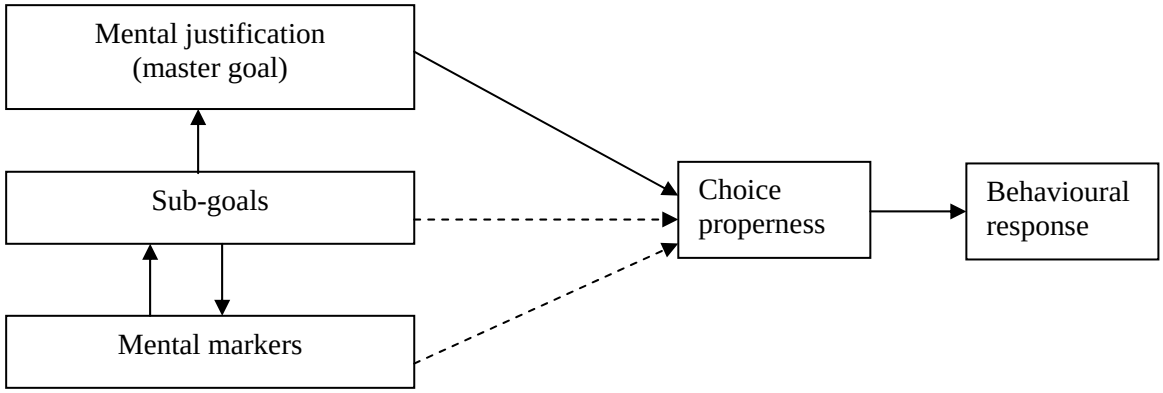
accordance with the suggestion put forward by other researchers (e.g., Shafir et al., 1993) that under uncertainty (i.e., when insufficient knowledge is possessed) consumers seek reasons to justify their choices. In a more general sense, consumers want to mentally justify their choices in order to avoid cognitive dissonance. According to Festinger's (1957) early conceptualization a person can be described as being in a dissonant state if two elements in her/his cognition (e.g., her/his knowledge of her-/himself, her/his attitudes, feelings or desires) are in imbalance. Festinger suggests that dissonance can be "…an extremely painful and intolerable thing" (p. 266).

In some choice situations consumers may readily determine that one product alternative dominates other alternatives. In such situations perceived complexity is low and so is cognitive dissonance since mental justification is easily attained. In other choice situations consumers' may find all alternatives equally attractive. In principle, such situations could arise because the consumer lacks the competence to compare the alternatives or because the alternatives represent an equal value to the consumer. Both causes will hinder the consumer in mentally justifying the choice by referring to one or more product attributes (Swait and Adamowicz, 2001). However, consumers will still try to seek reasons for their behavior (Shafir et al., 1993) and since such reasons cannot be reached by balancing preferences against expected product benefits (e.g., 'I prefer attribute X, which seems to part of product Y and therefore I can justify buying product Y') consumers must find other ways to mentally justify their actions. We suggest that consumers, when facing supra-complex choice conditions, are likely to use *mental markers* to justify their decisions. We conceptualize a mental marker as 'any mental construct the consumer uses for the purpose of gaining mental justification of *overall* choices'. Mental markers may, among other factors, include corporate brands, labels, self-perceptions, price, etc. (refer to further discussion below). By 'overall' we

mean choices that are not justified by referring to specific product benefits but choices that are justified by balancing the mental markers against the *(sub-)goals* that consumers may bring to - or may construct at - the marketplace (Bagozzi and Dholakia, 1999; Bettman et al., 1998). Our proposed framework for understanding consumer decision-making under supra-complex choice conditions is displayed in Figure 2.

Figure 2.

Supra-complex decision-making: mental justification, choice properness and the interdependence of goals and mental markers



The framework argues that under conditions of supra-complexity consumers evaluate the properness of their decisions against whether mental justification is achieved (i.e., the master goal) and whether one or more sub-goals are satisfied. Also, we argue that the specific use of mental markers may themselves have a direct influence on choice properness. Moreover, mental markers, sub-goals and mental justification are interrelated in the framework. The availability of mental markers may influence the construction of sub-goals since consumers are assumed to avoid mental imbalance when possible. This can be achieved by constructing

goals that ‘match’ the available mental markers. The sub-goals, which consumers construct on the spot or which they bring with them to the marketplace, may – on the other hand - also influence the selection of mental markers. We propose that mental justification results from the consumers seeking a mental balance between their sub-goals and the mental markers. Thus, consumers establish goals for good reasons. Goals serve as personal blueprints for directing the consumer’s behavior and thus goals also constitute useful referents in the process of mentally justifying intended and/or actual choice behavior.

Sub-goals and mental justification

In the marketplace consumers will have to exercise some degree of self-regulation in order to identify ‘reasonable’ and ‘unreasonable’ decisions. Control process theory (e.g., Carver and Scheier, 1982; 1990) suggests that goals can invoke a regulatory influence on consumer decision-making and also that goals can be activated when the consumer is confronted with various choice situations. For example, a consumer buying a brand on a routine basis may be exposed to information in the news saying that the production process related to that particular brand is under suspicion that it may harm the environment. The consumer may now find it difficult to mentally justify the continuing buying of that particular brand since the consumer’s assumed sub-goal of conducting environmental friendly behavior is now compromised. Also, recent research (Chernev, 2005) has demonstrated that in order to maintain status quo (which is easiest to justify since abnormal choices are avoided; Simonson and Tversky, (1992)) consumers use goals. Consumers are believed to organize goals into goal hierarchies where lower-level goals may help obtaining higher-level goals. Higher-level goals (like achieving mental justification) represent the most basic consumer motivation. The

goal hierarchy can be regarded as a way the consumer breaks up complex (and perhaps long range) problems into smaller (and perhaps short range) and more manageable problems.

Lawson (1997) proposes a hierarchical goal structure consisting of four levels of goals; abstract principles or values, actions programs, more concrete product acquisition, and brand acquisition goals. Heckenhausen and Kuhl (1985) distinguish between action goals (concerned with the act itself), outcome goals (immediate effects on action), and consequences (indirect effects stemming from outcomes). Consumer goals may be activated at different levels of abstraction (master goals, sub-goals) but may also be grouped according to whether or not a consumer is willing to make a trade-off (i.e., compensatory versus non-compensatory goals). Bettman et al. (1998) propose a 'choice goals framework' in which the construction of preference may be guided by the goals that the consumer brings to the marketplace. Examples of such goals, which all are contextual, include maximizing the accuracy of the choice, minimizing the cognitive effort required to make the choice, minimizing the experience of negative emotions when making the choice, and maximizing the ease of justifying the decision (p. 193). In this 'choice goals framework' consumers are assumed to relate product attributes to their goals in order to choose the product, which best satisfies the chosen goal(s). Thus, goal fulfilment is expected to occur as a consequence of consumers' selection and achievement of certain product attributes. In such a (complex) marketplace consumers are assumed to carry out their decision-making based on an analysis of the product content and of the derived consequences of that content. While we agree with Bettman et al. that "choices are made to achieve goals" (p. 192) the choice goals framework does not, however, handle choice situations in which a consumer is unable to relate product attributes to the chosen/constructed goals. We posit that under conditions of supra-complexity consumers will seek to balance mental markers and sub-goals in order to mentally justify the

considered decision. The successfulness of these balancing activities will then in turn affect the perceived properness of the considered decision. In relation hereto, a distinction can be made between the psychological-oriented goals put forward by Bettman et al. and more product-oriented goals, which may be more directly related to various food products (e.g., the achievement of healthiness, pleasure feeling and enjoyment, value-for-money, social approval, tastefulness, naturalness, nutritional value, and the like (Zeithaml, 1988; Okada, 2005). (The proposed links between mental markers, sub-goals, and master goal, resembles – in principle – the proposals put forward by Gutman (1997). Gutman considers the elements in a means-end chain - attributes, consequences, and values – to be elements in a goal hierarchy and suggests that "it is easier and more direct to think of goals being achieved than to think about attributes, consequences, and values being achieved" (p. 548). For example, a consumer who considers buying a cereal may attach various associations to this product category (e.g., amounts of calories, taste, social approval, etc.) but not all these associations may reflect the goal(s) that the consumer may have in mind when considering buying the cereal. In our model, which is specifically directed as explaining choice behaviour under supra-complex conditions, we refer instead to mental markers (as opposed to 'attributes' in Gutman's framework), subgoals, and master goal (mental justification).

Mental justification can be classified upon whether a state of positive, neutral or negative justification is obtained as the outcome of the balancing process. Positive justification occurs when the consumer perceive that the constructed sub-goals are more than fulfilled by the use of mental markers, whereas neutral justification happens when mental markers match the constructed sub-goals. Positive and neutral justification may lead to purchase intentions if no other action barriers are present. However, if a neutral or positive balance between mental markers and sub-goals cannot be constructed (i.e., negative mental

justification) this does not necessarily mean that the consumer will hesitate from carrying out the decision. Instead, the consumer may switch to other kinds of strategies in order to reduce the mental imbalance that may arise as a consequence of a perceived gap between mental markers and sub-goals. For example, the consumer can modify the importance of the gap by seeking to convincing her/himself that the gap is unimportant; the consumer can mentally postpone perceived negative consequences of a certain behavior (e.g., smokers mentally postponing the unhealthy consequences of smoking); and/or the consumer can simply seek to neglect the goal or construct it to be of minor importance. Thus, consumers do not necessarily try to create justifications for all decisions; rather they seek to justify decisions they are motivated to make (Kunda, 1990) or which they cannot justify by using other mental strategies.

Mental markers

In section 2 of this paper we provided an example of how 'price' may be used by consumers as a mental marker in a supra-complex choice situation. A range of other factors, related to the selling company, the product, the consumer, food authorities and/or the situation, may also serve as mental markers. It is well documented that many consumers buy ecological food products because of animal welfare and/or environmental concerns and not because of an insight on how ecological product attributes may impact the food product itself.

Many companies engage in 'corporate branding', which conveys the essence, culture, character, and purpose of a company. In the process of corporate branding companies seek to link corporate identity (i.e., the corporate internal part of the brand) with corporate image (i.e., the external perception of corporate identity) (Rode and Vallaster, 2005). When successful, a corporate brand may serve as a mental marker for consumers who simply may choose a

product based on a belief that (desirable) internal company values (e.g., a company promising to deliver only the ‘best’) are transferred to the offered products. In such incidents, consumers evaluate the company instead of product attributes. The company brand here serves as a mental marker.

In some countries, food authorities have introduced ‘nutritional labels’ that divide food products into healthy, less healthy and unhealthy products - thereby making it easier for consumers to choose healthy food products without having to evaluate product attributes.

Self-perception theory suggests that consumers may use themselves as mental markers for accessing the properness of the considered decision. Consumers may perform evaluations by monitoring their subjective affective responses (feelings and emotions) to the product. Consumers may infer their overall evaluation (do I like this product?) from their affective response (do I feel good about this product?) to the product under consideration. In their affect-as-information framework Schwarz (1990) and Schwarz and Clore (1996) posit that affective responses may contain valuable judgmental information to consumers. In such situations consumers use their affective responses as mental markers for inferring the overall likeability of the product. This view is supported by results obtained by Pham et al. (2001) suggesting that target-induced feelings may predict the number and valence of people's spontaneous thoughts about a target; and may even be better predictors than people's cold assessments of the target. Many other researchers (e.g., Damasio 1994; Wyer et al. 1999) also have emphasized that people may perform evaluations by monitoring their subjective affective responses to the target.

Choice properness

Consumers will seek to avoid making decisions, which they know, or suspect, cannot be justified. We thus posit that mental justification is an overall, non-compensatory goal to most consumers. Cognitive dissonance theory suggests that consumers are motivated to maintain both intrapersonal and interpersonal balance. That is consumers will prefer consistency between their behavior and their personal goals as well as consistency with the goals they believe relevant others to have – or with the goals they believe will be beneficial for relevant others to strive for; e.g., when a consumer seeks to buy healthy food products for her/his family members. In supra-complex choice situations consumers do not 'measure' the properness of their choices by referring to the content of the product but by mentally estimating the degree to which their goals (either they are stable or constructed at the point of purchase) are fulfilled and - subsequently - whether the choice can be mentally justified. These relations are diagrammatical displayed in Figure 1.

Keller and Staelin (1987) and Jacoby (1977), among others, have suggested that complexity may have an inverted U-shaped relationship with decision effectiveness. That is, in highly complex markets consumer decision-making is less efficient than in complex markets because of bounded rationality. Decision effectiveness can be conceptualized as how close a consumer's decision comes to the decision that would have been made in a perfect informational environment in which consumers can accurately process all available information, are willing to incur the cost of thinking, and are motivated and compensatory decision makers. However, recent research (Dijksterhuis et al., 2006) suggests that - under conditions of high complexity - it may not be advantageous for consumers to engage in thorough conscious information evaluation before choosing. First, due to bounded rationality

consumers tend to take into account only a subset of the relevant information when they decide. Second, consumers tend to inflate the importance of some attributes at the expense of other, for example when using choice heuristics, which can lead to suboptimal weighting of the importance of attributes. Based on a series of experiments Dijkersterhuis et al. found that - when exposed to the same information - people who deeply thought about the information before choosing were less able to make the best choice (both when 'best choice' was measured objectively and subjectively) among complex products (in the experiments conceptualized as 'products with many associated attributes'). In sum, while the quality of thoughtful choices deteriorate with complexity, less thoughtful choices do not share this characteristic because they do not confront with the bounded rationality of consumers. The study by Dijkersterhuis et al. investigates attribute-related choices under simple and complex choice conditions but it does not consider the mental process that mediates the link between complex choice conditions and behavioural response. We believe that the model displayed in Figure 1 offers a possible outline of the mental process that may occur when complexity has increased to a level where consumers' ability to deal with attributes has become insufficient. However, based on the results obtained by Dijkersterhuis et al., one may argue that consumers (when complexity increases) switch to supra-complex decision-making because prior experience may cause them to believe that they are better off this way. That is, they may recognize that refraining from dealing with attributes may lead to better choices because of reductions in cognitive dissonance, usage of mental resources and time-usage. This way, consumers still behave in a (intended) rational way. Future research may wish to further investigate this topic.

4. Case-example

Case: The bread market.

Not more than three decades ago the market for bread was a very simple one. Although bread is heavily culture-bounded (i.e., the types of bread differ among various cultures) the bread supply was in most countries centred on just a few overall types. Within these types the different variants only varied along a few number of attributes. For instance, in Denmark (which is here used as an illustrating example), the variations for e.g. the 'French bread type' were limited to the shape of the bread and to whether grains were sprinkled on the surface or not. The dough was essentially the same and thus the market was uncomplicated, as most consumers possessed full knowledge about the attributes (shape and topping) available. Price was a significant choice criterion for choosing a particular variant of bread since the various variants were easy comparable and since most consumer have well-established preferences. Thus, price was mainly regarded as a cost component in consumer decision-making (i.e., the negative function of price; Zeithaml, 1988). 'Price A_0' in Figure 1 illustrates this market situation.

During the eighties, and especially during the nineties, more attributes were introduced, thereby increasing the number of bread variants available. For instance many different kinds of ingredients like grains, and combinations of grains, were now used in the various doughs or sprinkled on the surface of the breads. Along with this market development, many consumers gradually lost insight into the many attributes, and combinations of attributes, now available in the bread market. Therefore, consumers were often faced with uncertainty when making judgments of the salient attributes of breads. Such consumers may have tried to overcome their uncertainty and their lack of knowledge by selecting one or more indicators (including price) as a basis for their assessment of the desired product attributes. A higher price may signal higher quality (i.e., the 'positive' function of price; Zeithaml, 1988) and may thus have been used as an instrument for gaining 'pseudo insight' into the various bread attributes. In Figure 1, this market situation is illustrated by 'price B_1'. Price B_1 identifies a market situation where consumers gradually are giving up on evaluating 'complicated' attributes but instead are inferring them using other more 'simple' attributes.

During the last decade the number of available attributes and attribute levels have exploded. Not only has the number of bread variants been continuously increasing but various consequences (i.e., nutritional consequences, health consequences) of consuming the various breads have also been emphasized. As a result, many consumers now seem almost incapable of determining and comparing salient attributes as a basis for their choice as they face severe difficulties in maintaining knowledge of the available attributes. As a consequence, the consumer may change her/his choice-strategy. Instead of focusing on gaining one or more attributes and on finding the 'right' combination of these attributes, the consumer may refrain from evaluating any attributes at all. Instead, the consumer may now focus on the *overall* choice situation. In Figure 1, this market situation is illustrated by 'price C'. The consumer is here using the price as a 'mental marker' for justifying the overall choice situation – not for indicating the presence of a certain level, or combination, of specific attributes.

The basic premise of our framework is that consumers want to make choices that are in their own interest (i.e., the fulfilment of goals), that is we believe the consumer to be intended rational. The approach taken here differs from previous research in a number of ways. First, we propose the construct ‘mental justification’, which is concerned with how consumers mentally justify certain decisions based on mental markers rather than product attributes. Second, we center our attention on the construct ‘choice properness’, which we conceptualize as ‘the consumer’s believed degree of goal fulfilment in a certain choice situation’. Prior studies calculate the properness of consumer choices in terms of ‘best choice’ (e.g., Muller, 1984; Best and Ursic, 1986) and ‘decision effectiveness’ (e.g., Keller and Staelin, 1987), based on product attributes. Third, we propose that while complexity does affect the average degree of attribute evaluation in an inverted U-shaped relation, decisions may actually be reached just as effectively – and perhaps even more effectively – in supra complex markets than in markets with low complexity.

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