Alma Mater Studiorum – Università di Bologna

DOTTORATO DI RICERCA

Direzione Aziendale

XX Ciclo

Settore/i scientifico disciplinari di afferenza: SECS-P/08

TITOLO TESI

The Effect of Adding Features on Product Attractiveness:
The Role of Product Perceived Congruity

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Esame finale anno 2008

Preface

In this preface I would like to thank all the people who have supported me during my Phd program. This thesis comes at the end of three years which have been fundamental for my growth, from both academic and human point of view.

First of all, I feel to thank Professor Franco Fontana and Professor Paolo Boccardelli, who have given me the opportunity to enter the fascinating academic world just after my undergraduate program. Their support has been essential for keeping me motivated in reaching this important goal.

I am especially grateful to my two Italian advisors, Prof. Alberto Marcati and Prof.ssa Elisa Montaguti, who have supported me with precious suggestions both in generating my research idea and in the development of my project. I am very happy that they have really appreciated my work.

I also want to say thanks to Professor Michele Costabile for his great kindness and courtesy, and for having sustained and encouraged me during my Phd whenever I needed help.

I am extremely happy and honoured for having spent nine months of the last year as a visiting scholar at Kellogg School of Management - Northwestern University, in Chicago, working on my Phd thesis. It has been a wonderful experience, I think fundamental both for improving my thesis and for acquiring a much better understanding of the world of the research. In this context, I am very much indebted to Professor Gregory Carpenter, my foreign advisor, who has been a very fantastic person and an illuminating advisor of my project. I am also very grateful to other outstanding faculties of Kellogg School of Management, like Lakshman Krishnamurthi, Brian Sternthal, Alice Tybout, Angela Lee, Alex Chernev, and many

others, and all the other guys (in particular, Andrea, Federico, Junzhao, Grace, David, Jim, Monika, Yantao, Husein) who have made me feel a desired guest. I will always remember that experience with enormous pleasure.

Thanks to all of you, my "collagues" and friends, Francesco, Isabella, Riccardo, Sara, Serena. We have often had fun all together, but it has been seriously wonderful to share with you these three years.

My last, but most important, words are for the persons I have to say the greatest thanks. First of all, my parents, Rocco and Veneranda. A life will not be enough to say how grateful I am to you for all you have been doing for me. Then, my sister, Mariangela and my brother, Leonardo. My greatest satisfaction is to make them happy and proud to have me as their son and brother. My greatest honour is to deserve to be that.

Finally, last but not least, I feel to say a very special thanks to my girlfriend, Francesca, the person with whom I want to share the rest of my life, who has always been there whenever I needed it.

Matteo De Angelis

Bologna, March 2007

Table of Contents

Abstract

Technological progress has been enabling companies to add disparate features to their existing products. This research investigates the effect of adding more features on consumers' evaluation of the product, by examining in particular the role of the congruity of the features added with the base product as a variable the moderates the effect of increasing the number of features. Grounding on schema-congruity theory, I propose that the cognitive elaboration associated with the product congruity of the features added explains consumers' evaluation as the number of new features increases. In particular, it is shown that consumers perceive a benefit from increasing the number of features only when these features are congruent with the product. The underlying mechanisms that explains this finding predicts that when the number of incongruent features increases the cognitive resources necessary to elaborate such incongruities increase and consumers are not willing to spend such resources. However, I further show that when encouraged to consider the new features thoughtfully, consumers do seem able to infer value from increasing the number of moderately incongruent features. Nonetheless, this finding does not apply for those new features that are extremely incongruent with the product. Further evidence for consumers' ability to resolve the moderate incongruity associated with adding more features is also shown, by studying the moderating role of temporal construal. I propose that consumers perceive an increase in product evaluation as the number of moderately incongruent features increases when consumers consider purchasing the product in the distant future, whereas such an increase is not predicted for the near future scenario. I verify these effect in three experimental studies. Theoretical and managerial implications, and possible avenues of future research are also suggested.

Introduction

Nowadays consumers have the possibility to buy products having a lot of features. For example, they can purchase a single product that functions as cell phone, game console, calculator, text messaging device, wireless Internet connection, PDA, digital camera, MP3 player and GPS, or a refrigerator with a TV in the door. Furthermore, BMW 745's dashboard alone has more than 700 features and some new Nokia cell phones include ringer profiles, picture messaging, MP4 playback – all features absent from previous models (Thompson et al. 2006).

Broadly speaking, technological progress creates growing opportunities for companies to add features to their products. The increase of the number of product features is a common way to enhance and differentiate the products (Goldenberg et al. 2003; Mukherjee and Hoyer 2001; Nowlis and Simonson 1996; Thompson et al. 2005) and has typically the aim to provide greater functionality and utility to consumers. This strategy has become especially popular with the development in electronics and information technology (Thompson et al. 2005), which enables companies to include more functions and make products that cost less and require less time to be manufactured (Freund et al. 1997). Manufacturers persist in producing feature-rich products for two main reasons. First, they aim to serve their own efficiency goals. In fact, adding features costs next to nothing and, importantly, helps satisfy the needs of heterogeneous consumers, which is cheaper than to make targeted products with fewer features. Second, what drives companies to consider adding as many product features as they can is often their fear of being perceived as having fewer features than their competitors. Fear that people are making their decisions off a checklist, and that who has the most features wins. In this sense,

marketers see every new feature their company dreams up as a point of differentiation and every feature competitors dream up as a necessary point of parity (Thompson et al. 2006).

However, despite many manufacturers' belief that additional features make the products more appealing for consumers, anecdotal evidence suggests that in many cases introducing new product features does not improve products' evaluation, because consumers do not always use all the features of the products they buy (Ammirati 2003). In this vein, product innovations fail because managers overvalue them and have more faith in such innovations than is warranted (Gourville 2006). As a consequence, although adding product features leads products to have objective advantages over previous own and competitors' models (Carpenter et al. 1994), this is often not enough to succeed.

The understanding of the mechanisms underlying this evidence requires scholars and practitioners to make a broader set of considerations. In particular, it seems important to consider, in addition to the afore-mentioned supply-side explanation for adding product features, a demand side. In this sense, in addition to the increase of the product capabilities, new features may produce psychological costs by generating overload and confusion in consumers' mind, as responses to the increased product complexity (Mick and Fournier 1998; Thompson et al. 2005, 2006). Thus, even though engineers are often tempted to equip existing products with more functions, this strategy leads to the intangible costs of reduced usability. The risk of exploiting technological progress as much as possible is to introduce product innovations that give answers to questions that nobody asked. In the light of this phenomenon,

sometimes firms are forced to limit the number of features that technology would allow them to add to their products.

Consistent with the managerial trade-off between benefits and costs of adding product features, existing empirical research on the effect of the introduction of new features on product evaluations shows both positive and negative effects. These results appear to conflict with each other. For example, economic theory (e.g. Lancaster 1996, 1971), multi-attribute attitude models (e.g. Fishbein 1963; Bettman et al. 1975; Bernardo and Blin 1977), market research techniques (e.g. Srinivasan et al. 1997) and experimental research on trivial differentiation (e.g. Brown and Carpenter 2000; Carpenter et al. 1994; Kraus and Carpenter 2005) have all found that adding product features is beneficial for consumers. Conversely, other research indicates that the effect of the introduction of new product features is not necessarily positive (e.g. Klemperer 1987; McLaughlin and Skinner 2000; Mukherjee and Hoyer 2001; Shugan 1980; Thompson et al. 2005; Wiklund 1994). In particular, these scholars argue that managers rarely consider the costs of adding new product features. Such costs should not be meant as financial costs, but mainly as intangible customer usability costs. These intangible costs are typically defined in terms of a decrease of product usability, that is as the increase of the difficulty to use the products as the number of features increases. In this vein, adding many features can generate "feature fatigue", making products overwhelming (Thompson et al. 2005).

In sum, all these studies provide support for the existence of a trade-off between the functional benefits and the cognitive costs generated by adding product features. In other words, adding features to products may lead consumers to balance two competing needs: functionality and ease of use. In fact, on the one hand consumers

may infer functional benefits from new features, but, on the other hand, they may consider the costs of learning required to use the new features.

In the light of the presence of both benefits and costs of product enhancing, it seems important to understand whether products should be definitely enhanced with additional features or should be kept as they currently are. However, experimental research presents a dearth of studies explaining what determines whether consumers are likely to perceive a benefit from adding more product features.

Basing on this, I propose an innovative behavioral account for product evaluation as more features are added to products. This account aims to help resolve the previous empirical conflict about the effect of adding features to products. The main research questions can be formulated as follows:

When is increasing the number of features likely to increase product evaluation and when is it not?

What are the psychological mechanisms underlying consumers' reactions to the introduction of new product features?

I answer these questions by investigating the effect of the congruity of the new features with the base product, shedding light on the role of two constructs, cognitive elaboration and temporal construal, in explaining consumers' reactions to product enhancing. More specifically, I propose that whether adding more features increases product evaluation depends on how congruent with the base product such features are. I show that only when the features added are congruent with the product, evaluation increases as the number of new features increases. Conversely, as the

number of incongruent features increases, the cognitive elaboration required to deal with these features increases, and consumers are not willing to spend all the cognitive resources necessary to elaborate these features and try to resolve the incongruities. However, building on schema-congruity theory, I further show that consumers are able to resolve the moderate (but not the extreme) incongruity of new features even when the number of features is relatively high, if encouraged to consider these features thoughtfully. Finally, in the last experiment I provide further and converging evidence of consumers' ability to resolve the moderate incongruities of new features. This is done by investigating the role of temporal construal: consumers perceive value from increasing the number of moderately incongruent features when induced to imagine purchasing the product in a relatively distant future scenario, whereas they do not value the increase in the number of such features in a relatively close future scenario.

The main contribution I intend to make to the existing marketing, behavioral and technology management literature consists in presenting the behavioral mechanisms underlying consumers' reaction to adding more product features. In addition, almost all previous studies have considered the case of adding only one new feature. I propose that two psychological constructs, cognitive elaboration and temporal construal, are likely to drive consumers' reaction to increasing the number of features. The investigation of the role of these constructs is made possible by introducing the kind of features added as a key explanatory variable. The results of my experiments provide some interesting suggestions to practitioners about what kind of features to add to products and what product enhancing strategy to employ on the basis of the knowledge of the mechanisms underlying consumers' reaction.

The thesis is organized as follows. First I review the literature about the effects of adding product features on consumers' evaluations of products. This part is divided into different sections in order to present the very different predictions existing in economic, marketing and experimental research on this topic. Second, I present my theoretical model that explains when consumers do tend to perceive value from adding product features and when they do not, and what the mechanisms underlying these different outcomes are. This section includes a review of the literature on categorization and schema-congruity theory. Third, I report the results of three studies designed to test my research hypotheses. Then, a general discussion follows. I conclude with the theoretical and managerial implications of my work, and some suggestions for future research on this and related topics.

CHAPTER I

Literature review: the effect of introducing new product features on product evaluation

1.1 Introduction

Marketing and consumer research present a lively debate about the effect of adding product features on product evaluation. In this chapter I present both evidence about the positive impact of introducing new product features on consumers' judgments and evidence that adding product features does not necessarily lead to improvements in product evaluation.

In particular, recent work has been pointing out that adding features may generate an effect that is not as clear and unambiguous as the effect predicted in earlier work. In this respect, economic theory predicts that adding features makes products more appealing and models consumers' preferences using an additive utility function that links product attributes to consumer demand (Lancaster 1971). Similarly, the basic multi-attribute attitude model (Fishbein 1963) assumes that consumers adopt an additive integration rule when making product judgments. This additive formulation predicts that product (or brand) judgments can be decomposed into affective values for its attributes which add together to estimate the global scores. This means that when individuals are exposed to attributes having the same evaluation as the existing

ones product (or brand) evaluation increases (e.g. Anderson and Fishbein 1965; Day 1972; Wilkie and Pessemier 1973). Finally, an analogous pattern is expected by using market research techniques that estimate market shares on the basis of the partworths for each product attribute (e.g. conjoint analysis and discrete choice models). Because these partworths are used to predict market shares, each positively valued feature increases a product's market share compared with products that do not have the feature (Srinivasan et al. 1997).

Consistent with these findings, other research has found that additional features may provide positive differentiation and further reasons for consumers to purchase the product even when they are perceived as trivial and unnecessary (Carpenter et al. 1994; Kraus and Carpenter 2005).

Contrary to these predictions, recent marketing and behavioral studies have shown that adding product features might not improve product evaluations. For example, it has been shown that the impact of new features on product evaluation depends on factors such as attribute-specific associations (Broniarczyk and Gershoff 1997), brand price/quality (Nowlis and Simonson 1996; Broniarczyk and Gershoff 2003), and the size of choice set (Brown and Carpenter 2000).

Moreover, other research indicates that adding product features can have a negative effect on consumers' judgments of the product because these features can generate negative inferences (Hutchinson and Alba 1991; Simonson et a. 1994). Recent work has also been showing that new product features can have a negative effect on consumers' evaluation, but this effect is explained by the negative effect of new features on consumers' ability to use products (Wiklund 1994; McLaughlin and Skinner 2000; Mick and Fournier 1998; Mukherjee and Hoyer 2001; Thompson et al.

2005). The effect predicted leads to "feature fatigue", defined as the negative affective reaction that consumers may have after the introduction of many new features (Thompson et al. 2005). This reaction is motivated by the evidence that consumers account not only for functional benefits but also for learning costs when features are added to products (Mukherjee and Hoyer 2001). As a matter of fact, every additional feature "is one more thing to learn, one more thing to possibly misunderstand, and one more thing to search through when looking for things you want" (Nielsen 1993, p. 155). Such a problem may be particularly relevant in the case of technological products and/or attributes having relatively high technological content. This arguing finds further theoretical support in the research on information overload, which suggests that individuals are vigilant about the mental effort required to process the information (e.g. Keller and Staelin 1987), and in the need for cognition literature which indicates that individuals are sensitive to cognitive effort (e.g. Cacioppo et al. 1983). Importantly, these findings offer evidence that runs afoul of the traditional economic prediction that increasing the number of features enhances evaluations.

Taken together, all these studies provide empirical support for the existence of a trade-off between the functional benefits and the cognitive costs deriving from the introduction of new product features.

Most of them are discussed in more detail in the rest of this chapter.

1.2 Positive effects of adding product features on product evaluation

1.2.1 Traditional models

Broadly speaking, traditional economic and behavioral models support the belief that adding features enhances product evaluation.

More specifically, the fundamental belief of *multi-attribute models* (e.g. Wilkie and Pessemier 1973; Bernardo and Blin 1977; Bettman et al. 1975; Shocker and Srinivasan 1979; Meyer 1981, 1987; Jaccard et al. 1986; Holbrook and Havlena 1988; Lim et al. 1988; Neslin 1981; Kahn and Meyer 1991), decompositional models (e.g. Green and Carmone 1970; Stefflre 1971, 1972; Green and Rao 1972), as well as *economic theory of consumer preferences* (e.g. Lancaster 1966, 1971; Rosen 1974; Ladd and Zober 1977; Ratchford 1975, 1979; Agarwal and Ratchford 1980) is that products (or brands) are sets of attributes.

Each of these approaches adopts models that are designed in such a way as to yield specific predictions about the inferences consumers are likely to make about product desirability on the basis of certain attributes. The paradigm of judgment modelling which underlies this reasoning is the multi-attribute utility analysis (Anderson 1974, Keeney and Raiffa 1976), whose basic tenet is that consumers make product choices by first evaluating alternatives on each of a number of attributes. After this evaluation, consumers use an integration rule to form an overall evaluation of each product, and they are thought to choose the alternative with the highest evaluation or utility (e.g. Shocker and Srinivasan 1979).

Despite this common belief, the economic view and the multi-attribute attitude view have been typically seen as two extremely different approaches to the modelling of consumer preferences for products. This distinction was addressed, among the others, by Huber (1975) who underlined the sharp contrast existing between the studies which had considered consumer preferences as related to psychological variables (e.g. Wilkie and Pessemier 1973) and the studies which had evaluated the relative effectiveness of preference models on objective attributes (e.g. Lancaster 1966). He argued that objective physical attributes have the advantage to be less ambiguous and more easily controlled than psychological attributes, so that they allow a better determination of their causal effects.

A great deal of research in the field of consumers' preferences for a brand (or a product) adopted multi-attribute attitude measurement model. In its basic linear compensatory form (Fishbein 1963), such a model shows that individual's attitude toward a brand can be expressed as a function of the importance that consumer gives to an attribute and individual's beliefs that the brand possesses that attribute. As further explained by Fishbein and Ajzen (1975), the underlying assumption of this model is that an additive process exists, according to which the individual evaluations of each single attribute contribute to explain the global attitude that consumers form about the brand. On the basis of the additive hypothesis, it is predicted that when consumers are exposed to additional attributes having the same valuation as the existing ones, product (or brand) evaluation increases (Fishbein 1963; Anderson and Fishebein 1965; Wilkie and Pessemier 1973).

Generally speaking, multi-attribute attitude models deal with the relationship between individual differences in perception and brand preferences. Consistently,

these models define product attributes as perceived rather than objective characteristics of the product. Overall product judgment is thought to reflect the net resolution of an individual's cognitions (beliefs), as to the degree to which given objects possess certain attributes, weighted by the salience (or, alternatively, importance) of each attribute to the individual. In other words, multi-attribute attitude models generally assume that items (e.g. brands) should be seen as a linear combination of their "partworths" (e.g. Bernardo and Blin 1977). Such a way to evaluate products is defined as compositional method and is typically seen as opposed to the decompositional method (e.g. Holbrook 1981; Jain et al. 1979; Steenkamp et al. 1994). The difference between these two methods consists in the fact that compositional methods start with a set of explicit perceptions or beliefs about brand attributes and use them as the basis for predicting brand evaluations. By contrast, decompositional models start with measures of preferences for attribute bundles and use them to infer the values attached to the underlying attributes. Whereas the most classical example of compositional approach is given by the linear compositional attitude model (Fishbein-like), in which affect is predicted by weighting belief or satisfaction scores by desirability or importance values and then summed, conjoint analysis represents the best known example of decompositional methods, as much as on the basis of global item evaluations it allows to infer the partworths of the underlying brand or product features (Green and Rao 1972; Green and Srinivasan 1978; Green and Wind 1973).

In sharp contrast with the multi-attribute attitude view of consumer preferences, which defines product attributes as psychological and "perceived" variables, economic theory of consumer preferences assumes that product characteristics are

physical, tangible and objectively measured (Lancaster 1971, pp.114-115). In particular, Lancaster distinguished between objective properties of the products and the properties of consumer preferences for products. This distinction makes it possible to judge a consumer's success in maximizing his own utility without knowledge of consumer's preferences or utility.

Led by the pioneering works of Lancaster (1966, 1971) and others (e.g. Rosen 1974), the economic theory of consumer preference is based on the premise that goods are valued for the attributes they have, and that different items are essentially different packages of attributes. Consistent with the economic tradition, the demand functions for product characteristics are derived from the utility maximization framework. In particular, an additive function linking product attributes to consumer demand is used (Lancaster 1971; Shocker and Srinivasan 1979; Anderson 1981): each positively valued attribute increases product evaluation by increasing consumers' net utility.

The most comprehensive economic theory of multi-attribute product choice is represented by Lancaster's model (Ratchford 1975; Agarwal and Ratchford 1980). Lancaster's basic statement is that consumer utility or satisfaction is derived from the properties or characteristics which goods possess rather than from goods themselves. As a consequence, the demand for an item is a derived demand because consumers do not buy just the item, but a specific combination of attributes. The model is explained in terms of the maximization of an ordinal preference function for characteristics under budget constraint. Alternatively, Ladd and Zober (1977) proposed an economic model of consumer behavior which adopted the same definition of product characteristics as Lancaster's one but distinguished between

objective properties of products and the services offered by the consumption of products. These scholars argued that consumers' utility is not given directly by the objective properties of things (Lancaster 1971, p. 6, and pp. 114-115) but is given by the services derived from them. In particular, they modelled consumers' utility as a function of the amount of consumption services that a consumer may be able to obtain from consumption of goods, under the assumption that he aims at maximizing his own utility function. Furthermore, the amount of services depends on the total quantity of characteristics consumed and the total amount of a characteristic obtained from a given product depends on the quantity of the product consumed. Another model in the field of the economic theory of brand preferences is proposed by Rosen (1974). Consistent with Lancaster's view, Rosen considered products for their own characteristics and the demand function for product characteristics is derived from the utility maximization framework. This model focuses on the market for a good that can be completely described as a bundle of objectively-measured characteristics, assumed to be positively valued by consumers. Goods are assumed to be indivisible and each consumer is assumed to buy no more than one unit at a time. In this way the model can be applied to durable goods.

Similarly to the economic approach, such marketing techniques as conjoint analysis and discrete choice models employed in marketing research to modelling consumers' preferences for hypothetical new products use objective characteristics to determine how consumers react to changes in such attributes. Their typical approach consists in estimating partial values (partworths) for every product attribute (Srinivasan et al. 1997), and then in linking market shares to each of these partworths (Green and Krieger 1989; Horsky and Nelson 1992; Shocker and

Srinivasan 1974, 1979; Srinivasan et al. 1997, Thompson et al. 2005). Because market shares are predicted on the basis of these parthworths, each positively valued feature increases a product market share compared to products without the feature.

With respect to the goals of this research, the analysis of the afore-mentioned traditional frameworks reveals that, beyond the many conceptual differences among them, all these approaches converge in supporting the belief that increasing the number of features (or attributes) makes products more appealing.

In the next section, I analyze in greater detail multi-attribute product judgments, first by reviewing the literature about multi-attribute attitude models and then by presenting a number of works that have relaxed some of the assumptions of multi-attribute attitude models and have broadened the investigation on how consumers form their product preferences in a multi-attribute task.

1.2.2 Multi-attribute product judgments

1.2.2.1 Multi-attribute attitude models

Multi-attribute attitude models define objects as bundles of attributes leading to costs and benefits of differential desirability to individuals or segments of the market (Wilkie and Pessemier 1973). This definition underlines the importance of the role played by individuals' cognitive structures in determining the success of marketing strategies. In essence, consumers' beliefs and perceptions should be considered as the main antecedents to brand strengths or weaknesses on relevant attributes.

The discussion about the most relevant issues of these models typically falls within the framework of a basic multi-attribute attitude model. The basic linear compensatory model is given by the following equation:

$$A_{jk} = \sum_{i=1}^{n} I_{ik} B_{ijk} \qquad (1)$$

where:

i = attribute or product characteristic
j = brand
k = consumer or respondent

such that:

A_{jk} = consumer k's attitude score for brand j
I_{ik} = the importance (or salience) weight given to the attribute i by consumer k (i.e., the evaluation of the attribute)
B_{ijk} = consumer k's evaluative beliefs as to extent to which attribute i is offered by brand j (i.e., the extent to which a consumer believes that the object possesses the jth attribute).
n = number of salient attributes.

Attitude toward an object is defined as a composite of the perceived instrumentality of that object as a means of attaining certain goals, weighted by the relative importance or salience of the goals (Day 1972). Substituting "values and beliefs" for "goals", this definition means that attitude is a weighted function of all the evaluative beliefs associated with that object. Evaluative beliefs provide information about the attribute or similarity judgments made by the consumer (Day 1972). As regards the weights employed to define this model, the notions of salience and importance are commonly used. Although these two concepts are often used interchangeably, consumer behavior literature presents studies that focused either on the one or the other. More specifically, salience is defined by Fishbein (1967) as "the

strength of the beliefs about an object" or "the probability that the object is related to the concept, attribute, or other object". This means that a salient attribute is an attribute that consumers consider in brand evaluation (Sampson and Harris 1970). Importantly, the notion of salience has been investigated in the research about information processing in situations of consumers' overload. Since consumers are often overwhelmed by information about multiple product features, product evaluations and choices are often based on those few features that receive attention (Wright 1974), after consumers have screened the overall product information (Haley 1971). Ratneshwar et al. (1997) argued that consumers turn their attention to those product features that provide the benefits they are seeking, that is to those product features that they perceive as salient (e.g. Bettman and Sujan 1987; Haley 1968; Huffman and Houston 1993; Park and Smith 1989; Wright and Rip 1980). On the other hand, the notion of importance of product attributes has been systematically addressed by Jaccard et al (1986). Grounding on Myers and Alpert's (1977) definition, they defined attribute importance in terms of change. Hence, an attribute is perceived as important if a change in the individual's perception of that product attribute leads to a change in the attitude toward the product.

The model presented in equation (1) has an additive form, as much as it assumes that the affective value of an item can be decomposed into affective values for its components (e.g. attributes) which add together to estimate the composite scores. As a result, overall attitude is an algebraic sum of weighted belief scores. This means that when an individual is attributed with additional traits having the same valence as those he was previously attributed with, the overall evaluation does increase (Day 1972; Anderson and Fishbein 1965).

Beyond the additive models, another common form of multi-attribute attitude models is represented by the averaging models. The distinction between additive and averaging models is addressed by Troutman and Shanteau (1976)[1], who examined whether a consumer judges brands by adding or averaging attributes information. The difference between the two models consists in the fact that while adding implies that "the more the better", averaging approach predicts that when consumers process two pieces of information, such as two different attributes, they look at the type rather than the number of information to make a judgment about a brand or a product (McGuire 1976). As a consequence, averaging model predicts that combining mildly positive information with highly positive information produces a less favourable impression than highly positive information alone. In other words, for the averaging model any single attribute importance weight varies according to the weights of other attributes integrated in consumer judgments. So, if the weight of the first attribute increases the real weight of the second attribute decreases. On the contrary, in the adding models each attribute's weight is independent of the other attribute's weight. Furthermore, averaging model predicts that the real weight of each attribute is decreased when a new attribute is included in the judgment.

As reported by Troutman and Shanteau (1976), additive models had been strongly predominant in the research on consumer judgments[2]. However, according to these scholars, additive models are not always able to provide an adequate description of the cognitive processes involved in consumer impression formation. In this respect, previous judgment research in psychology had found extensive support

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[1] See also Anderson (1971).

[2] Troutman and Shanteau report that the only exception was represented by the work of Bettman, Capon and Lutz (1975b). In particular, these authors investigated adding versus averaging models and tested the adding assumption of Fishbein's (1963) attitude model and likewise reported support for averaging.

for averaging information processing (attitude judgments: Youngblood and Himmelfarb 1972; judgments of other persons: Anderson 1974; perceptual judgments: Anderson 1970; decision-making: Lichtenstein et al. 1975, Shanteau 1975; children's judgments of toys: Butzin and Anderson 1973). Consistently, Troutman and Shanteau (1976) demonstrated that consumers evaluate both durable and nondurable products by averaging attribute information rather than by adding it. In other words, consumers seem to look more at the quality of the attribute information than at the quantity. This finding has relevant implications for advertisers because it suggests them to present only the most favourable product information, because adding moderate information – even if it is still favourable – tends to weaken product impression.

Further interesting evidence of the composite consumers' judgments comes from the research on the evaluation of bundles of products or services. As reported by Yadav (1994), traditional economic analyses about bundles (e.g. Adams and Yellen 1976; Schmalensee 1984) begin with the additivity assumption, which predicts that the overall utility of a bundle equals the sum of the bundle items' individual utilities. However, later works (Dansby and Conrad 1984; Guiltinan 1987; Hanson and Martin 1990) highlighted the restrictiveness of this additivity assumption, while some other studies (Goldberg et al. 1984; Gaeth et al. 1990) provided support for the hypothesis that consumers tend to average rather than add individual items' evaluations to form a bundle's overall evaluation. Yadav (1994) proposed an anchoring and adjustment model of consumers' evaluations of bundles. According to this model, consumers' evaluation process begins with the anchor selection stage in which consumers identify the most important item for their evaluation task. The remaining items are

subsequently evaluated following a decreasing order of their perceived importance. Then, consumers make upward or downward adjustments to reflect the new information according to a step-by-step information-processing logic. In Einhorn and Hogarth's (1985) opinion, anchoring and adjustment processes often result in outcomes that can be modelled as weighted average, and Johnson and Puto (1987) argued that averaging is very consistent with anchoring and adjustment. Similarly, Yadav predicted that adjustments made while evaluating a bundle of items result in weighted averaging. In this vein, the overall evaluation of a bundle's items can be expressed as a weighted average of the individual items' evaluations.

Multi-attribute attitude models have been also extensively used to provide a guide for strategic marketing decisions, especially as regards product-positioning issues (Huber and Holbrook 1979). One of the most challenging aspects of designing new products is to find the product features that will best substantiate a desired product positioning (Neslin 1981). In multi-attribute models' view competing brands are represented through their perceived locations (coordinates) in a "perceptual product space" whose axes are relatable to the attributes (Shocker and Srinivasan 1979)[3]. Working with attribute data, Green and Rao (1972) compared a variety of product spaces that can be potentially derived, while Huber and Holbrook (1979) argued that there are important distinctions among various compositional approaches to building product spaces from attribute data. In particular, methods differ in terms of their treatment of affect, ranging from those containing evaluative dimensions, such as principal components analysis, to others, such as partials and/or discriminant

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[3] As Shocker and Srinivasan, among many authors, note, the term product and brand are used interchangeably (see also Day, Shocker and Srinivasan 1978).

analysis, which produce dimensions that are more objective in reflecting homogeneous perceptions across consumers.

1.2.2.2 Multi-attribute judgments with uncertainty, risk and learning

One of the implications of the multi-attribute attitude models is that if one can fully specify the multi-attribute function that describes the cognitive attribute integration rule, one should be able to use it to forecast how consumers' attitude towards a given product will change given changes in one or more of products' attributes (Wilkie and Pessemier 1973). Such forecasts had typically been constrained by the assumption that consumers be fully aware of the value of product attributes at the time of their choice. However, Meyer (1981) presented a model of consumer impression formation which relaxes this assumption. This model has the aim to show how consumers integrate the subjective values of the attributes of alternatives given uncertainty about these values. Such uncertainty is represented both by the limited amount of information available about products' attributes and by the variability present within the attributes. The model shows that when presented with no information about alternatives' attributes, consumers assign a below-neutral utility value to the attribute and then integrate this value with the subjective values of known attributes to yield an overall product evaluation. As regards within-attribute variability, it has the effect of lowering the perceived desirability of that attribute. These findings show that the underlying integration rule is one of averaging.

The multi-attribute models' assumption of consumers' total awareness of the value of the alternatives' attributes had also been previously questioned by Pras and Summers (1978). Their objective was to "develop and test a general procedure for

adapting multi-attribute models to cover decision making under risk" (p. 429), namely the "risk associated with uncertainty about the true brand/attribute ratings". They developed a risk-adjusted measure for brand/attribute evaluations. Consistent with the belief that consumers have a certain degree of uncertainty in their brand/attribute evaluations, Pras and Summers represented such evaluations through a subjective probability distribution over the possible attribute ratings and argued that the risk-adjusted measure of consumers' judgments depends on the mean of this distribution, on its skewness and on the consumers' tolerance for risk for a given attribute with respect to the range of possible attribute ratings. Consumers can be risk neutral, risk taker or risk avoider with respect to an attribute. Risk neutral consumers are indifferent between two distributions having the same mean but different dispersions; on the contrary, risk takers prefer the distribution with the largest variance and, finally, risk avoiders prefer the one with smaller variance. Such a risk adjustment measure was based on the consideration of the potential role of the skewness of the distribution beyond mean and variance. If presented with two distributions having the same means and variances but different skewnesses, risk neutral consumers tend be indifferent between them. On the contrary, risk avoiders should be more sensitive to the upper portion of the distribution and risk avoiders should be more sensitive to the downside portion of the distribution. The consequence is that the mean could be sufficient to capture all the relevant characteristics of the distribution for those who are risk neutral, whereas the variance and skewness should be considered for risk avoiders and risk takers.

Another way to model risk in multi-attribute consumer judgments is given by von Neumann and Morgenstern utility theory (1947)[4], which transforms the independent variable by a function that reflects the decision maker's response to uncertain outcomes. Imagine that a consumer is told that car A has a guaranteed mileage of 25 mpg, whereas for car B mpg is uncertain and it is equally likely to be 30 or 20 mpg. If the consumer prefers car A, he is called risk adverse, whereas if he chooses car B he is called risk taker, and finally if he does not have any preference he is risk neutral. In the case of neutral consumer, the utility of 25 mpg is 0,5 times the utility of 30 mpg plus 0,5 times the utility of 20 mpg. As a consequence, a linear model would apply. On the contrary, risk adverse utility curve would be concave, whereas risk taker function would be convex. Hence, von Neumann-Morgenstern theory reduces to common linear additive models only when consumers are risk neutral, whereas it provides a greater array of functional forms.

Currim and Sarin (1984) provided further support for the importance of modelling consumer preferences when risk is a relevant consideration. They argued that predictions can be improved if the standard multi-attribute attitude models and conjoint models are extended to incorporate risk attitudes. They found that the predictive accuracy of these models was approximately the same as for utility models derived from von Neumann-Morgenstern utilities only in the case of decisions made under certainty. On the contrary, when decisions were made under uncertainty the utility models were shown to have a better predictive accuracy.

Contrary to these papers, Kahn and Meyer (1991) studied situations in which consumers were uncertain not much about the objective value of product attributes,

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[4] It is worth noting that this theory lies outside the consumer behavior domain.

but how to assign a weight to a known attribute when trading off with other attributes (e.g. price). Since trade-off heuristics are often unstable (e.g. Payne 1982; Meyers 1987; Tversky et al. 1988), the weight that a consumer is likely to assign to an attribute is better described by a distribution of possible weights rather than by point estimate (Eliashberg and Hauser 1985). Kahn and Meyer hypothesized that consumers approach weight uncertainty by first imagining a distribution of possible weight values and then taking the subjective expectation of this distribution. Furthermore, they argue that for attributes that increase the status-quo level of utility, uncertainty in weight importance is negatively related to the expected weight for that attribute. Otherwise, for attributes that preserve a status-quo level of utility, uncertainty in weight importance is positively related to its expected weight. In other words, enhancing attributes will be associated with ambiguity aversion whereas preserving attributes will be associated with ambiguity seeking.

Another important limitation of the standard multi-attribute model is to provide a static description of the relationship between consumer judgments of products and their attributes' perceptions, while it does not explicit whether or not the integration rule linking evaluative beliefs about product attributes to product judgments evolves over time. In addressing this limitation, Meyer (1987) analyzed the process by which consumer judgment rules are dynamically updated. In particular, he conducted two experiments to investigate how a multi-attribute judgment rule is learned through induction in a novel product class. In the light of this, Meyer (1987) addressed such an issue, focusing on the process of learning, the determinants of learning rates and the biases in learning across attributes. He found that consumers can be good learners from experience given a proper learning environment. When multi-attribute rules are

deterministic and subjects can access the outcomes of previous judgments, directionally correct forecasts of value are made after as few as four learning episodes. Moreover, a systematic bias in attribute learning exists, by which individuals learn what is associated with a good option more rapidly and with greater accuracy than what is associated with bad ones.

In their study on pioneering advantage, Carpenter and Nakamoto (1989) found that the way in which consumers learn about brands and form their preferences explains pioneers' advantage. Specifically, since when a market is in its early stages consumers do not know much about brand attributes importance, pioneer can drive consumers toward both attributes evaluation and the creation of an ideal attribute combination. In other words, early entrants have the possibility to lead consumers to a learning process about their preference for the product. The perspective adopted by Carpenter and Nakamoto is one for which consumers form their preferences following a three-stage process. The first stage considers consumers prior to be exposed to any brand in the category. In this stage buyers know little or nothing about products in the novel category. This means that the distribution of ideal points across consumers in a vector space is likely to be uniform, because attribute relative values are still ambiguous. The second stage considers consumers after being exposed to the initial trials of the pioneer brand. According to an updating logic, trial lets consumers update their preferences: since in the early stages of the market consumers do not have sufficient information about other alternatives, they evaluate favourably pioneer's attribute combination (Meyer 1987). Then, they update their preferences according to the value of attribute combination they have been learning. The third stage is represented by consumer's evaluation of multiple brands that

typically enter the market after the pioneer. Later entrants generally include me-too or copycat brands, which claim to be just like the pioneer but less expensive, and differentiated entrants, which offer significantly different attribute combinations. Carpenter and Nakamoto argued that pioneers have a market share advantage over differentiated later entrants because of the big difference existing between their attribute combination and the ideal one.

1.2.2.3 Inferential processes and multi-attribute product evaluations

Another extension of the research on multi-attribute consumer judgments is given by the inclusion of the effect of the inferential processes into product evaluations.

The typical multi-attribute model assumes that consumers evaluate a brand in terms of its visible and accessible attributes, which are integrated to form preferences. As I reported above, there are two basic methods of integration of the information. In addition to the classical additive method, some authors (e.g. Anderson 1974; Troutman and Shanteau 1976) have argued that new information can best be accounted for by an averaging process. However, this test requires one to assume that inference across attribute levels does not occur (Fishbein and Ajzen 1975, p. 232).

An alternative perspective is proposed by Huber and McCann (1982). According to these authors, an inferential process may occur in contexts where information about an attribute is missing, i.e. not visible or accessible in the product description. The fundamental characteristic of this process is that visible attributes serve as cues that the subjects use to make inferences about other (invisible) product attributes. Such inferred attributes are combined with accessible attributes to arrive at

preference or choice. Their findings show that omitting an attribute decreases mean purchase likelihood, as though consumers assigned a discounted mean value to the missing attribute. This effect has been shown to be positively related to the importance of the attribute dropped; deleting quality has a greater effect than deleting price. Importantly, Huber and McCann provided strong evidence that even without prompting (i.e. requiring responses to infer the value of the missing attribute) inferences had a significant positive impact on marginal values.

Grounding on Huber and McCann results, Lim et al. (1988) extended the research on inferential processes by making a more rigorous test of inferential model, compared with additive and averaging models, than the test presented in Huber and McCann's study. The main difference with respect to Huber and McCann's model is the operationalization of the inference model, as much as Lim et al. considered not only purchase intentions but also preferences. In this respect, they tested the inference effect on a preference scale in addition to the purchase likelihood scale used by Huber and McCann. Furthermore Lim et al. did not consider the role played by price as one of the attributes. As a matter of fact, since they considered preference formation as a process distinct from intention formation, price may have at least two different roles within these two processes. Finally, Lim et al. replicated the analysis made by Huber and McCann on the three competing models (inference, additive and averaging models) for predicting the effect of inference in a context where information about one of the two attributes was missing. They tested the predictions of the three models more stringently by utilizing one supportive pair of attributes and one conflicting pair of attributes, while Huber and McCann had tested these three competing models only with conflicting pairs of attributes. For supportive attributes,

the inference model predicted an increase in the marginal value of an attribute; the additive model predicted no change, and the averaging model predicted an increase. For conflicting attributes, the inference model predicted a decrease in the marginal value of an attribute; the additive model predicted no change, and the averaging model predicted an increase. The marginal value of an attribute has been defined as the rate of change in the preference as a function of the change in an attribute. These predictions are inconsistent with the predictions of the popular additive models (Lim et al. 1988, p. 315). Lim et al.'s results for conflicting attributes were inconsistent with Huber and McCann's findings because the latter stated that "even without prompting, inferences had a significant positive impact on marginal values" (p. 332). According to Lim et al., when inference on one conflicting attribute based on the other attribute is not induced explicitly, inferences do not have an effect on marginal values. On the contrary, they have a strong effect when they are induced explicitly.

Attribute inferential processes have been also investigated by Johnson and Levin (1985). They argued that when consumers face missing attribute information, they may assign a value to the missing attribute and integrate this value into product evaluation. This is equal to assume that consumers treat missing information in the same way as they treat available attribute information. This contrasts the assumption of both adding and averaging models, which assume that consumers consider only those attributes for which information is available and ignore attributes for which information is not available (Troutman and Shanteau 1976). Starting from the pattern of inferences theorized, for instance, in the work of Huber and McCann (1982), Johnson and Levin proposed a model of inferred information, which considered the

following additive model of information integration based on a single presented attribute A_1 and a missing attribute A_2:

$$R = w_1 a_1 + w_2 a_2^{'} \qquad (2)$$

where R is the evaluation response, a_1 is the subjective value of A_1, $a_2^{'}$ is the inferred value of A_2, and w_1 and w_2 are the weights associated with a_1 and $a_2^{'}$. If $w_1 + w_2 = 1$, this additive model becomes an averaging model. Furthermore,

$$a_2^{'} = ma_1 + k \qquad (3)$$

where m represents the perceived relationship between the presented and the missing attributes and k is a scaling constant. Substituting equation 3 in equation 2, they got:

$$R = (w_1 + mw_2)a_1 + w_2 k \qquad (4)$$

From equation 4 it is possible to argue that when individuals perceive a positive relationship between the two attributes (that is, $m > 0$) they use this relationship to assign values to the missing information, similarly to the effect predicted by averaging model. When individuals do not perceive a relationship between the attributes or they do not use a perceived relationship to infer missing values (that is, $m = 0$) the effect is identical to that of original additive model. Finally, if individuals perceive a negative relationship between the two attributes (that is, $m < 0$) the effect of manipulating attribute 1 will be less when attribute 2 is missing than when attribute 2 is present. As a consequence, this result contradicts the prediction of the original additive model and averaging model, as much as these do not consider inferred values.

As regards k, if $k < 0$, then evaluations based on missing information will be relatively low compared to evaluations based on more complete information; otherwise, if $k > 0$, then evaluations based on missing information will be relatively high compared to evaluations based on more complete information.

Johnson and Levin's results mitigate the conclusion that advertisers should present only the most highly favourable information about product ignoring the less positive features (Troutman and Shanteau 1976). As a matter fact, when missing information is positively related to available information, the consumer's assumptions about the missing information may reinforce available information.

1.2.3 The positive effect of adding trivial features

In addition to the classical economic and behavioral models and to market research techniques, more recent work provides evidence that adding product features increases product evaluation not only when such features are valuable for consumers, but even when they are trivial, or irrelevant.

Trivial features are defined as features that do not provide the consumers with any real benefit. More precisely, trivial attributes have been defined as "those attributes with a trivial and/or subjective relationship to perceived quality as well as objectively irrelevant attributes" (Brown and Carpenter 2000, p. 372). Nonetheless, the definition of trivial attributes includes different types of attributes. In particular, trivial attributes may be those attributes that consumers perceive as "ambiguously positive" even though they do not provide any real benefit (Brown and Carpenter 2000), or those attributes for which consumers have existing preferences (Carpenter et al. 1994). Furthermore, they may include fictional attributes that provide novel

associations without adding any real benefit to the product (Brown and Carpenter 2000; Mukherjee and Hoyer 2001), or attributes that have known value to consumers but are irrelevant to both the brand performance and the consumer choosing the product (Brown and Carpenter 2000; Simonson et al. 1994).

Contrary to the prevalent view of "meaningful" product differentiation (e.g. Porter 1985), Carpenter et al. (1994), argued that brands could be successfully differentiated not necessarily by adding attributes that are meaningful, relevant, and valuable for consumers, but also by introducing trivial features, i.e. those features that "are irrelevant for providing benefits to consumer, even though they could appear valuable" (p. 339). In particular, they studied consumer brand preferences in a market for multi-attribute products in which brands differed on a common set of attributes, but one of these brands differentiated itself by introducing a unique but irrelevant attribute. These scholars also reported that a similar strategy had been adopted by Procter & Gamble for the instant Folger's coffee. This product had been differentiated from competitors by adding "flaked coffee crystals", created by a "unique patented process": the way in which this new feature was presented to consumers implied that flaked coffee crystals really improved the taste of the coffee. However, at a closer examination, this feature is not relevant for the instant coffee to taste better. Furthermore, Broniarczyk and Gershoff (2003) cited the Pantene Pro-V shampoo as another example of trivial differentiation. This brand differentiated itself from other shampoos on the basis of its pro-vitamin ingredients. Even though consumers might believe that vitamins improve hair health, according to *Consumer Report* vitamins in shampoo have no beneficial effect on hair.

More generally, it could happen that an attribute that implies greater benefit for consumers in reality does not provide the implied benefit. Carpenter et al. (1994) show that differentiating a brand by adding a trivial feature (so adopting the so-called "meaningless differentiation") is in many situations a viable strategy for firms to gain or sustain their competitive advantage. The rationale for this effect is that consumers tend to change their decisional structure and to give a relevant weight to new information in their product judgments. As a result, consumers may infer the attribute's value and, in some cases, conclude that it is valuable. When consumers are exposed to a trivial attribute and do not have any information about its irrelevance, they just rely on this type of information to formulate preference judgments. In particular, consumers could be positively influenced by advertising claims and tend to find confirmation about the value of the irrelevant attribute through product trials. The cognitive mechanism proposed is derived from communication theory and predicts that consumers are likely to value positively an irrelevant attribute because they infer that the very existence of this attribute means that the firm has spent a considerable amount of time and money to promote it and then the trivial attribute should be valuable (pragmatic component of product information). Furthermore, such an irrelevant attribute conveys an advantage to the differentiating product because consumers perceive that it is definitely differentiated with respect to the alternative options. Carpenter et al.'s results show that consumers judge more favourably a brand differentiated on the basis of an irrelevant attribute than a brand that does not have the irrelevant attribute.

Even more interestingly, these scholars provided evidence that consumers give a value to "meaningless differentiation" even in the case in which they are aware of the

real irrelevance of the new differentiating attribute. The rationale is that this attribute makes the differentiated brand distinctive to the eyes of consumers. In other words, a cognitive bias (Gilovich 1981) for positive valuation in consumers' judgments is likely to occur, for which they implicitly continue to assign a value to the irrelevant attribute even knowing that it does not provide the implied benefits.

Overall, these results show that subjects prefer the differentiated brand regardless of the information revealed to them, indicating that the primary impact of the irrelevant attribute is to increase the salience of the differentiating brand.

On the other side, this analysis assumed that consumers only have attribute information available to them and, hence, are not required to make inferences. However, Carpenter et al. also considered the situation in which consumers are exposed to price as an additional source of information about the value of the differentiating brand. Their findings show that when a brand that was already differentiated by an irrelevant attribute was further distinguished by high price, brand evaluation increased, regardless of the revelation of the irrelevance. On the contrary, at a relatively low price irrelevant attributes were not valued, regardless of whether or not consumers acknowledged their true irrelevance.

As further evidence of the importance of the differentiation based on adding features to product, Kraus and Carpenter (2005) have studied the role of this differentiation strategy in affecting the process of buyers' preference formation. Their basic tenet is that the success of differentiation depends on the ability of the firms "to create a choice context in which a brand's unique difference becomes valuable" (Kraus and Carpenter 2005, p. 4). In particular, they were interested in understanding how the context of brand choice influences the perceived diagnosticity

of brand differences. Differentiation is defined both as being superior to competitors along the existing attributes and as introducing a novel, unique attribute. For the aim of my research I will focus my attention on the latter strategy, defined as "attribute innovation strategy" (Kraus and Carpenter 2005, p. 6).

The role of the context in determining the success of the differentiation has been described through three factors: the ambiguity of the differentiating attribute, the association of the brand offering it, and its price. Brand attributes are defined as ambiguous when their meaning, and therefore their value, is unclear, i.e. ambiguous. In this case consumers find it difficult to order their preferences among different alternatives. Kraus and Carpenter show that attribute innovation strategy increases the relevance of the differentiating attribute both if that attribute is unambiguous and if it is ambiguous. As regards the effect of attribute innovation on brand preference and choice, as well they show, consistent with previous research (e.g. Carpenter et al. 1994), that a new attribute increases brand preference not only in the case of an unambiguous attribute, but also in the case of an ambiguous attribute. In fact, when the newly introduced attribute is ambiguous the overall preference for the differentiating brand is shown to increase, however trivial that might be. Therefore, they demonstrated that uniqueness, whether that difference is based on an ambiguous or unambiguous attribute, has value for consumers. As regards brand association, they argued that consumers are likely to use it to resolve the ambiguity and, hopefully, consciously judge the value of the differentiating attribute and the brand. Such a resolution has been assumed to depend on the degree of consistency between brand association and the association consumers have about the unique attribute. Kraus and Carpenter's results show that in the case of low perceived inconsistency

between the differentiating brand and the differentiating attribute, consumers are able to resolve it, so eliminating the ambiguity and reach a judgment about attribute and brand; as a consequence, the attribute was shown to be perceived as meaningful and the preference for the differentiated brand increased. Otherwise, if the perceived inconsistency between the brand and the attribute was high, consumers had more difficulties to resolve it; as a consequence, the perceived importance of the attribute in brand choice reduced as well the value of the brand offering it. As a matter of fact, the presence of incongruity is likely to generate negative affect transferred to the differentiating brand. Such findings suggest that a new feature may have either a positive or a negative effect on brand evaluations, depending on its degree of perceived consistency with the brand association. This result is strongly relevant because it is in sharp contrast with the traditional assumption of the additive choice models, which predict that adding a valuable attribute will always increase brand preference. Finally, Kraus and Carpenter analyzed price as further factor that may influence consumers' judgments of the attribute innovation strategy. Specifically, they predicted that the effect of price on preference for a differentiated brand is higher (lower) in the case of high (low) attribute ambiguity. In fact, when the attribute is ambiguous consumers have been shown to use price cues to draw inference about its importance. As a consequence, attribute innovation strategy has been found to increase (decrease) the perceived importance of the attribute when the differentiating brand is priced at premium (discount). Thus, when price is high consumers perceive that the differentiating attribute has a positive valence and is relevant to the choice task. On the contrary, Kraus and Carpenter's findings show that when price is relatively low, consumers are likely to infer that the differentiating

attribute is not very important compared to the others, even though it could be not a bad feature.

Kraus and Carpenter's (2005) study contributes to the recent research about the effect of adding new features to products or brands on consumer judgments by providing evidence of the importance of the context in determining the directionality and the magnitude of such an effect.

1.3 Mixed effects of adding product features on product evaluation

1.3.1 Factors that moderate the effect of adding new features on product evaluation

Contrary to the studies analyzed in the previous section, recent research has shown that adding features does not always improve product evaluations. In fact, there are some factors that can moderate the effect of the introduction of new features on the evaluation of the product.

For example, the impact of new features on product evaluation can depend on the attribute-specific associations. In this respect, Broniarczyk and Gershoff (1997) revisited the concept of meaningless differentiation proposed by Carpenter et al. (1994). In particular, they extended the analysis of Carpenter et al. arguing that even though meaningless differentiation leads consumers to turn their attention toward the meaningless attributes, it is not obvious that consumers always infer a positive value for them. In particular, they focused on two points. First, they investigated the factors associated with the positive inference that consumers draw from meaningless differentiation. Second, they examined if there are some specific contexts in which

meaningless differentiation is more likely to affect consumers' decisions relative to other meaningful attribute information. As regards the first point, Broniarczyk and Gershoff replicated the empirical analysis conducted by Carpenter et al. by including the manipulation of the previously unexamined effect of attribute label attractiveness, which is considered as a factor that moderates the impact of meaningless differentiation on consumers' evaluations. In particular, when the differentiated attribute is presented by a more attractive label, it will be positively valued; the opposite occurs when the attribute is presented by a less favourable label. For example, Broniarczyk and Gershoff argued that in their experiment Carpenter et al. labelled as "regular" the baseline attribute, whereas "alpine class" was used to label the trivial differentiating attribute[5]. Labelling an attribute as "regular" could imply that any differentiation is positive. As regards the second point, Broniarczyk and Gershoff showed that meaningless differentiation exerts its strongest effect when there is no existing meaningful differentiation between the alternatives.

In addition, Broniarczyk and Gershoff (2003) proposed a different approach to the investigation of meaningless differentiation. While previous research had shown that meaningless differentiation was effective even when attribute's null value is disclosed either because of the uniqueness of this attribute (Carpenter et al. 1994) or the consumer's use of the trivial attribute for decision resolution (Brown and Carpenter 2000), they argued that the extent to which firms may gain a competitive advantage from this strategy also depends on brand equity, which is used as a cue to infer the value of a trivial attribute, choice context and the timing of the disclosure of meaningless, which is shown to affect the future evaluation of the differentiating

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[5] The product used was a down jacket. For Carpenter et al. 's (1994) experimental analysis, see their original paper.

brand. A further result of Carpenter et al.'s (1994) study had been that consumers may use price information to make inferences about the trivial attribute. In particular, when consumers become aware of the trivial attribute's null value the valuation of such attributes at higher price levels results attenuated. On the basis of this finding, Broniarczyk and Gershoff (2003) focused on the situation in which the attribute's null value is explicitly disclosed and argued that, at a first look, price levels can be assimilated to brand equity. As a consequence, trivial differentiation could be ineffective in presence of disclosure about the real attribute's value for high equity brands and in every case for low equity brands. However, they have shown that the effect of brand equity on consumers' evaluation of a trivial attribute might be more complex. Brand equity is assumed to be a relevant cue for consumers to manage the uncertainty when making evaluations. While in the case in which consumers are unaware of the meaningless of the trivial attribute both low and high equity brands are able to gain share from close competitors, when consumers are aware of the attribute's null value, they face the uncertainty deriving from their need to understand why such a differentiation strategy has been definitely made. In this case, brand's performance association is assumed to moderate consumers' judgments. In particular, high brand equity is likely to provide consumers with a positive inference about the trivial attribute even if they are aware before choosing that the attribute is not beneficial. So, high brand equity has a mitigating effect on the irrelevance of the attribute. Otherwise, low brand equity is perceived by consumers as a confirmation of their negative expectations about the performance of brand's attributes. As a consequence, high equity brands are more likely than low equity brands to benefit from offering a trivial attribute in the case of disclosure of its irrelevance.

Furthermore, Broniarczyk and Gershoff have shown that information provided by brand equity could not be sufficient for consumers to completely resolve the uncertainty raised by attribute's value disclosure. As a matter of fact, contextual information can also help them make inference about a trivial attribute and it is likely to interact with brand equity to impact consumers' valuation of such attributes. In a context in which a trivial attribute is uniquely offered brand equity effect is reinforced. Consequently, high equity brand is expected to offer unique advantage over mid and low equity brands. On the contrary, when a trivial attribute is shared among higher and lower tier brands, lower tier brands will gain a benefit from introducing a trivial attribute. At the same time, high equity brands offering a trivial attribute will suffer from sharing this attribute with a lower equity brand. As regards the effects of trivial attribute strategy on the evaluation of the brand, Broniarczyk and Gershoff examined how introducing a trivial attribute affects a brand's subsequent ability to introduce a new attribute by measuring brand dilution. They demonstrated that post-choice disclosure has a greater negative effect on subsequent differentiation than pre-choice disclosure and that post-choice disclosure is more likely to affect the consumers who had originally chosen the trivially differentiated brand.

Product differentiation based on the introduction of new features has also been studied to analyze the effects of these features on brand choice. In this respect, Nowlis and Simonson (1996) examined which factors determine the effect of a new brand feature on company sales and market share. Grounding on two principles, multiattribute diminishing sensitivity and performance uncertainty, they focused on the characteristics of the brand to which new features are added, such as its overall quality reputation and its level of existing features, as important factors that explain

the effect of these features on brand choice. According to multiattribute diminishing sensitivity principle, the new features add more value to a relatively inferior product than to a superior one. This assumption is in sharp contrast with the basic assumption of multiattribute additive models and conjoint measurements about utility functions. A new (positive) feature is assumed to be more noticeable against the background of an otherwise inferior option and, as a result, an alternative that is superior to a competitor on other dimensions is likely to gain less from the introduction of another (positive) feature. This tenet is based on the assimilation-contrast framework, according to which when a new positive feature is added to a relatively superior brand it will be assimilated in the perception of superiority and, as such, it will have little impact on the product evaluation. On the contrary, when a new positive feature is added to an otherwise inferior option a contrast effect will occur, which will make the new feature have a relatively large impact on the overall product evaluation. As regards performance uncertainty (see also Meyer 1981), Nowlis and Simonson have shown that a greater uncertainty is more likely to occur when the feature is added to a relatively inferior brand. Hence, high quality brands and products with more existing features gain more from a new feature than low quality brands or products with fewer features. These two assumptions lead to opposite predictions. In fact, according to multiattribute diminishing sensitivity, a product with inferior existing features and a brand associated with lower perceived quality are expected to gain more from introducing a new feature, whereas they are expected to gain less based on performance uncertainty. Nowlis and Simonson have shown that multiattribute diminishing sensitivity plays a stronger total effect than performance uncertainty. As

a consequence, a new feature is more likely to contribute to a product with inferior features or brand name than to a product with superior features or brand name.

In addition to the attribute specific associations (Broniarczyk and Gershoff 1997), to brand equity (Broniarczyk and Gershoff 2003) and to brand quality/reputation (Nowlis and Simonson 1996), Brown and Carpenter (2000) have found another moderator of the impact of adding a new feature on brand evaluation, namely the size of the choice set. They proposed a reasons-based account for the valuation of irrelevant attributes with the objective to resolve the controversy existing in literature about whether the effect of introducing a trivial feature on product evaluation should be considered positive or negative. In fact, whereas some empirical work had argued that adopting a meaningless differentiation produces positive effects on consumer's evaluation of brand and its choice probability (Carpenter et al. 1994), other research had showed that such a strategy leads to a reduction of brand choice (Simonson et al. 1994), or these features may be misleading for consumers in making their choice decisions (Hutchinson and Alba 1991). Brown and Carpenter's reasons-based approach adopted a two-way decisional process, whose basic tenet is that consumers choose trying to select those options that appear the most justifiable to them. In this respect, consumers prefer to choose on the basis of easily justifiable reasons, namely reasons based on important, diagnostic attributes: if a brand is clearly superior to another on these attributes, the choice will be obvious and, therefore, fully justifiable. Otherwise, if none of the brands is superior to the others on relevant dimensions, then consumers will choose according to reasons based on trivial features (Shafir et al. 1993). This process is called "instrumental reasoning process" (Brown and Carpenter 2000, p. 373) because it predicts that consumers make their evaluations in

a way that is instrumental to achieve task goals. More specifically, these scholars argued that trivial attributes' valuation depends not only on their value but also on the composition of the choice problem: if consumer faces a three (or more)-brands choice set in which only one of the options has a trivial attribute, the valuation of this differentiating attribute is more likely to be positive than in the case of two-brands choice set. Similarly, they demonstrated that if two out of three brands in a choice set possess the trivial attribute, a negative valuation is more likely than if only one of the three brands possesses such an attribute. In other words, these authors have found that consumers are "context sensitive" and instrumental decision makers because they confer value that lets them make choices (Fisher et al. 1999). These results are explained by the account that in the case of two equally valued alternatives subjects tend to choose the alternative that performs better on the more relevant dimension (Slovic 1975), according to the lexicographic approach to product evaluation (Tversky et al. 1988). Otherwise, when two or more brands are differentiated only by a trivial attribute, consumers are not provided with clear, relevant reasons to choose one or the other alternative. Nonetheless, Brown and Carpenter have shown that it is not infrequent for trivial attributes to have a tangible effect on choice. When considering more than two alternatives differentiated only because one of them possesses a trivial attribute, consumers must develop a reason to choose only one of the alternatives available at the moment, so they feel motivated to search for positive reasons in favour of this alternative (Kunda 1990). They argued that this search will be biased because the presence of trivial attribute is the only discriminating factor between the alternatives and, as such, it is perceived to "reassure" consumers that they are making a confident choice. As a result, positive reasons for the trivial

attribute are more likely than negative ones. On the contrary, if there are only two alternatives in the choice set, either positive or negative reasons can resolve the conflict and the search for reasons will not be biased.

In sum, in absence of other diagnostic information consumers tend to temporarily treat trivial attributes as though they have value to resolve the dilemma of choosing between otherwise comparable alternatives. In conclusion, Brown and Carpenter (2000) have shown that trivial attributes' evaluation may be "context dependent" as much as it depends on attribute's ability to expedite a final choice and not necessarily on the underlying belief that it really improves product performance.

1.3.2 Negative inferences generated by new features

In the previous paragraph I have analyzed some work showing that adding features may not lead to an increase in product or brand evaluation, because of the effects of some contextual factors on consumers' judgment. In this section I analyze research that indicates that new features can even have a clearly negative effect on consumers' evaluations.

For instance, Hutchinson and Alba (1991) have investigated several situational factors contributing to successful consumer learning. Consumers are thought to review multi-attribute information about a specific product, given that only one of the attributes is really diagnostic (or relevant) of the target concept. Hutchinson and Alba argued that this learning involves a categorization process which implies that consumers need to learn which attributes are really important when a new product category enters the market. In other words, consumers are often involved in concept-formation tasks which consist in learning how to best discriminate among the

different brands included in the choice set. This discrimination may be difficult when the diagnostic attributes are technical and/or non-obvious. In such cases, brands may share some irrelevant, unneeded attributes that can definitely play an important role in consumers' judgments and choice. Hutchinson and Alba (1991) focused on the factors that are likely to increase analytic process during concept formation in consumer settings. Correct analytic classification of brands occurs when classification is based on attributes that are diagnostic of class membership. Diagnostic (or "criterial") attributes are defined as those attributes that are used to define a concept. Conversely, holistic classification occurs whenever overall similarity of brands is taken as the criterion for class membership. In this case, irrelevant attributes may be considered into the decision, in addition to diagnostic ones, so leading to wrong judgments. Hutchinson and Alba (1991) argued that consumers' ability to identify diagnostic attributes depends firstly on consumers' level of task-involvement. Another class of factors that can influence analytic ability is given by external factors, such as the number of attributes that should be processed by consumers. In particular, a problem of overload, or complexity, arises when the number of attributes to be examined increases. A third class of factors is given by the perceptual salience of relevant and irrelevant attributes: when a diagnostic attribute is salient, it should be identified more easily, whereas when an irrelevant attribute is salient analytic processing is likely to be inhibited.

In conclusion, Hutchinson and Alba have shown that adding irrelevant attributes has the negative effect to draw attention away from diagnostic, relevant attributes.

Another evidence of the negative effect of the introduction of trivial features on product evaluation is provided by Simonson et al. (1994). Consistent with

Hutchinson and Alba (1991), they predicted that introducing a new product feature may have an effect on the other product features and, in particular, may lead consumers to make negative inferences. Their general proposition is that adding a trivial feature may decrease the overall attractiveness and the choice probability of the product. This effect is predicted to occur not only when consumers believe that they are paying for the unneeded features, but even when these features are offered at no charge. What are the psychological mechanisms that explain consumers' avoidance of unneeded features and, as a result, a decrease in product choice probability?

The most important cited by Simonson et al. are:

- Consumers' inference about product's value and quality: consumers could believe that they are paying for the unneeded feature and realize that product is not valuable for them. In addition, they could infer that, because of the unneeded feature, the product is of low quality.

- Reasons-based approach: in essence, consumers look for a choice that both be justifiable to themselves and prevent them to be criticized by others; differentiating a product by adding a nonvaluable feature provides a reason against choosing that product.

- Dilution effect: irrelevant, nondiagnostic features have the effect to moderate people's predictions (e.g. Tetlock and Boettger 1989) because they lead to a dilution of the effect of diagnostic, relevant product features.

- Averaging: when a trivial features is added to a product, the average value of the product as a whole and its choice probability decreased (Anderson 1971; Troutman and Shanteau 1976).

1.3.3 Learning costs and "feature fatigue"

Some recent work has focused on the negative effects of the introduction of new product features on consumers' ability to use the product. The basic tenet of this research is that new features can make the product overwhelming and too complex for consumers, so often leading them not to perceive an overall improvement in product evaluation.

In this respect, Mukherjee and Hoyer (2001) have analyzed a particular characteristic of a new product feature: its degree of familiarity to consumers. Since the case of the introduction of familiar product features had been studied extensively (Carpenter et al. 1994; Simonson et al. 1994; Nowlis and Simonson 1996; Broniarczyk and Gershoff 1997; Brown and Carpenter 2000), Mukherjee and Hoyer have examined the impact of novel attributes on consumer judgments and choice. In particular, they predicted that two variables, product complexity and attribute information discovered during the search, were likely to moderate the effect of novel attributes on product evaluation. Such predictions are based both on inference-making (Broniarczyk and Alba 1994; Huber and McCann 1982; Johnson and Levin 1985; Johnson and Payne 1985; Lim et al. 1988) and hypothesis-testing literatures. As regards the inferential process, it is predicted that consumers make inferences about novel attributes based on a cost-benefit comparison. Because of their lack of knowledge about such novel features they make inference both on the potential benefits of the novel attribute (i.e. value-inference), and on its potential costs (learning-cost inference). Negative inferences are given by the learning costs, which are defined as the cognitive burden necessary for consumers to gain the knowledge to effectively use the product after the introduction of the novel feature (see also

Klemperer 1987; Shugan 1980). Such learning-cost inferences about the novel features are assumed to be higher in the case of high complexity products than in the case of low complexity products (e.g. Farrell and Shapiro 1980; Keller and Staelin 1987); consumers are likely to value more negatively high learning-costs inferences than low learning-cost inferences (Fiske and Taylor 1984) because they are typically adverse to mental effort (Shugan 1980; Keller and Staelin 1987). Mukherjee and Hoyer have found that the degree of product complexity determines whether the introduction of novel attributes has a positive or a negative effect on product evaluations. Specifically, in the case of low-complexity products, adding novel attributes is likely to improve product evaluation; as a matter of fact, consumers make high value and low learning-cost inferences because the mental effort required to accumulate knowledge for effective usage is relatively low. Conversely, in the case of high-complexity products, adding novel attributes is likely to reduce product evaluation. In fact, in this case both high value inferences (deriving from consumers' beliefs about the improvements in product performance) and high learning-cost inferences occur. Based on findings of previous research (Herr et al. 1991; Skowronski and Carlston 1987), Mukherjee and Hoyer predicted that negative information plays a stronger role than positive information on consumers' evaluations. Consistently, they have shown that learning-cost inferences are more impactful than high value inferences. As a result, the addition of novel attributes to a high-complexity product had the effect to reduce product evaluation. As regards hypothesis-testing, it is argued that consumers form their judgments about novel features by integrating their initial inferences with additional information they search for to check the validity of their inferences (e.g. Huber and McCann 1982). In other

words, consumers are assumed to test their initial hypotheses about the features using subsequently collected evidence (see also Hoch and Deighton 1989). In the specific case of the introduction of novel product attributes, consumers were assumed to search for additional information that confirmed their initial hypothesis about novel attributes. In particular, consumers had two inferential hypotheses, one regarding value inference and the other regarding learning-cost inference. When novel attributes are added to low-complexity products, both of these two initial hypotheses assume positive valence. As a consequence, based on confirmatory bias, when consumers were subsequently exposed to ambiguous or mixed information about the novel attribute they paid more attention to the positive than to the negative part of the information encountered during the search. Furthermore, the positive effect of novel attributes on low-complexity product evaluation has been shown to be stronger after exposure to ambiguous information during search than before search. Otherwise, when novel attributes are added to high-complexity products value inference and learning-cost inference take opposite values. In particular, consumers had a positive valued hypothesis of high value and a negative valued hypothesis of high learning-cost. Since negative inferences are assumed to be more important than positive ones consumers tend to pay more attention to negative than to positive information about novel attributes found during ambiguous search.

In sum, Mukherjee and Hoyer have shown that the effects of novel attributes on product evaluation are accentuated by search, even when the information encountered during the search is objectively ambiguous in nature. The main contribution of Mukherjee and Hoyer's (2001) study is to provide evidence of the existence of a cost-benefit trade-off deriving from adding new features to products.

Hence, in addition to the benefits accruing to consumers from using an enhanced product having greater functionalities, there are also costs for consumers in terms of greater difficulty to use the product after a new feature has been introduced. Some of the works analyzed so far have highlighted the growing cognitive burden for consumers as the product becomes more differentiated. For instance, Hutchinson and Alba (1991) have argued that consumers' ability to use attribute information to make "correct" product judgments may be negatively influenced by the degree of consumer overload (see also Chernev 2001). This overload may derive from the growing number of attributes used to differentiate a product. Furthermore, Mukherjee and Hoyer (2001) have found that consumers tend to make an inference about the benefits associated with the new attribute as well as another kind of inference about the learning costs associated with gaining the knowledge necessary to deal with the new attribute and, finally, to use the differentiated product. Furthermore, by considering the possible negative effects of novel attributes on high-complexity product evaluation, they provided a possible explanation for consumer aversion toward high-tech innovations (see also Mick and Fournier 1998; McLaughlin and Skinner 2000). This arguing finds further theoretical support in the research on information overload, which suggests that individuals are vigilant about the mental effort required to process the information (e.g. Keller and Staelin 1987), and in the need for cognition literature which indicates that individuals are sensitive to cognitive effort (e.g. Cacioppo et al. 1983).

In Dobscha and Mick's (1998) words, "certain features of products frustrate and overwhelm consumers" by producing negative feelings, such as anxiety and stress (Mick and Fournier 1998). Being associated with learning costs and mental effort,

new features can muddle consumers and be perceived as one source of frustration, anxiety and stress. Huffman and Kahn (1998) investigated the problem of consumer overload and confusion in the context of retailer strategies. They argued that large assortment strategies offering a wide variety of items within a category can backfire, because the emerging complexity can produce information overload and turn consumers into dissatisfaction and frustration (see also Jacoby et al. 1974). This issue can be even more severe if retailers try to carry this strategy to the point of looking for customization, so aiming to provide consumers with exactly what they want.

The trade-off between the benefits and costs of adding new product features has been also addressed by Thompson et al. (2005). They have used the concept of "feature fatigue" to indicate the information overload for consumers after the introduction of many features. Empirical evidence indicates that consumers may experience negative emotional reactions, such as anxiety or stress in response to product complexity (see also Mick and Fournier 1998). The increase in the complexity of the products results from companies' desire to enhance the products by providing greater functionality for consumers. However, too many features can make the products overwhelming for consumers, leading to dissatisfaction (p. 431).

Broadly speaking, when new features are added to a product, consumers' perceptions are based on the expected value of the functionalities provided by new features (e.g. Carpenter et al. 1994; Srinivasan et al. 1997; Mukherjee and Hoyer 2001; Brown and Carpenter 2000) and on the costs of this strategy (Mukherjee and Hoyer 2001; McLaughlin and Skinner 2000; Payne 1982; Payne et al. 1998; Chernev 2001), meant as difficulty to learn the new features (Klemperer 1987; Shugan 1980; Mukherjee and Hoyer 2001). Thompson et al. (2005) formalized such a trade-off

introducing two concepts, product capability (i.e. the consumer's beliefs about the product's ability to perform the desired functions) and product usability (i.e. the consumer's beliefs about the difficulty of learning and using the product), and focused on the investigation of how consumers balance their competing needs for functionality and ease of use when evaluating products. Differently from all the studies discussed above, which have measured consumers' perceptions in response to the addition of a single product feature, Thompson et al. analyzed the consequences of increasing the number of new product features on both product capability and product usability. Their findings show that as the number of new product features increases, product capability increases, whereas product usability decreases. Given these two opposing outcomes, the question becomes to determine the net effect of increasing the number of new product features on overall product evaluations. Do consumers give more weight to the benefits or to the costs of the differentiation strategy in their product evaluation? Thompson et al. addressed this question by analyzing the effect of increasing the number of product features on overall product utility. They have found that this effect depends on the relative weights that consumers give to capability and usability in their judgments. In particular, consumers have been shown to give more weight to product capability in their evaluation before using the product than in their evaluation after using the product, whereas they give more weight to product usability after than before product use. The explanation for these effects is based on the differences in the level of the construal (Liberman and Trope 1998). Research on this topic had shown that when people evaluate options for the distant future, they favour highly desirable options that are less feasible over less desirable options that are highly feasible. However, the

opposite is true when people evaluate options in the near future. The relative weights of desirability and feasibility change because the construal of more distant future events tends to be more abstract, favouring desirability, whereas the construal of near future events tends to be more concrete, favouring feasibility (Liberman and Trope 1998)[6]. In this vein, Thompson et al. (2005) have shown that before using the product, consumers are more focused on desirability issues, such as product capabilities, and less focused on feasibility issues, such as usability, than they are after using the product.

In conclusion, Thompson et al.'s results provide support for the existence of a cognitive and decisional trade-off for consumers dealing with the introduction of new product features. What appears to be desirable in prospect is not necessarily good in practice. As a matter of fact, when using an enhanced product, consumers may become frustrated and dissatisfied with the number of new features they chose before using the product. In sum, "product capability may become too much of a good thing" (Thompson et al 2005, p.440). The framework proposed accounts for this trade-off by varying the temporal frame of consumers' evaluations: consumers are shown to focus more on value inference or on learning-cost inference depending on whether their overall evaluation is made before or after using the enhanced product.

1.4   Conclusions

In this chapter I have provided an overview of the possible effects of adding features on product evaluation as reported in the literature. I started by presenting evidence about the positive effects, describing the most relevant approaches that

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[6] I will explain temporal construal theory in more depth later in the work.

support the belief that additional features make the products more appealing for consumers. After having illustrated the similar findings of economic theory, multi-attribute attitude models and market research techniques, I have focused on multi-attribute product judgments. The basic tenet of multi-attribute models is that product evaluation or utility is a function of subjects' evaluation of product attributes. The relationship between overall product evaluation and attributes' evaluation is substantiated by a given integration rule that consumers use to "compose" the different pieces of information represented by the different product attributes. Within multi-attribute product judgments, I have focused on multi-attribute attitude models, first describing the basic additive model that predicts that adding valuable product attributes improves consumers' evaluation, then illustrating an alternative view of these models, the averaging one. In addition to this, I have presented some extensions of the basic multi-attribute attitude model based on relaxing some of its fundamental assumptions. In particular, my analysis has been centred on the concepts of uncertainty and risk in consumer evaluations of product attributes, on the possibility that consumers gradually learn how to integrate the attributes' information, and on the inferential processes employed by consumers when the information about one or more product attributes is missing. Finally, evidence about the positive effects of adding features that are trivial and not objectively valuable for consumers has been presented to complete the analysis of the positive effects of adding features on product evaluation.

In the following section, I have focused on the evidence about more mixed effects of adding features on product evaluation. The analysis has been conducted by describing the most relevant studies that have shown that adding features does not

always improve product evaluation. In particular, I have discussed those works that have found some contextual factors explaining when a new feature could be not beneficial in terms of product evaluation. Second, I have presented some research about the negative effects of new features induced by the negative inferences that they generate when they are added to products or brands. Finally, I have focused on some recent work showing that adding features to products may not lead to improvements in product evaluation because of the learning costs generated by new features. This work have found that adding features may generate negative emotional reactions deriving from the increase in the complexity of the products as features are added to products.

Two general points can be made about the research in this field. First, almost all the studies discussed here have considered the case of the introduction of one single product feature, focusing either on competitive scenarios in which products differed on a single feature (e.g. Carpenter et al. 1994; Brown and Carpenter 2000; Nowlis and Simonson 1996), or on "stand-alone" evaluations of products, that is comparing the evaluations made before and after the introduction of the new feature (Mukherjee and Hoyer 2001). In contrast to previous research, Thompson et al. (2005) have analyzed experimentally the effect of manipulating the number of new features on product capability, product usability and overall product utility, asking subjects to evaluate different versions of the single product, each enhanced with a number of features. This knowledge seems to be important because sheds light on consumers' ability to perceive benefit from adding more features at once.

Second, the analysis of the literature presented in this chapter supports the belief that the introduction of additional features on products may lead to benefits

associated with the increase in the functional value of the products, but also costs associated with the need for increased learning and overload. As a consequence, product evaluation after adding features often depends on how consumers balance these opposing features.

This finding should be seen as a necessary acquisition in the investigation of the effects of the introduction of new product features because it is in sharp contrast with the traditional additive models that predict that the success of adding product features depends only on the inherent value of the new attributes. According to the classical models, when a new feature is positively evaluated it improves consumers' judgments of the product. Contrary to this view, more recent work provides support for the important role that many factors other than the inherent value of the attributes added to brands are likely to play in determining consumers' judgments.

However, few studies have accounted for this cost-benefit trade-off, investigating the conditions under which adding features enhances product evaluation and the conditions under which this does not occur. For instance, Mukherjee and Hoyer (2001) have found that whether a novel feature have positive or negative effect on evaluations depends on the complexity of the product. They have shown that consumers rely more on learning-cost than value inference when such a novel feature is added to high-complexity products, whereas they rely on both of these inferences when it is added to low-complexity products. In contrast, Thompson et al. (2005) have accounted for this trade-off by arguing that overall product utility depends on the weights that consumers assign to product capability and product usability, suggesting that the former weighs more in the evaluations that precede the use of the product enhanced with new features, whereas the latter weighs more in post-usage

evaluations. Hence, when the evaluation is made before product use, as the number of product features increases, overall product utility increases, whereas when the evaluation is made after product use, as the number of product features increases product utility does not increase. More recently, Gill (2008) has studied the case of convergent products (CPs), and has found that in the case of CPs with an utilitarian base, adding an incongruent, hedonistic feature is valued more than adding a congruent, utilitarian one, whereas for CPs with an hedonistic base product, adding an incongruent, utilitarian features is valued less than a congruent, hedonistic one.

In the light of this dearth of empirical investigations of the cost-benefit trade-off following the introduction of new product features, other accounts for product evaluations warrant consideration. In particular, what remains unclear from previous investigations are the constructs that determine the effect of adding features, explaining when it leads to an increase in product evaluation and when it does not.

That said, in the next chapter I present my theoretical model, which contributes to this literature by predicting that consumers' evaluations as more features are added to the product depend on what kind of features are added. I ground on schema-congruity theory, and investigate the cognitive process which is associated with the degree of product congruity of the features added and which drives consumers' evaluations as more features are added to the product.

CHAPTER II

A theoretical framework for product evaluation after adding features

2.1 The role of product perceived congruity of the features

In this thesis I propose an innovative framework for explaining product evaluation after the introduction of new product features. This model investigates the mechanisms underlying consumers' evaluations of the product as the number of features increases. Hence, I do not limit to focus on adding one new feature, as most of previous research, with the exception of Thompson et al. (2005), has done. Such consumers' evaluations are investigated by considering the perceived congruity of the features added with the base product as a variable that moderates the effect of increasing the number of features. In this way, I argue that adding more features has an effect that is dependent of the kind of the additional features. This understanding helps address the questions when adding more features increases product evaluation, and what theoretical mechanisms determine consumers' reaction to adding more features.

The explanation proposed for the effects I find is based on two constructs, cognitive elaboration associated with the product congruity of the features, and temporal construal, which acts on consumers' ability to resolve the moderate

incongruity as the number of features increases. The role of these constructs is detailed with specific research hypotheses.

In the light of this theorizing, the framework proposed is based on the predictions of the research on categorization and, more precisely, of the research on schema congruity. In the next paragraph, I describe the main findings in categorization research, while the following section includes a review of the literature on schema-congruity. Grounding on this theorizing, in the last three paragraphs I present my research hypotheses.

2.2   Categorization research: an overview

The notion of product perceived congruity of the features is grounded on the assumption that consumers use their knowledge about the product as a schema that serves as basis for their evaluation of every new feature. My belief is that when new features are added to a product they are compared with an existing consumers' cognitive structure, represented by the idea of the product that consumers already have in mind. In particular, I argue that the effect of increasing the number of new features on product evaluation is different depending on the degree of congruity of the new features with the idea of the product, included some product's typical characteristics and functions, as represented in consumers' mind.

Research on categorization has typically defined individuals' cognitive structures as schemas. Accordingly, I use the concept of schema defined as consumers' mental representation of a product.

Categorization literature presents different definitions of schema. For example, according to Stayman et al. (1992), schemas are "organized structures of prior

knowledge stored in memory"; Fiske and Taylor (1984, p. 140) defined a schema as "a cognitive structure that represents the knowledge organized around a concept", whereas Cohen (1982) argued that schema is "a hypothetical cognitive structure that integrates existing information into a more cohesive and directive organizational unit". Schemas may also include elements such as attributes of a category, prototypes of the category, and the general attitude toward the category (Goodstein 1993). According to categorization research, people apply their stored knowledge that defines a schema whenever they encounter a new instance of that schema. As such, a schema is a perspective to interpret the events (Fiske 1982; Fiske and Pavelchak 1986). It allows individuals to evaluate new information rapidly, by allowing them to apply the knowledge they have about a certain item whenever they meet a new stimulus (Mandler 1982). In addition to the cognitive information, schemas have been found to contain affect, including attitudes and emotions toward the schema (Fiske and Pavelchak 1986), which are likely to determine individuals' evaluation of the new stimulus referred to that schema. Research has provided insight regarding how the level of congruity between new stimuli (e.g. products) and their associated schemas (e.g. product categories) affects processing and evaluative judgments (e.g. Cohen and Basu 1987; Fiske 1982; Srull 1981; Fiske and Pavelchak 1986; Sujan 1985). In this respect, two extreme cases have been typically contrasted – either a complete match between a new stimulus and the schema or a complete mismatch. While evaluations for matches are based on the schema affect, for mismatches there is more elaborate processing whereby affect is derived piecemeal by aggregating the affect associated with the stimulus' specific attributes (Fiske and Pavelchak 1986; Sujan 1985).

This model I propose is specifically based on the schema-congruity theory (Mandler 1982), which goes on to study the implications of the categorization process on people's evaluations. Schema-congruity theory suggests that, in addition to the affective reaction generated by a new stimulus itself, it is the processing such information that may generate affect (e.g. Mandler 1982; Meyers-Levy and Tybout 1989; Peracchio and Tybout 1996; Garbarino and Edell 1997; Campbell and Goodstein 2001). While most categorization research has examined how novel items are functionally categorized and evaluated, Mandler (1982) predicted that categorization process may itself generate affect that contributes to the evaluation of the stimulus. In particular, it is the very process of responding to (in)congruity that may produce such affect (Meyers-Levy and Tybout 1989; Garbarino and Edell 1997). In addition to the two extreme cases of high and low congruity, Mandler considered the case in which incongruity lies between the extremes of a perfect match or mismatch between the schema and a new stimulus and called this situation "moderate incongruity". His model predicts an inverted U relationship between schema (in)congruity and evaluation: responding to moderate incongruity leads to more favourable evaluations than responding to either congruity or extreme incongruity.

Congruity is defined as the extent that structural correspondence is achieved between the entire configuration of a new stimulus, such as a new product feature, and the configuration specified by the schema (Meyers-Levy and Tybout 1989). When the new stimulus matches schema expectations, schema congruity is achieved, whereas when a mismatch occurs, there is schema incongruity. Depending on which of these situations occurs, individuals' evaluations vary.

In sum, there are two different types of affective responses deriving from schema-congruity. First, there is the affective response contained within the schema itself (Fiske and Pavelchak 1986). Therefore, if a person who hates action films attends an action movie, his schema for action movies will prepare him to dislike that movie. Second, there is the affective response generated by the match/mismatch between the new stimulus and the schema (Mandler 1982). In this sense, the level of schema-perceived congruity of a new stimulus has been found to have a direct effect on consumers' judgments of such a stimulus.

In this thesis I focus on the second form of affective response. I argue that different levels of product perceived congruity of the new features generate different evaluative responses in terms of product evaluation as more features are added to the product. In particular, a difference in responses to congruent versus incongruent features is expected, and different outcomes for product incongruent features depending on consumers' ability to resolve incongruity are predicted. To achieve this aim, in this chapter I analyze the predictions of schema-congruity theory about the possible evaluative effects of the match/mismatch between stimulus and schema.

Since schema-congruity theory deals with the implications of the categorization processes on evaluations, before analyzing the research on schema-congruity, I present some work on the more general framework of categorization as applied to product evaluation (Cohen and Basu 1987; Barsalou 1983, 1985; Loken and Ward 1990). In addition, I report some evidence about the application of categorization framework to the research on brand extension (e.g. Boush and Loken 1991; Aaker and Keller 1990; Boush et al. 1987; Boush 1993; Barone et al. 2000; Romeo 1991; UMCBS 1987; Park et al. 1991; Martin et al. 2005).

2.2.1 Categorization theory

Categorization theory grew up in the context of artificial and natural objects and then has been widely applied to consumer behavior issues related to products and product categories. Generally speaking, research on categorization has focused on the conditions under which an entity can be considered representative of a category and on the different ways in which categorization process may take place. For instance, Mervis and Rosch (1981) argued that a category exists whenever two or more distinguishable objects or events are treated equivalently (e.g. labelling distinct objects with the same name or performing the same action on different objects). According to Rosch (1978, p. 28), "to categorize a stimulus means to consider it, for purposes of that categorization, not only equivalent to other stimuli in the same category but also different from stimuli not in that category".

In addition, Mervis and Rosch (1981) addressed two basic questions, such as the criteria for setting boundaries for category membership and the whether or not category members differ in their degree of representativeness of that category.

As regards the first point, they argued that objects can be categorized at different hierarchical levels (Rosch et al. 1976). Within this hierarchy a basic level exists at which objects are recognized as category members more rapidly than as members of categories at superordinate or subordinate levels. However, they argued that category boundaries are generally not well defined, because the attributes defining a category tend to be fuzzy. The categories, once formed, allow people to predict sets of properties, object uses, and person behavior on the basis of people assignment of such objects and other people to them, without directly observing such aspects for each instance (Cohen 1982). The set of beliefs and expectations that people have

about objects or other people included in the categories may be said to form a schema for that category.

As regards the second point, empirical evidence demonstrates that members of a category are not equally representative of that category, because they vary in their degree of typicality, or membership, of the category. As a consequence, category membership is often a matter of degree. Typicality has been defined as the degree to which an item is perceived to represent a category (Loken and Ward 1990). This range in typicality of the category is called "graded structure" (Lingle et al. 1984; Barsalou 1985; Mervis and Rosch 1981; Rosch et al. 1976). The most representative members of categories are recalled faster and with fewer errors, and are established first as category members (Ward and Loken 1986); furthermore, they are the most useful bases for learning categories and they are perceived as "standards of comparison" for other members. Rosch and Mervis (1975) defined category membership in terms of the attributes that some members share with others. This variable is called family resemblance. Items having the highest family resemblance scores have the most shared attributes and, at the same time, are those items which share few (if any) attributes with members of related categories.

Categorization theory has been widely used in consumer research about product categories. In this respect, consumers may perceive some products or brands as more typical examples of a certain category than others. For example, consumers may perceive McDonald's as more typical example of the category "fast food restaurant" than Pizza Hut (Loken and Ward 1987). But what determines whether a product is perceived to be more or less a member of any category? Family resemblance is recalled by Barsalou (1983, 1985) as one of three factors that may determine the

perceived typicality of a category member. The other two are: (1) the extent to which a category member has the attributes useful to achieve the goal(s) served by the category ("ideal" attributes) and (2) the number of times that a category member has been mentioned as a member of the category (i.e. its frequency of instantiation). Barsalou argued that consumers may sometimes judge the typicality of a category member not by its family resemblance to other brands but on the basis of the extent to which it has attributes related to the goals or uses of the category. These attributes are called "ideal" attributes. In particular, Barsalou suggested that individuals create two types of categories: taxonomic and "goal-derived" categories. Taxonomic categories are those generally used to classify phenomena that share attributes with each other to a greater or lesser extent, whereas goal-derived categories are created ad hoc putting together items that could be dissimilar along physical dimensions but serve to achieve certain goals, called "ideals", for which the category has been formed. In this sense, family resemblance scores do not seem to be good predictors of member typicality of goal-derived categories because these scores are based on physical comparison among the members of the category and may not be able to capture the similarities among members on dimensions related to category goals.

Addressing some problems in Barsalou's measure, Loken and Ward (1987) presented another measure of typicality. According to these scholars, consumers judge the typicality of a product by the extent to which the product has salient attributes related to the goals or uses of the category. The measure they use, called attribute-structure measure, differs from Barsalou's one because it focuses on a set of salient goals for the category created and not on just one goal.

In essence, categorization consists in making a comparison between a new stimulus and the organized knowledge. Cohen and Basu (1987) analyzed three different models that may be used in the categorization process: (1) the "classical" view, (2) the "prototypical" view and (3) the "exemplar" view. The classical view predicts that there are some necessary and sufficient attributes that jointly determine the category membership. Only if an entity possesses all these attributes it can be said to be a category member. As a consequence, this view implies that all the members have the same degree of typicality of the category. However, progress in cognitive psychology made the difficulty of finding categories with clear boundaries relevant. In the light of this, the prototype view recognized the existence of intra-category variability. Instead of searching for necessary and sufficient attributes, this view predicts that people derive the category membership of certain objects on the basis of the fit between such objects and individuals' concept of the meaning implied by a category label. This category label may be operationalized either at level of features, according to a probabilistic feature-based rule, or by abstracting an hypothetical entity used to categorize new instances, according to an overall criterion fit. This entity can be seen as an "ideal" category representative. Finally, in the exemplar view categorization occurs by comparing the target instance with concrete exemplars of the category: the more similar the instance to an exemplar, the more likely it is considered as a category member. The difference between prototypes and exemplars lies in the fact that prototypes are abstract images embodying attributes most commonly associated with members of the category, whereas exemplars are known and real good examples of the category (Sujan 1985). In the light of such differences in the categorization models, Cohen and Basu (1987) advanced a

contingency-based mix model of information processing based on the recognition of the variability and flexibility of the ways in which information about new instances is processed. The basic tenet of this model is that, when involved in a categorization task, consumers deal with a number of contextual factors (i.e. the category learning context, their task involvement or motivation, rule complexity and judgment setting) on the basis of which they flexibly adopt an analytic processing of the information or a nonanalytic one, or both sequentially. Analytic information processing follows the feature-by-feature comparison approach, whereas nonanalytic information processing uses the "good fit" rule, according to which an instance is matched with some overall representation of the category. This model criticizes all the behavioral views assuming that consumers base their judgments on the product "in isolation", ignoring the context within which they accomplish this task.

Broadly speaking, categorization theory provides a framework for studying the way in which consumers process the information about products. In particular, two types of information processing strategies have been typically contrasted (Fiske and Pavelchak 1986; Sujan 1985): piecemeal and category-based. According to piecemeal approach consumers evaluate products on an attribute-by-attribute basis. On the contrary, categorization process implies that consumers apply their "schemas" (Fiske 1982) whenever they encounter a new stimulus. Schema is built on the basis of one's previous experience with the category. This experience is organized around the most typical examples of the category (Cohen and Basu 1987). Fiske and Pavelchak (1986) reconciled these two approaches to information processing by proposing a two-steps process that consumers usually follow when are exposed to a new stimulus. The first step is represented by categorizing the new information. If

categorization is successful, the new information can be evaluated in a category-based mode, otherwise if it fails, because no category is cued, a piecemeal, attribute-by-attribute approach is required. Hence, they argued that matches to product category knowledge would evoke category-based affective processes, and mismatches would evoke piecemeal processes.

Furthermore, Sujan (1985) accounted for the role of expertise in information processing. Expertise lets subjects recognize standard categories that can be cued to classify the new information, so making it not necessary to start a piecemeal evaluation. In fact, category knowledge is likely to be more developed for expert consumers and the category-affect link more clearly defined than for novices. Sujan provides evidence that when information matches category-based knowledge, expert consumers rapidly reach final evaluations, whereas when information does not match category-based knowledge, experts' final evaluation is likely to be based on a piecemeal review of the attributes.

2.2.2 Brand extension research

Categorization framework has also been applied to the research on brand extension to explain consumers' evaluation of the extensions. The general idea of these studies is that when a brand extends toward another product category the evaluation of the extension depends on the perceived similarity between the extension and the core brand. This degree of similarity influences the transfer of the affect associated with the core brand to the extension. As a consequence, consumers' reactions to brand extensions are thought to be based on a categorization process, because when an existing brand name is applied to a new product, consumers'

affective impressions about this new product may be influenced by the previously formed evaluations about the existing brand. Therefore, the point is to understand how consumers extend their beliefs about a brand to the new products offered by the same brand.

Most of the studies in this field (e.g. UMCBS 1987; Boush and Loken 1991; Romeo 1991; Barone et al. 2000) have argued that the perceived similarity of the brand extensions to the core products of the brand is an important determinant of the extent to which consumers transfer their overall affective disposition from the "old" to the new products. Categorization theory provides a reliable framework for explaining how this similarity mediates on the transfer of affect from the existing to the new products with the same brand name. In this respect, it is argued that after being exposed to many instances of a brand name, consumers form a "prototype" that represents the category of branded products. In this respect, Fiske (1982) argued that schematic match determines affective response: "to the extent that an instance is perceived to fit the schema it will receive the affect linked to that category" (p. 61).

Aaker and Keller (1990) investigated how consumers form their attitudes toward brand extensions. In particular, they found that consumers' perception of the overall quality of the brand has a positive impact on consumers' attitude toward the extension. They also provided evidence about the role of the perceived "fit" or similarity between the product classes involved in a brand extension strategy and the core brand itself, arguing that such a fit is likely to enhance the transfer of the perceived quality of a brand to its extension. Specifically, in the case of high perceived fit, consumers are likely to use category-based processing to transfer the overall brand quality perceptions to the extension. Otherwise, in the case of low

perceived fit, this transfer is inhibited, and consumers may infer negative beliefs and associations with respect to the extension.

In addition, Boush and Loken (1991) highlighted that brands, like many other categories, often exhibit graded structure (e.g. Mervis and Rosch 1981; Barsalou 1985; Loken and Ward 1990), because some products are more representative of the brand than others. For example, a television set is likely to be perceived by consumers as highly representative of the Sony brand, while shoes are unlikely to be viewed in this manner (Boush and Loken 1991, n. 2). As regards the nature of the evaluation process, these scholars argued that attitudes toward brand extensions can be formed either through a piecemeal process or a categorization one. In the first case, attitudes are computed on the basis of brand extensions' specific attributes, while in the second case attitudes associated with the brand category are transferred to the specific brand extension whenever this extension is identified as a member of the brand category. Boush and Loken have shown that the processing strategy for brand extension evaluation depends on how this extension is perceived similar to (or typical of) the original category. Specifically, they have considered the case of moderate mismatch between brand extension and the original product category, in addition to the extreme cases of high match and high mismatch. In this respect, they have found that both extremely typical and extremely atypical brand extensions are evaluated more rapidly than moderately typical ones, because moderately typical extensions require piecemeal process, while both of the extreme typicality cases require only the first stage of evaluation.

In addition to these works, Romeo (1991) investigated how brand extensions affect consumers' perception of both the extensions and the family brand name in the

specific case in which such extensions contain negative information (i.e. they do not perform well). When exposed to an extension perceived as clearly inferior to the brand, negative information about the extensions that are perceived as highly similar to the brand is likely to have a strong negative effect on consumers' evaluations of both the extension and the family brand.

Another contribution to this research stream has been provided by Keller and Aaker (1992). They have analyzed the effect of sequential introduction of brand extensions on consumers' evaluations of (1) a proposed extension and (2) the core brand. Their findings show that the performance of intervening extensions on evaluations of a proposed extension depends on the similarity of the intervening and the proposed extensions. In other words, the effects of intervening extensions should also depend on their relative similarity to the core brand and proposed extension.

Furthermore, Broniarczyk and Alba (1994) have underlined the importance of brand in consumers' evaluations of a brand extension. While previous research has provided insight about the importance of brand affect and, mainly, product category similarity between brand extension and the core brand in consumers' evaluation of a brand extension, they have focused on the role of brand-specific associations (MacInnis and Nakamoto 1990). These scholars argued that the traditional definition of similarity in terms of features overlap is not completely appropriate because it does not take into account that different objects such as brand extensions and the target core brands may be classified as members of the same category on the basis of criteria others than total feature overlap. In particular, brand-specific associations are likely to offer a dimension of "fit" between the core brand and an otherwise dissimilar extension category.

Gurhan-Canli and Maheswaran (1998) have examined the effect of congruent and incongruent extension on family brand perception, focusing specifically on the mechanism underlying brand dilution and enhancement effects. In their arguing, when consumers are exposed to an incongruent extension, they may use three different response models (Weber and Crocker 1983): (1) subtyping model, i.e. the new incongruent information is considered as an exception and categorized as subtype, (2) bookkeeping model, which predicts that all the information is processed and each piece of the new information leads to an incremental modification of the schema, and (3) conversion model, which consists in changing the schema only in the case in which consumers are exposed to extremely atypical stimuli. Consumers' motivation to process the information has been shown to explain whether subtyping or bookkeeping model occurs. Hence, in high-motivation condition, bookkeeping model is more likely to occur, because consumers are available to spend time and effort in processing new information, according to piecemeal approach, while in low-motivation condition, subtyping model is more likely to occur, because consumers resolve the incongruity without engaging in an effortful, attribute-based processing. As a consequence, they form subtypes, according to category-based processing.

2.3   Schema-congruity theory

Schema-congruity theory has its root in social psychology, and in particular in the studies about the retrieval of the information from long-term memory. This kind of information has been found to let individuals create elaborate associative networks (Hastie 1980; Srull et al. 1985). In the context of consumer research, a number of

studies have focused on the effect of schema-congruity on the evaluation of new products (e.g. Stayman et al. 1992; Meyers-Levy and Tybout 1989; Peracchio and Tybout 1996; Campbell and Goodstein 2001), the schema being typically represented by product category. Each of these works has shown that new products' judgments depend on the level of congruity between product category and the new product.

Mandler (1982, p.3) has defined schemas as "representations of experience that guide action, perception and thought". These schemas are formed on the basis of the frequency of encounters with relevant instantiations, that is on the basis of individuals' interactions with their environment. As such, schemas "are abstract representations of environmental regularities" (p.16).

After individuals have developed their schema, they evaluate the interaction between every new event and the schema. This evaluation is based on the degree of perceived congruity between an event and the schema's relational structure. Based on the cognitive differences between schema congruity and incongruity, Mandler (1982) added an affective component to his theory. He suggests that if individuals perceive congruity between the structure of the target event and the schema, positive valuations of familiarity, acceptability and general sense of liking will occur, because they will be able to reconcile easily the new information with their schema. However, schema congruent stimuli are not very noteworthy because they are seen as something that conforms to people's expectations, and therefore are unlikely to prompt extensive cognitive elaboration. Hence, the positive response that they produce typically is mild rather than extreme.

On the other hand, a different scenario is predicted when schema incongruity is encountered. More specifically, Mandler argued that as incongruity between a new

stimulus and a schema increases both arousal and cognitive elaboration required to try to resolve the incongruity are heightened and this makes the resulting evaluation more extreme. Whether the evaluation of incongruent stimuli is positive or negative is function of consumers' ability to resolve the incongruity. This ability depends on how extreme the incongruity is (Garbarino and Edell 1997). In this respect, Mandler argued that moderate incongruities are those incongruities that can be resolved and the process of resolving incongruity makes such incongruities "interesting and positively valued" (Mandler 1982, p. 22). This effect is explained by the "intellectual satisfaction" that consumers experience for being able to resolve the (moderate) incongruity.

On the contrary, extreme incongruities are those incongruities that cannot be resolved or can be resolved only by making undesired structural changes to the existing schema. Hence, similar to moderate incongruities, extreme incongruities prompt cognitive elaboration, but this elaboration leads to frustration rather than resolution and satisfaction. As a consequence, extreme incongruities typically lead to more negative evaluation than do moderate incongruities.

Finally, when a new stimulus is schema congruent it is easily assimilated to the schema and does not prompt extensive cognitive elaboration because it is seen as something that conforms to people's expectations. As a consequence, Mandler predict that the evaluation of congruent stimuli is positive because, other things being equal, people prefer familiarity and predictability, but, different from the evaluation of moderately incongruent stimuli, it is mild rather than extreme because predictability generates little arousal.

Mandler used the notions of assimilation and accommodation to explain the cognitive outcomes of schema-congruity. Specifically, assimilation and accommodation are processes that follow schema congruity and incongruity. Mandler (1982, p.13) defined assimilation as "the integration of external elements into evolving or completed structures", and accommodation as "the modification of an assimilatory schema or structure by the elements it assimilates". While assimilation provides cognitive continuity and integration, accommodation allows cognitive change. As a result, in the case of schema-congruity the new information has a relatively high degree of perceived fit with individual's schema, which will lead to a positive evaluation produced by the little effort required to reconcile this information. Therefore, in this case no structural changes will take place. On the contrary, when individuals perceive some degree of incongruity between a stimulus and the schema, they will engage in a further and more complex mental activity to give meaning to the new information. In particular, according to Mandler, schematic incongruity may lead individuals to two different outcomes: (1) activation of a new schema that fits the new information, and (2) accommodation. The former is likely to be associated with positively valued cognitive activity, while the latter will lead to negative evaluations, because of the deep structural changes in individuals' schema that would be necessary in that case. In the case of accommodation, current schematic expectations are disrupted.

Apart from the positive or negative outcomes of schema-congruity judgments of value, Mandler argued that such evaluations may vary along the emotive dimension. The intensity of individuals' emotions in response to schema-(in)congruity is determined by the "autonomic nervous system" (ANS) activity. Such ANS is linked

to how much of a discrepancy, or incongruity, exists between what is encountered and what was expected. In particular, in the case of congruity between a new stimulus and the schema, individuals' positive evaluations result in relatively little arousal and degree of affective intensity, deriving from the essential confirmation of schematic expectations. In other words, other things being equal, people like objects that allow predictability, but, since schema congruent objects do not generate extensive cognitive elaboration and do not require individuals to devote cognitive resources to the resolution of incongruity, the positive response that they produce is not likely to be strong and extreme.

On the other hand, in the case of the interruption of individuals' expectations and deep structural changes needed to accommodate the new information (extreme incongruity), individuals' arousal will be relatively intense, even though the affect will be negative given the absence of structural congruity.

A third case considered by Mandler is the one in which individuals are able to find another solution to schema-incongruity. This solution is given by activating a different schema that fits the available information. Even in this case arousal is likely to be relatively high because of the emotional process activated by the initial incongruity. The result is a positive and highly arousing evaluation, that is produced by individuals' ability to assimilate the incongruent information. In other words, elaboration is thought to enable the identification of a means for integrating the new information with existing knowledge.

In sum, incongruity may lead either to positive evaluative states or to negative ones, depending on the successfulness of the assimilation/accommodation individuals' activity. However, regardless of the sign of these judgments, disruption

of expectations and accommodation produce arousal and intense affective and emotional states. In fact, the novelty of a new object leads to greater cognitive elaboration necessary to resolve the incongruity. This mental activity involves a relatively high amount of cognitive resources to engage in the activity of resolving the incongruity and leads to a high degree of individuals' arousal.

On the basis of this arguing, Mandler predicts an inverted U (or nonmonotonic) relationship between schema (in)congruity and individuals' evaluation: the process of responding to "moderate" incongruity leads to more favourable evaluations than does the process of responding to either congruity or extreme incongruity.

Further studies provided substantial evidence that the task of resolving incongruity is resource demanding, whereas processing congruent information requires few cognitive resources (Fiske and Neuberg 1990; Meyers-Levy et al. 1994; Meyers-Levy and Tybout 1989; Maoz and Tybout 2002).

Meyers-Levy and Tybout (1989) applied Mandler's model to the case of the introduction of new consumer products which present different levels of congruity with product category schema. They examined whether responding to different levels of schema incongruity led to different evaluations of the same objects. In addition to the cases of perfect match and perfect mismatch between the new product and the associated product category schema, they considered the case of moderate incongruity, defined as the situation in which there is a partial match between the product and the product category schema. Mandler argued that the level of schema incongruity depends on the ease with which discrepancies can be resolved within the individuals' organized knowledge. On the basis of this, Meyers-Levy and Tybout operationalized schema congruity by considering product categories as hierarchically

composed by three fundamental levels (e.g. Rosch 1978): superordinate level, basic level and subordinate level. Product category incongruity is determined by the ease with which consumers can resolve it within this hierarchical structure. The resolution of incongruity typically requires that consumers move to the next lower level in this structure (e.g. from the basic level to the subordinate one). For example, if a new kind of beverage is judged incongruent with the beverage schema (upper level) because it contains some attributes that are not contained in consumers' beverage schema, consumers try to resolve such an incongruity by moving to the successive lower level represented by soft drink. At this lower level, schema is more detailed and, as a consequence, it is more likely that consumers be able to find a match between new product's attributes and soft drinks-schema's attributes. If this match can be found, there is evidence of moderate incongruity. Conversely, in the case of extreme incongruity consumers cannot resolve the initial incongruity by using an alternative lower-level schema. In this case, consumers' product evaluations are likely to be highly negative. Consumers' product evaluations resulting from moderate incongruity were found to be more favourable than were the positive product evaluations generated by extreme congruity, because of the greater arousal deriving from consumers' ability to resolve the initial incongruity. In this respect, they concluded that a more positive evaluation "arose because both the context and the positive affect presumably generated as a consequence of resolving moderate incongruity primed subjects to access or develop positive associations concerning a schema that would otherwise have been evaluated unfavourably (Meyers-Levy and Tybout 1989, p. 52). However, Meyers-Levy and Tybout showed that a factor that moderates the relationship between schema-incongruity and product evaluations may

exist. Such a factor is consumers' dogmatism. In particular, they found that schema congruity effect only occurs for "nondigmatic consumers", that is, for people who are available to engage in the cognitive activity required to give meaning to the moderately incongruent information. On the contrary, this effect is not found for dogmatic people, who are likely to ignore or discount the new information.

In conclusion, whereas Sujan (1985), Fiske (1982) and Fiske and Pavelchak (1986) focused on the alternative processing strategies following the level of congruity between products and their associated product category schemas, Meyers-Levy and Tybout (1989), based on Mandler's theory, examined the evaluative outcomes of the mismatch between schema-level representation and new product attributes, finding evidence for the inverted U relationship between the level of schema congruity of a new product and consumers' evaluation of this product.

Another work in this research stream has been conducted by Ozanne et al. (1992). They investigated how product category schemas influence information search and reported evidence of an inverted U relationship between information search and the degree of mismatch between product and product category schema, noting that the highest level of information search occurs in the case of moderate incongruent stimuli. In other words, Ozanne et al. found that subjects exposed to a moderately incongruent new product engage in more search than do subjects exposed to either congruent or strongly incongruent new products.

Related tests of Mandler's model were conducted by Stayman et al. (1992) in the product-satisfaction context. Their research examined discrepancies between the expectations derived from activated schemas and actual product experience. In particular, they studied the way in which congruity and incongruity can influence the

formation of expectations before product trial and disconfirmation and evaluation after trial. As regards consumers' expectations about new product, they are formed by comparing new product information with an initially cued product-category schema representation. If new product description is congruent with this schema, subjects assimilate the new information within the cued schema. On the contrary, if new product description is incongruent with such an initial schema, they are likely to look for another schema that is more consistent with attribute information. This new schema is taken as the basis for product-performance expectations. After product trial, consumers compare product perceived performance with their schema-based product performance expectations. If they perceive a match between expectations and product performance no change will occur in pre-trial to post-trial evaluations. If a strong mismatch is perceived, they may attempt to accommodate this mismatch to expectations included in the initially cued schema, but the evaluation will be negative given the absence of structural congruity that could lead to a positive evaluation. Attempted accommodation is more likely than schema switching because consumers are not easily available to change their initially cued schema. As a consequence, attempted accommodation following a strong mismatch will produce more negative affect than those produced by the match between expectations and performance. Moreover, Stayman et al. compared Mandler's model with Fiske and Pavelchak's one. While the former predicted that moderate incongruity produces higher evaluations than congruity and extreme incongruity, the latter would have predicted a shift from schema-based to attribute-based information processing in the case of strong incongruity between expectations and trial performance. So, while Mandler hypothesized an inverted U relationship, Fiske and Pavelchak predicted a monotonic

change in consumers' evaluation as one or more attributes become more incongruent with expectations.

A further application of Mandler's theory is given by Meyers-Levy et al. (1994). These scholars investigated consumers' evaluations of new products introduced by companies with established brand names that were congruent, moderately incongruent or extremely incongruent. Consistent with Mandler's theorizing, they demonstrated the existence of a nonmonotonic relationship between brand name incongruity and consumers' evaluative responses, such that products bearing moderately incongruent brand names may be preferred over those with either congruent or extremely incongruent brand names. In fact, when consumers are exposed to brand names perceived as congruent with product associations, they are likely to respond to them in a mildly favourable manner because such an item is familiar and predictable and no extensive processing is involved. In the case of brand names with moderate degree of incongruity, consumers may positively value these items because they are likely to be able to resolve the incongruity. For example, Levi Strauss successfully added to its production of jeans both the production of shoes and men's casual pants bearing the Levi's name. This strategy can be considered as an example of moderate incongruity because the new product lines induced minor changes in consumers' mindsets. In particular, when consumers face incongruent brand names, they engage in a relatively intense ads processing activity. In the case in which such an incongruity is moderate, this activity will allow consumers to find a meaningful relationship between the brand names and the core product. On the contrary, in the case of extremely incongruent brand names, consumers may not be

able to resolve the incongruity and they may experience negative feelings, such as anxiety, frustration and helplessness.

Schema-congruity effect has been further examined by Peracchio and Tybout (1996). They focused on the inverted U relationship existing between schema congruity and consumers' evaluations, such that schema incongruity involves a more intense cognitive elaboration that could lead consumers, in the case of moderate incongruity, to perceive a greater positive affect than that perceived in the cases of congruity and extreme incongruity (Mandler 1982; Meyers-Levy and Tybout 1989; Stayman et al. 1992; Meyers-Levy et al. 1994). Grounded on the effect theorized by Mandler and found in other applications of his theory, Peracchio and Tybout argued that the cognitive elaboration involved in the case of incongruity requires some degree of consumers' motivation (see in particular Meyers-Levy and Tybout 1989). As a consequence, the typical inverted U relationship may not apply to consumers who do not have sufficient motivation to resolve the incongruity. Peracchio and Tybout analyzed another factor that may moderate schema-based product evaluations by determining the amount of cognitive resources devoted to resolving schema incongruity. This factor is consumers' prior knowledge. Specifically, schema-congruity effect seems to hold only in the case in which consumers have limited, or not elaborate, prior knowledge. In fact, consumers with limited prior knowledge are likely to be highly sensitive to inconsistent information, while consumers with well-developed, or elaborate, knowledge have the ability to use both schema-congruent and schema-incongruent information (Fiske and Taylor 1991, p. 128-130). Specifically, in the case of not elaborate product category knowledge, the probability that consumers experience schema incongruity increases because consumers'

knowledge structure is impoverished and rudimentary. This makes the cognitive effort required to give meaning to the incongruent information more likely. When this effort produces successful outcomes, it generates positive affect. On the contrary, in the case of elaborate knowledge structure, consumers may typically assimilate the new incongruent information with less effort than in the case of not elaborate prior knowledge. As a consequence, when consumers have elaborate product category knowledge, schema-congruity effect on product evaluation is less likely to occur.

Campbell and Goodstein (2001) have addressed the question of the evaluation of products based on the level of congruity between product attributes and consumers' expectations for the type of product. Even this study is based on Mandler's theory, defined as "moderate incongruity effect" (Campbell and Goodstein 2001, p. 439), already investigated for new product attributes (Meyers-Levy and Tybout 1989), brand extensions (Meyers-Levy et a. 1994), and taste (Stayman et al. 1992). Campbell and Goodstein have contributed to this research stream by examining some moderating effect on the relationship between incongruity and product evaluations. This goal is consistent both with Meyers-Levy and Tybout's finding about the moderating role played by individual trait of dogmatism and with Peracchio and Tybout's finding about the moderating role of consumers' prior knowledge about the product. The variable that Campbell and Goodstein have considered is the perceived risk. This variable may act as a boundary condition that has been found to limit the moderate incongruity effect. In particular, they argue that moderate incongruity effect will not occur when consumers' perceived risk is relatively high. Perceived risk associated with product evaluation is defined in terms of uncertainty and

consequences: it is predicted to increase as the level of uncertainty and/or the associated negative consequences increases as well. It may include financial, performance, social, psychological, and physical risk. When consumers perceive high risk about a product, they tend to prefer "familiar" alternatives to even moderately incongruent ones. Familiarity is positively related to the level of congruity between product and consumer's product schema. As a consequence, when perceiving high risk, consumers are likely to be "conservative", and they prefer "normal" solutions to novel and less familiar ones. Therefore, in the case of high perceived risk, Campbell and Goodstein have found that the moderate incongruity effect does not hold, because consumers tend to prefer an alternative that is consistent with schema expectations to one that is moderately inconsistent. On the contrary, no evidence of this effect has been found when perceived risk is low. Consistent with previous studies, the moderating effect of the perceived risk has been shown to hold in the case in which no-risk condition was considered.

Grounding on the "moderate incongruity effect", Maoz and Tybout (2002) have applied schema congruity theory to brand extension strategy. In particular, they have explored the relationship between congruity of an extension with the parent brand and consumers' responses to the extension. As reported above, Meyers-Levy et al. (1994) have shown that consumers evaluate more favourably the extensions considered moderately incongruent than the extensions perceived as congruent or extremely incongruent with the parent brand. This is due to the fact that consumers are able to resolve the moderate incongruity and this resolution will prompt a more positive evaluation than that produced by a congruent extension (Mandler 1982). Moreover, a number of studies on brand extension have shown that an alternative

view of brand extension evaluation may exist. Specifically, categorization literature (e.g. UMCBS 1987; Aaker and Keller 1990; Boush and Loken 1991; Keller and Aaker 1992; Park et al. 1991) has argued that a linear relationship, instead of an inverted U-shaped one, between brand extension congruity and the evaluation of it exists. In fact, these studies have shown that the favourableness of the evaluation increases as the congruity between the extensions considered and the parent brand increases. Given these two opposite predictions, Maoz and Tybout have focused on the conditions under which each of these two patterns is more likely to occur. A factor that may determine which of the two evaluative processes will occur is consumers' task involvement. In particular, research on schema-congruity effect has shown that the process of resolving schema-incongruity is a resource demanding one. On the contrary, schema-congruity does not involve many cognitive resources. As a consequence, Maoz and Tybout have argued that the amount of cognitive resources that consumers may devote to resolving the schema-incongruity moderates the relationship between the congruity of an extension with the parent brand and the evaluation of the extension. Task involvement has been found to be linked to the amount of cognitive resources devoted to brand extension evaluation. In particular, these scholars have shown that when task involvement is high, consumers are available to engage in a detailed processing of the incongruent information. This is likely to make consumers able to resolve the moderate (but not the extreme) incongruity, so producing an inverted U relationship. On the other hand, when task involvement is low, consumers are expected to devote fewer cognitive resources to the resolution of a possible incongruity. As a consequence, the extension's evaluation will be linearly and positively related to the degree of congruity of this extension

with the parent brand: the more congruent the extension, the more positive the evaluation. Another factor that may moderate this relationship when involvement is high is the availability of the information about the attribute-level performance of an extension relative to competing alternatives. In particular, in the case of available competitive information about the fact that the brand extension is differentiated from competitors, this information is diagnostic and becomes more important for consumers' judgments than the level of congruity. Maoz and Tybout have found that when involvement is high, a moderately incongruent extension will be evaluated more favourably than congruent and extremely incongruent extensions only if such an extension is not otherwise differentiated from competitors. On the contrary, if the extension is superior to its competitors, moderate incongruity effect is not likely to hold because the diagnosticity of the information about the extension's competitive advantage will be perceived as a more important evaluation criterion than the level of perceived congruity of the extension with the parent brand.

2.4 The interaction between new features' number and congruity on product evaluation: the role of cognitive elaboration

In this thesis I apply schema-congruity theory to the investigation of the evaluative outcomes occurring as more features are added to product. My theorizing is based on the belief that increasing the number of new product features leads to an increase in the cognitive elaboration and cognitive effort required to consumers in the case in which these features are incongruent with the product. The explanation for such an increase in the extensiveness of the cognitive activity required is that as

the number of incongruent features increases more incongruities have to be resolved, because consumers need to reconcile every additional feature with their product schema. As the afore-mentioned research has shown, cognitive effort derives from the activity of resolving incongruities.

On the basis of this, I propose that the probability that consumers perceive an increase in the product evaluation as the number of incongruent features increases depends on the degree of congruity of these features with the product, and, more specifically, on whether consumers are willing to spend the cognitive resources necessary to try to resolve the incongruity. In particular, I argue that as the number of incongruent features increases consumers might not be willing to spend the cognitive resources necessary to elaborate these incongruities and eventually perceive value, in terms of product evaluation, from the features added.

In other words, the increase in the number of either moderately or extremely product incongruent new features may lead to a mismatch between the resources required to elaborate all the new features and resolve the incongruities and the resources that consumers are typically available to spend. This prediction is consistent with the finding that humans have limited cognitive resources and allocate them judiciously (Payne 1982; Russo and Dosher 1983). Accordingly, other scholars have argued that cognitive effort and the activity of thinking in general is costly. In this sense, they described human beings as "cognitive misers" (Fiske and Taylor 1984, p. 12), who tend to eschew any difficult intellectual activity (Burnkrant 1976; McGuire 1969) and can expend only a limited amount of cognitive resources in their judgments and decision making. Since consumers are assumed to be willing to use a limited amount of cognitive resources, I predict that they are not likely to perceive

benefits from increasing the number of features when these features are incongruent with the product.

On the other hand, features that are congruent with the product do not require extensive cognitive elaboration and effort, because they are easily and quickly assimilated to the product. In particular, when exposed to such features, consumers do not need to expend cognitive effort to resolve any incongruity, as much as these features are seen as familiar and predictable from consumers' standpoint. As a consequence of this reduced cognitive burden, I argue that as the number of features that are congruent with the product increases consumers are likely to perceive an overall benefit from such an increase.

Hence, I hypothesize that:

H_1: As the number of congruent features increases product attractiveness increases, whereas as the number of either moderately or extremely incongruent features increases product attractiveness does not increase.

2.5 The role of task involvement in the resolution of incongruity: the strengthening of the cognitive elaboration-based explanation

There is evidence in psychological and behavioral studies that encouraging people to think carefully of new stimuli is likely to result in resolution of moderate incongruity (Meyers-Levy et al. 1994; Maoz and Tybout 2002). On the contrary, no evidence for the resolution of extreme incongruity has been found. According to Mandler, extremely incongruent stimuli are not likely to be resolved within the

schema, because too deep structural changes to that schema would be involved. Such deep modifications to the existing schema are generally seen as undesirable by individuals (Mandler 1982).

H_1 is based on the belief that consumers avoid spending all the cognitive resources necessary to resolve the incongruity as the number of incongruent features increases. In fact, whereas consumers are likely to perceive an increase in product attractiveness as the number of product congruent features increases, such an increase is not likely to occur in the case in which new features are either moderately or extremely incongruent with the product.

However, basing on the evidence that consumers may be able to resolve the moderate incongruity, I extend my theorizing by considering the case in which consumers are given the opportunity to devote a relatively high amount of cognitive resources to the task of elaborating incongruity. In this respect, the Elaboration Likelihood Model (Petty and Cacioppo 1981) predicts that as an issue increases in personal relevance or consequences, people devote more cognitive resources to it. While in H_1 I have predicted that consumers may not be able to resolve moderate or extreme incongruity as the number of features becomes higher, I add to this by investigating what is likely to occur if consumers are made likely to elaborate the information deriving from new features when considering a relatively high number of new features.

Extending what predicted in the first hypothesis, I argue that, if encouraged to consider new features with respect to the schema more thoughtfully than they generally do, consumers can resolve the moderate (but not the extreme) incongruity even when new features' number is relatively high. This is consistent with Mandler's

definition of moderate incongruity as the type of incongruity that can be resolved successfully.

To make this happen, it is necessary to vary the amount of cognitive resources that subjects are likely to devote to evaluating the product with features added. This has often been done by acting on consumers' task involvement. High task involvement has been shown to lead to more detailed information processing than low involvement (e.g. Eagly and Chaiken 1993; Petty et al. 1983; Petty and Cacioppo 1984, 1986). Hence, highly involved consumers are more likely to resolve the moderate incongruities of the features added than lowly involved ones.

On the other hand, I expect no difference between being highly involved and being lowly involved when the features added to the product are either extremely congruent or extremely incongruent with the product, for opposing reasons. In particular, in the case of product congruent features, consumers do not need to elaborate extensively this information, and, as a result, involvement is likely to have less than an effect on product evaluation. On the contrary, extremely incongruent features cannot be reconciled with the product. According to Mandler, this type of features requires cognitive elaboration but, even if consumers devote substantial cognitive resources to elaborate such incongruities, this elaboration is likely to lead to frustration rather than resolution of the incongruity and satisfaction, because of the too strong, undesired modifications required to the existing schema.

On the basis of this arguing, I hypothesize that:

H_2: Product attractiveness after introducing a relatively high number of moderately incongruent features is higher for high than for low task involvement,

whereas product attractiveness after introducing a relatively high number of

either congruent or extremely incongruent features is the same for high and for

low task involvement.

Importantly, one relevant aim of this prediction is to provide further evidence of the role played by cognitive elaboration in explaining consumers' reactions to adding more features. This is done by predicting that when consumers do spend the cognitive resources necessary for elaborating the moderately incongruent features (high involvement condition), they may be able to reconcile them with the product, and perceive benefits from adding them, even when their number is relatively high. On the contrary, when the cognitive resources employed are not that substantial (low involvement condition), I expect, similarly to the general effect predicted in the first hypothesis, consumers not to able to perceive value from adding more moderately incongruent features, because a mismatch between the resources necessary to deal with all these incongruities and the resources that consumers are willing to spend will occur.

2.6 Converging evidence for the resolution of moderate incongruity: the role of temporal construal

The prediction that consumers may be able to reconcile more moderately incongruent features with the product schema is interesting because sheds light on the possibility that consumers perceive favorably the increase in the number of moderately incongruent features. Furthermore, this prediction seems extremely relevant if contrasted to Mandler's general predictions and to the previously-

mentioned applications of schema-congruity theory to consumer domain. Specifically, whereas all these studies have investigated the case of a single new stimulus (for instance, a new product within an existing product category, or a brand extension within an operating core brand), and have found evidence of the existence of the "moderate incongruity effect" (or inverted U relationship between incongruity and evaluation), no evidence has been found so far for consumers' ability to resolve more incongruities, such as different new incongruent stimuli.

My second research hypothesis has predicted that the extensiveness of the cognitive elaboration devoted to examine the new moderately incongruent features is likely to determine whether or not consumers will be able to resolve such incongruities and, as a result, infer value from increasing the number of these features.

In addition to the predicted effect of motivating consumers to elaborate extensively the new information, I argue, building on temporal construal theory, that the temporal distance between the time of consumers' evaluation and time of consumers' expected behavior (such as, the purchase of the product) is another factor that is likely to influence consumers' ability to resolve the moderate (but not the extreme) incongruity. Hence, the evaluative outcomes of increasing the number of moderately incongruent features may be different depending on the temporal frame of consumers' evaluation.

This arguing is theoretically important because converges with what predicted in the second hypothesis, by potentially adding new evidence of the possibility that consumers be able to perceive an overall benefit, in terms of product evaluation, from such product enhancing as that based on adding moderately incongruent

features. This further evidence is grounded on a construct that is different from the cognitive elaboration, as much as it refers to the degree of abstractness/concreteness associated with the variation in the temporal closeness from the consumers' expected behavior.

Broadly speaking, experimental research has shown that individuals are typically more optimistic and confident about distant future than near future outcomes. Furthermore, they have been shown to perform better on a distant future task than on a near future one (Nisan 1972). As reported by Gilovich et al. (1993) and Liberman and Trope (1998), difficult aspects of many tasks are enhanced when individuals face near future compared with distant future.

In this respect, Liberman and Trope (1998) introduced the temporal construal theory. This theory is based on the belief that construals of more distant future events are more abstract, whereas construals of near future events are typically more concrete. This prediction is explained with the arguing that thinking of near future typically includes peripheral and incidental features of the events, whereas thinking about distant future typically involves features that are central to the meaning of the event. Construals of more distant future events are typically more abstract, because they tend to represent the events in terms of general, superordinate, and decontextualized features (e.g. Trope 1986, 1989; Vallacher and Wagner 1987; Liberman and Trope 1998). In this respect, for example, Vallacher and Wagner (1985) have shown that a long time in advance people represented their wedding in high-level terms, such as "expressing love", while on the day of the wedding they represented the wedding in lower level terms, such as "having pictures made".

Liberman and Trope (1998) applied temporal construal theory to the role of feasibility and desirability considerations in choice among near and distant future alternatives. The distinction between feasibility and desirability lies in the fact that "desirability refers to the valence of an action's end state, whereas feasibility refers to the ease or difficulty of reaching the end state" (Liberman and Trope 1998, p. 7). In other words, desirability refers to the "why" of an action, whereas feasibility refers to the subordinate aspects of the "how" of an action. On the basis of this theorizing, temporal construal theory predicts that desirability considerations have a stronger influence on distant future compared with near future considerations, whereas feasibility considerations are likely to have a stronger influence on near future compared with distant future considerations.

Grounding on this theorizing, I argue that, when exposed to the increase of the number of moderately incongruent features, consumers base their evaluations on different types of considerations depending on the temporal frame of these evaluations. In particular, I predict that in the near future consumers develop a more concrete construal of the product than they do in the distant future. This leads them to assign a relevant weight to the incongruity of the features with the product in their evaluations. As the number of incongruent features increases, consumers' perception of the difficulty to reconcile more features with the current configuration of the product increases as well. In fact, consistent with Mandler's theorizing, the schema is assumed not to be modifiable in the short term; as a result, when exposed to the increase of the number of features that are incongruent with such a schema, consumers are likely to focus on the increase in the number of incongruities and, finally, on the increase in the extensiveness of the cognitive activity necessary to try

to resolve such incongruities. As a consequence, assuming that consumers are not purportedly induced to think carefully of the new features, in the near future consumers are not likely to perceive value from increasing the number of new moderately incongruent features.

On the other hand, in the distant future consumers develop a more abstract construal of the product, focusing on higher-level considerations than those made in the near future. These considerations are related to the desirability to have more features added. In this sense, consumers are likely to resolve satisfactorily the moderate incongruities deriving from the increase of the number of such features, because they may see similarities between the new features and the future configuration of the product. This outcome is explained by the consumers' arguing that, by the distant time of their expected purchase, the product could have completed an evolutionary pattern that might have made those features less incongruent with the product than they currently are. This would be manifested by the fact that those with high level of construal show more favorable evaluations as the number of moderately incongruent features increases than those with lower construal level. Conversely, those in a near future condition might not show any increase in product evaluation as the number of moderately incongruent features increases.

On the basis of this, I hypothesize that:

H₃: *As the number of moderately incongruent features increases in the distant future product attractiveness increases, whereas as the number of moderately incongruent features increases in the near future product attractiveness does not increase.*

CHAPTER III

Methodology and results

3.1 Methodology

In this chapter I present three randomized experiments that have the aim to test each of the hypotheses on which my theoretical model is based. Broadly speaking, the model I propose investigates the causal relationships between some independent variables, which are different depending on the specific hypothesis considered, and the dependent variable, which, on the contrary, is the same for all three hypotheses. In the light of this, my research has to be categorized as a causal research, as much as in all three hypotheses proposed I study the effect that the manipulation of some independent variables has on an observed variable.

From a methodological standpoint, causal models in the social sciences (Campbell and Stanley 1963; Cook and Campbell 1979; Shadish et al. 2002) are usually classified into randomized experiments, quasi-experiments, and non-experiments. All the studies I present in this section are randomized experiments, that are defined as those studies in which units are assigned at random to receive treatment and alternative conditions that are deliberately manipulated either by the

researcher or by nature to observe their effects (Van de Ven 2007). Hence, the key features of randomized experiments are that various treatments (the independent causal variable) are manipulated by the researcher, subjects (or groups) are assigned by chance to the treatments (i.e. to the different levels of the independent variable), so that each subject has the same probability as all the others to be assigned to each treatment, and then treatments are compared by measuring the effects (dependent variable). Differently from randomized experiments, quasi-experiments are studies in which subjects may not be assigned randomly to conditions, and the treatments are not deliberately manipulated; instead, they are produced by natural events and then compared to measure the effects. Finally, non-experiments are descriptive case studies that may lack a comparison group: the researcher observes and compares a unit or a case in terms of some naturally occurring conditions or events.

Within this classification, randomized experiments provide more convincing evidence of causal relationships than exploratory or descriptive designs (e.g. Churchill and Iacobucci 2005). This statement is based on observing the ability that characterizes randomized experiments, as opposed to the above-mentioned other kinds of research methods, to provide inferential knowledge that can be said to be scientific. More specifically, there are three basic kinds of evidence to support scientific inference: concomitant variation, time order of occurrence of variables, and elimination of other possible causal factors. Concomitant variation refers to the extent to which an independent variable and a dependent variable vary together in the way predicted by the hypothesis. Time order of occurrence of variables means that in order to have a causal relationship between independent and dependent variables it is necessary that the independent variable(s) precedes the dependent one(s). Finally, it

is essential that other alternative causal factors be eliminated. This can be done either by holding such external factors constant or by adjusting the results to remove the effects of other factors.

Randomized experiment provides all these three types of evidence of causality. In fact, it allows researchers to check for concomitant variation, time order of occurrence, and, if the experiment has been designed correctly, many alternative explanations will have been eliminated. A randomized experiment can provide evidence of causality because of the control it affords researchers. In fact, such experimental designs are often called "causal research", as much as the investigator manipulates and controls one or more independent variables for variation concomitant to the manipulation of the independent variables. Given that experimenter controls a manipulation of the presumed causal factors, (s)he can be more confident that the relationship discovered is the "true" relationship.

On the contrary, both exploratory and descriptive designs differ from experimental designs in that they can be defined as *ex post facto* research. This means that the researcher observes the dependent variable and then tries to find one or more causal variables that offer plausible explanations as to why dependent variable occurred. This procedure allows little control of the independent variables because the occurrence of the dependent variable may have been due to some other factors than the ones being investigated.

Experiments are usually divided into two basic groups: the laboratory experiments and the field experiments. The former type is one in which the researcher can observe and measure the effect of the manipulation of the independent variables on the dependent variable holding the other variables constant (or at least

minimizing their effect). This is done by creating an artificial setting, typically a laboratory, with the desired conditions. On the contrary, a field experiment is a study conducted in a real setting and involves the manipulation of independent variables.

Laboratory experiments typically have greater internal validity because they allow greater control. In fact, researchers can eliminate the effects of other factors that may obscure the relationships, either by physically holding the factors constant or by controlling for them statistically. Internal validity is defined as the ability to attribute the effect observed to the experimental variable, and not to other factors. On the other hand, field experiments have greater external validity, which is defined as the extent to which the effect discovered can be generalized to other people, setting and time (Cook and Campbell 1979).

In the rest of this chapter I describe each of the randomized experimental designs I have used to give empirical foundation to my theoretical model. In particular, I present three studies, each containing detailed information about the procedure followed in designing experiments and the description of the results. A discussion of the findings is also provided at the end of each study.

As regards the way in which the three studies have been arranged, Experiment 1 tests H_1 , Experiment 2 tests H_2, and Experiment 3 tests $H_3.$

3.2   *Experiment 1*

3.2.1 Stimulus information

Before choosing the product to test my first hypothesis I conducted a pre-test with the aim of identifying a brand with specific associations for the 80

undergraduate participants that differentiated it from other brands in the category (Broniarczyk and Alba 1994). The goal of the pre-test was to select a brand that was well-known and relevant to participants. In this way, I could reasonably assume that the degree of brand familiarity and knowledge was kept constant. Apple met these criteria. It was almost unanimously associated with young, cool and easy to use. I pre-tested other two brands in PC category, namely IBM and Toshiba, but the associations for both of these brands were much less convergent than those for Apple. This pre-test was also conducted on other brands belonging to other categories, such as McDonald's, Starbucks, BMW, Armani, Timex, JcPenny, but the results have shown that either they had negative associations (e.g. McDonald's, Timex, JcPenny) or participants were in disagreement about their specific main associations. On the basis of these findings, Apple has been used as the stimulus. As regards the product within this brand, I have chosen the Apple Ipod Nano, which I though to be more tailored to my target.

An additional pre-test has been subsequently conducted with a separate sample of 38 undergraduate students to select features that differed along the product congruity. In particular, 20 potential Ipod Nano's new features were listed on a single-item 9-point semantic differential measure ("extremely inconsistent" vs. "extremely consistent" with Apple Ipod Nano).

The choice of this specific measure and, more generally, the choice of a single-item measure of product perceived congruity warrant some further considerations. As regards the first point, I have measured product perceived congruity by using the word "consistency", instead of "congruity", in my questionnaire. This choice is grounded on the belief that the word consistency is more frequently used in the

common American language, especially the one used by young people, than the concept of congruity, the meaning of these two words being considered the same. This interchangeability has emerged clearly during my conversation with many American people both in the academic environment and into the "world outside" in the very preliminary stage of my empirical analysis.

In addition to this, there is some evidence in the literature which supports this choice. For instance, Campbell and Goodstein (2001, p. 3) have stated that "under high-risk conditions consumers are likely to prefer an alternative that is *consistent* with schema expectations to one that is moderately *incongruent*", so using interchangeably the two words.

More broadly, my choice not to use the word "congruity" is further supported by the fact that studies that have applied schema-congruity theory to consumer research have often used words other than congruity itself to measure this variable. For instance, Campbell and Goodstein, after having manipulated this variable, have used the concept of "perceived typicality" in the manipulation check to measure the congruity of a new product with the schema. Maoz and Tybout (2002) have pre-tested the degree of congruity of some brand extensions to the core brand by using a single 9-point semantic differential scale in which the stimuli varied along the "perceived similarity" to the core brand, even tough these scholars have explicitly stated that certain brand extensions selected were more or less congruent than others to the brand (p. 121). Moreover, Stayman et al. (1992) have used a measure of subjective disconfirmation (see also Tse and Wilton 1988) to operationalize schema-congruity in their Experiment 2, and a measure of how similar the product was to schema expectations as a congruity manipulation check in Experiment 3.

As regards the second point, assumed that congruity might even have a multi-dimensional nature, my choice to use a single-item measure for this construct is motivated by three main reasons. First, researchers in similar studies have previously used single-item measures. In addition to the above-mentioned works by Maoz and Tybout (2002), Stayman et al. (1992) and Campbell and Goodstein (2001) in the schema-congruity stream, many works in the above-reported brand extension research stream have measured the relationship between a brand extension and the core brand using a single-item measure of similarity or typicality. For instance, Boush and Loken (1991) measured typicality by asking subjects to rate the overall similarity of each brand extension to products that the brand was currently making, on a 7-point scale anchored between "strongly disagree" and "strongly agree" (see also Barone et al. 2000). Second, my conversation with subjects in the preliminary stage of the analysis has revealed that people have a pretty clear view of what congruity (or consistency) means, and they even tend to use it practically. Third, the selection of a global measure of congruity seems to be necessary for the purpose of my research, because any multi-item measure of congruity of new features with the product would not recognize the difference in weights that different subjects would assign to the different dimensions. In my analysis each respondent is likely to have idiosyncratic perceptions of the degree of congruity between the new features and the product to which they are added. This means that any attempt to integrate my informants' responses would bias my results.

After having listed these potential Ipod Nano's new features, on the basis of inter-quartile ranges, I have retained three features for each congruity level (high, moderate and low). The features retained were: screen backlight, rigid plastic case

and 10 Gb of memory for extreme congruity, wireless internet connection, calculator and Dolby surround sound for moderate incongruity, oval display, GPS and integrated camera for extreme incongruity.

3.2.2 Procedure

One hundred twenty four undergraduate students at a large Midwestern university participated to an online survey with chances to win one of three $80 prizes in a lottery. A 2 x 3 between subjects factorial design has been employed, in which the number of new features has been varied (one vs. three)[7] and subjects have been asked to rate the attractiveness of the Apple Ipod Nano after the introduction of feature(s) having one of the three levels of congruity with Ipod Nano (congruity, moderate incongruity, extreme incongruity), compared to $200 cash (1 = $200 very attractive, 9 = Apple Ipod Nano very attractive) (see Appendix A).

As regards the use of product attractiveness as my dependent measure, it is a measure of liking and the choice of using this type of measure is motivated by the fact that I look at consumers' evaluation of different versions of the same product, rather than at how consumers choose among different products. In a competitive situation, a measure of choice would have been more consistent with the aim of the research. On the contrary, my theorizing is based on understanding whether consumers perceive a variation in their evaluation of the same product as some independent variables are manipulated. This implies that each respondent had to evaluate the specific version of the product (deriving from the specific manipulation

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[7] The feature chosen in the first number condition was one of the three assigned in the second number condition.

of the independent variables) to which he is assigned, rating its perceived attractiveness.

As regards the use of a comparative evaluation of Ipod Nano attractiveness ($200 versus Apple Ipod Nano), the rationale for this choice has been to avoid the ceiling effect that would have been likely to occur in the case of noncomparative product evaluation.

Finally, I have chosen $200 as the amount of money to oppose to Apple Ipod Nano because I wanted to choose an amount that was slightly higher than the current product price in order to obtain more variance in the responses.

3.2.3 Results

The manipulation check has confirmed that the features chosen for each of the three levels of congruity with the product differed systematically: the ANOVA model has been significant ($F_{2,122} = 16.169$, $p < .000$); contrasts have shown that the three moderately incongruent features were less congruent with Ipod Nano than were the three extremely congruent features (4.1 versus 5.66, $F_{1,122} = 7.57$, $p < .006$), but were more congruent with Ipod Nano than the three extremely incongruent features (4.1 versus 2.88, $F_{1,122} = 5.92$, $p < .016$).

An ANOVA on the evaluation index has revealed that the interaction between new features' number and congruity of these features with the product was significant ($F_{2,118} = 3.11$, $p < .048$, see Figure 1). As expected, planned contrasts have shown that as the number of new features increased, product attractiveness did not increase when new features were either moderately incongruent (4.92 vs. 5.257, $F_{1,118} = 1.54$, *ns)*, or extremely incongruent (3.773 vs. 3.914, $F_{1,118} = .67$, *ns)*. On the

contrary, there was a significant increase when the features were extremely congruent (2.405 vs. 4.950, $F_{1,118} = 12.2$, $p < .000$). Thus, H_1 finds support.

I have also accounted for some possible covariates that I thought to be potentially relevant for the purpose of my empirical analysis. In particular, as shown in Appendix A, I have controlled for some demographic variables, like gender, age, nationality, and, more importantly, for other items associated with the expertise with the product, based on previous research (e.g. Peracchio and Tybout 1996; Thompson et al. 2005). As regards the measures of expertise, I investigated the ownership of both any Apple Ipod and Apple Ipod Nano specifically (using dummy variables), and also the number of hours respondents had been using a Mp3 player per week. None of these covariates has resulted significant.

Another way to look at this interaction is to analyze the trends within each of the two number conditions. In this respect, in the case of the introduction of one new feature, an inverted U relationship has been observed (quadratic trend, $F_{2,118} = 6.384$, $p < .002$). Planned contrasts have revealed that the moderately incongruent new feature was evaluated better than both the congruent new feature (4.92 vs. 2.405, $F_{1,118} = 11.13$, $p < .000$), and the extremely incongruent new feature (4.920 vs. 3.773, $F_{1,118} = 5.09$, $p < .025$). However, when the three new features condition was analyzed such a quadratic trend was not found (quadratic trend, $F_{2,118} = .682$, *ns*). In particular, no differences have been observed between moderately incongruent features and congruent ones (5.257 vs. 4.950 $F_{1,118} = 1.56$, *ns*). A graphical representation of these results is provided in Figure 1.
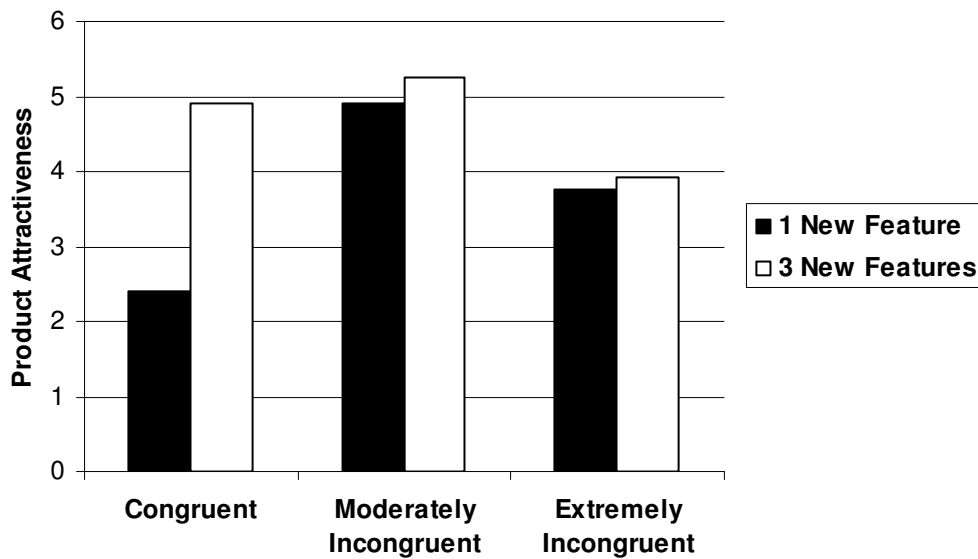
Figure 1 – Experiment 1 – The number of features by congruity interaction on evaluation

A main effect of congruity has been also found ($F_{2,118} = 4.507$, $p < .013$). In particular, an inverted U relationship has been observed (quadratic trend, $F_{1,118} = 4.207$, $p < .042$). Planned contrasts have shown that across the two new features' number levels product attractiveness was higher for moderately incongruent features than for both congruent features (5.088 vs. 3.667, $F_{1,118} = 6.93$, $p < .01$) and extremely product incongruent features (5.088 vs. 3.844, $F_{1,118} = 6.06$, $p < .015$). I further wanted to rule out the alternative account that this effect could be explained by the fact that the three moderately incongruent new features were perceived as more attractive by consumers than the other two types of new features. To achieve this goal, I have measured the features' perceived attractiveness and found no significant difference among the different types of features ($F_{2,122} = .386$, *ns;* $M_{congruent} = 6.6$, $M_{moderately\ incongruent} = 6.35$, $M_{extremely\ incongruent} = 6.2$).

3.2.4 Discussion

These results provide support for what I have hypothesized in H_1.

When new features are either moderately or extremely incongruent with the product, consumers are not able to perceive value from increasing their number. In fact, the increase in the number of features requires consumers to make a greater cognitive effort and to use more cognitive resources than they are required in the case of congruent features because in the former case they need to elaborate the information in the attempt to resolve incongruities. Given that every incongruent feature is a new stimulus to be reconciled with the product schema, consumers are not available to spend the cognitive resources necessary to resolve the incongruity deriving from more additional features and, finally, they do not perceive value from adding more incongruent features. In other words, consumers are not willing to elaborate the incongruent features as their number increases, and this results in their inability to infer the benefit of adding these features to products.

On the contrary, when features are congruent with the product consumers are able to perceive an overall benefit from increasing their number, because these features do not require additional consumers' cognitive resources for trying to resolve the incongruity. As a consequence, consumers may easily assimilate them to the product, and thus their product evaluation increases as the number of congruent features increases.

The further analysis within each of the two features' number conditions provides another interesting interpretation of these findings. In particular, the inverted U relationship between (in)congruity and product attractiveness has been shown only when one new feature has been considered. Otherwise, in the case of three new

features this relationship has not been observed because no difference has been shown between congruent features and moderately incongruent ones.

Taken together, these results reveal that consumers are able to reconcile the moderate - but not the extreme - incongruity of the features with their product schema until they spend the cognitive resources necessary to elaborate the information and try to resolve the incongruity. In particular, when the number of new features is relatively low (i.e., when it is one) consumers infer more value from moderate incongruity than from the two extreme cases (inverted U shape). But when the number of new features becomes higher the difference in product evaluation after adding congruent versus moderately incongruent features no longer exists. This finding is explained by the fact that whereas product evaluation increases as the number of congruent features increases, it does not increase as the number of moderately incongruent features increases.

Overall, the explanation I offer for these findings is that the increase in the number of incongruent features leads to a mismatch between the cognitive resources necessary to resolve the incongruity and the cognitive resources devoted by consumers. Such a mismatch makes consumers not able to perceive an overall benefit from the product enhancing based on increasing the number of either moderately or extremely incongruent features.

In this experiment I have also found evidence for a main effect of congruity, which has shown the same nonmonotonic pattern as that showed in the one feature condition. Hence, I have found a significant difference between the three congruity conditions, with moderately incongruent features performing better than extremely congruent or extremely incongruent ones. However, one could argue that content

confounds the effects I have found. In other words, this effect may be due to unique information provided by the specific features that were presented in each condition rather than to congruity itself. In this respect, I have shown that the specific features in each of the three congruity conditions do not differ in terms of their own attractiveness. However, I wanted to provide further converging evidence that lets me rule out such an alternative explanation for these effects.

In Experiment 2 I try to address such an issue in order to make the cognitive based-explanation I am proposing more robust, by ruling out unique content as a possible alternative account. To achieve this aim, I manipulate the amount of cognitive resources that consumers are available to spend in the case of the highest number of new features and test if there is any difference in product evaluation between spending more or less resources within each of the three levels of congruity with the product.

3.3   Experiment 2

This experiment has the aim to test if encouraging consumers to elaborate the information deriving from the new features thoughtfully makes them able to resolve the incongruity associated with these features and, as a result, if this makes them able to perceive value from adding more incongruent features.

As a consequence of my theorizing, in this experiment I have set the level of features at three, which is the highest level that I have already considered in the first study. The logic for considering only the three features condition, differently from what I have done in the first experiment, is to provide stronger evidence about consumers' ability of resolving moderate incongruity. More specifically, in

Experiment 1 I have found the nonmonotonic effect for the one feature condition, thus showing that consumers are able to resolve the moderate incongruity when exposed to only one new product feature; on the contrary, this effect has not been found for the three features condition.

My arguing is that consumers are available to spend enough resources to resolve the moderate incongruity coming from one new stimulus (e.g. one new product feature). This is also consistent with what Mandler and other scholars who have employed schema-congruity theory have found. However, Experiment 1's results have also shown that when three features were considered consumers did not seem willing to spend enough cognitive resources to elaborate the features and lead to a nonmonotonic effect.

On the basis of this finding, in Experiment 2 I expect to find a replication of such a result in the low involvement scenario, whereas I expect to shed light on the fact that when the resources devoted to the elaboration of the new features are substantial the nonmonotonic effect obtains even in presence of three features.

In addition to test H_2, and related to it, in this experiment I aim at providing further evidence that it is not unique content that explains the effects found in the first study. This would be proved by finding on the one hand a significant difference among the three congruity conditions when involvement is high, on the other hand no differences among the same conditions when involvement is low.

3.3.1 Procedure

I have used the same product and the same features as Experiment 1.

One hundred seventeen undergraduate students from a large Midwestern university have been my sample. Participation in the online survey has been motivated by chances to win three $80 prizes in a lottery.

A 2 (involvement: low, high) x 3 (congruity: high, moderate, low) between subjects factorial design has been employed. I have not varied the number of new features because I was interested specifically to the case of higher number (three new features).

Participants first read a short paragraph telling them that the research was being conducted as part of an effort to write a marketing case study about a new version of the Ipod Nano that Apple was planning to introduce in the North American market. Depending on the congruity condition to which they were assigned, participants were informed that the version of the Ipod Nano they had been exposed to included three additional features with respect to the current version they already knew.

The next paragraph contained instructions designed to influence participants' motivation to engage in elaborate thought regarding the product after the introduction of new features. In this case, I have followed a procedure employed by Maheswaran and Sternthal (1990) and Maoz and Tybout (2002). Consistent with these studies, subjects that have been assigned to high involvement condition have been told that they were one of only very few people providing input for the marketing case, that their opinion was of utmost importance, and that each response would have been evaluated individually. Subjects in the low involvement condition have been informed that they were one of many people providing input and that their responses would have been averaged with hundreds of others before the results would have been examined (see Appendix B).

The dependent variable employed has been the same as that used in Experiment 1.

As outlined earlier, an interaction between congruity and involvement was anticipated. Specifically, when the three new features were moderately incongruent with the product a difference between high and low involvement was predicted, whereas when the three new features were either congruent or extremely incongruent with the product no difference between high and low involvement was expected.

3.3.2 Results

The ANOVA on the evaluation index shows that the main effects of involvement (M_{high} = 5.855 vs. M_{low} = 4.941; $F_{1,111}$ = 4.114, p < .045) and congruity ($F_{2,111}$ = 3.340, p < .039), and the interaction between them ($F_{2,111}$ = 4.065, p < .02, see Figure 2) were all significant.
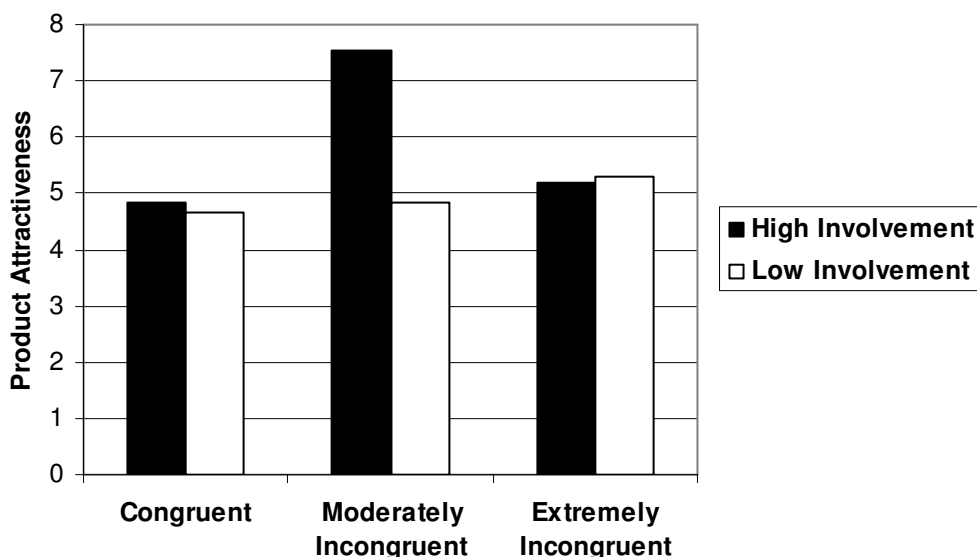

Figure 2 – Experiment 2 – The congruity by involvement interaction on product attractiveness

The main effect of congruity took the form of an inverted U relationship (quadratic trend, $F_{1,111} = 7.902$, $p < .006$). Planned contrasts have revealed that, across the levels of task involvement, product attractiveness after the introduction of new moderately incongruent features was higher than product attractiveness after the introduction of both congruent features (6.173 vs. 4.765, $F_{1,111} = 5.632$, $p < .022$), and the extremely incongruent ones (6.173 vs. 5.256, $F_{1,111} = 3.92$, $p < .05$).

As regards the interaction between congruity and task involvement, planned contrasts have revealed a highly significant difference between high and low involvement when the three new features were moderately incongruent with the product (7.522 vs. 4.824, $F_{1,111} = 12.26$, $p < .000$). On the contrary, no difference has been found when new features were either extremely congruent (4.842 vs. 4.668, $F_{1,111} = .84$, *ns)* or extremely incongruent with the product (5.2 vs. 5.313, $F_{1,111} = .51$, *ns*). Hence, H_2 is supported.

As reported in Appendix B, in this study I have controlled for the same covariates as those in Experiment 1, and none of them has shown to have a significant effect.

Furthermore, the trend analysis within each of the two levels of task involvement reveals that in the case of high involvement an inverted U relationship exists (quadratic trend, $F_{1,111} = 16.134$, $p < .000$). Planned contrasts have shown that moderately incongruent new features lead to higher product attractiveness than both congruent new features (7.522 vs. 4.842, $F_{1,111} = 12.23$, $p < .000$), and extremely incongruent new features (7.522 vs. 5.2, $F_{1,111} = 10.52$, $p < .000$). This result is consistent with what Maoz and Tybout (2002) have found when considering the introduction of a potential brand extension.

On the contrary, when involvement was low no evidence of such a trend has been found ($F_{1,111} = .062$, *ns*). In particular, planned contrasts have shown that there was no significant difference between product attractiveness after introducing moderately incongruent features and after introducing extremely congruent features (4.824 vs. 4.688, $F_{1,111} = .71$, *ns*). Similarly, no difference has been found between product attractiveness after introducing moderately incongruent features and product attractiveness after introducing extremely incongruent features (4.824 vs. 5.313, $F_{1,111} = 2.21$, *ns*).

3.3.3 Discussion

I have found that if encouraged to elaborate extensively the new features consumers are able to resolve the moderate incongruity even when more features are added at once.

This finding strengthens the cognitive elaboration-based explanation I have proposed for the effects predicted in H_1 and confirmed by the previous empirical analysis. In particular, I have argued that it is the match between the amount of cognitive resources required by processing new features and the amount of cognitive resources devoted by consumers to this task that determines whether consumers are able to infer the benefits associated with the additional features. In fact, when consumers are induced to think carefully of new features they have been shown to resolve the moderate incongruities and perceive value from adding even more than one moderately incongruent feature to the product. Hence, when consumers are induced to consider new features thoughtfully, there is no longer evidence for the mismatch between the resources required to elaborate the moderately incongruent

features and the resources devoted to this task, and this leads them to perceive a higher product attractiveness than in the case in which they are not induced to think so carefully (low involvement condition) of new features.

Otherwise, encouraging consumers to consider the features added to the product thoughtfully does not have effect in the cases of both congruent and extremely incongruent features. In fact, in the first case consumers do not need additional cognitive resources because congruent features typically require few cognitive resources; on the contrary, extremely incongruent features are features that cannot be reconciled with the product, regardless of the amount of cognitive resources that consumers spend.

Another key contribution offered by Experiments 2 is that it provides further evidence against the alternative explanation that the effect of different levels of congruity might have been due to unique information across the congruity treatments. The fact that in the low involvement scenario no differences have been found among the congruity levels, whereas such differences have been shown in the case of high involvement using the same features, implies that it was not the information provided by the specific features that was responsible for the effects I have found.

Finally, Experiment 2 replicates the results found in Experiment 1 in the low involvement condition. In fact, in Experiment 1 I have not found a nonmonotonic effect when three new features were considered. This means that if consumers do not employ more cognitive resources than usual, they are not able to resolve the incongruity coming from more features. On the contrary, this second study shows

that when consumers are made available to spend additional cognitive resources such a nonmonotonic effect occurs even when three new features are considered.

In conclusion, the explanation I offer for these results is that it is the amount of resources that consumers spend in facing new features that determines whether or not they are likely to perceive a value from adding more moderately incongruent features.

3.4   Experiment 3

3.4.1 Procedure

I have used the same product and the same moderately incongruent features as those used in Experiment 1 and Experiment 2.

One hundred ten undergraduate students from a large Midwestern university have been my sample. Participation in the online survey has been motivated by chances to win three $80 prizes in a lottery.

A 2 (level of construal: low, high) x 2 (number of product features: one, three) between subjects factorial design has been employed, and subjects have been asked to rate the attractiveness of the Apple Ipod Nano after the introduction of moderately incongruent feature(s), compared to $200 cash (1 = $200 very attractive, 9 = Apple Ipod Nano very attractive).

Temporal construal has been manipulated by telling subjects in the near future condition to consider purchasing the product in the next few days. On the contrary, subjects in the distant future condition have been told to consider purchasing the product in about twelve months from the time of the experiment (see Appendix C).

I expected a significant interaction between new features' number and the temporal construal. In particular, in the distant future condition an increase in the product attractiveness as the number of features increased was anticipated. On the contrary, no evidence for such an increase was expected in the near future condition.

3.4.2 Results

The ANOVA on the evaluation index shows that the main effect of number (M_{one} = 4.26 vs. M_{three} = 5.45, $F_{1,106}$ = 7.603, $p < .01$), the main effect of temporal construal (M_{near} = 4.29 vs. $M_{distant}$ = 5.42, $F_{1,106}$ = 6.824, $p < .01$), and the interaction between number and temporal construal ($F_{1,106}$ = 4.89, $p < .03$, see Figure 3) have been all significant.

Similarly to the two previous studies, I have not found evidence for the significant effect of any covariate.
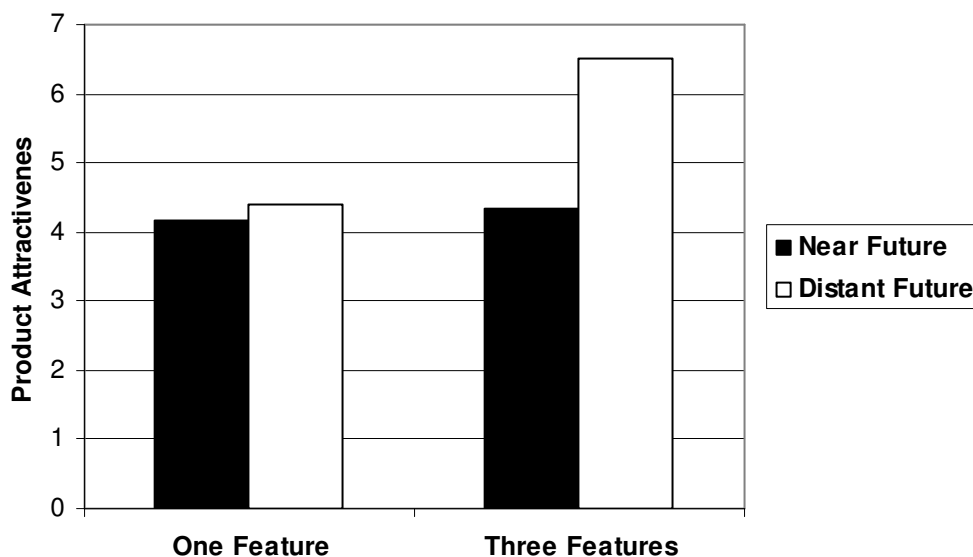

Figure 3 – Experiment 3 – The number of features by temporal construal interaction on product attractiveness

As regards the interaction between the two predictors, planned contrasts have revealed the existence of a significant difference between one feature condition and three features condition when distant future has been considered (4.346 vs. 6.5, $F_{1,106}$ = 10.52, p < .000). On the contrary, in the near future condition no difference has been revealed (4.172 vs. 4.409, $F_{1,106}$ = 1.14, ns). As a consequence, H_3 finds support.

3.4.3 Discussion

Experiment 3 has shown that whether consumers are able to perceive benefits from increasing the number of moderately incongruent features depends on the temporal frame of their evaluations. The variation in the closeness of their decision time determines whether consumers rely on more abstract or on more concrete features of the decision task. In the distant future scenario consumers are more likely to abstract than in the near future scenario.

Experiment 3's results highlight that manipulating the temporal frame of consumers' evaluation influences how consumers perceive the increase in the number of moderately incongruent features. In particular, I have found an increase in product attractiveness as the number of such features increased when considering to purchase the product in a relatively distant future; on the contrary, no evidence for such an increase has been found when consumers were considering to purchase the product in a near future condition.

The explanation proposed for these results is that when consumers imagine to purchase the product in more distant future they are more likely to see the connections between the features and the product, because they may consider that

those features may become consistent with the product. On the other hand, in the near future scenario consumers are more focused on the more concrete aspects of the "how" of the action, that is on the actual incongruity between the features and the product; as a consequence, as the number of these features increases consumers feel not able to reconcile them with the product as it currently is.

From a theoretical point of view, this finding is relevant because offers converging evidence that adding more moderately incongruent features may be beneficial for consumers in terms of product evaluation. Experiment 1 has shown the general effect that consumers do not perceive value from being exposed to an increase in the number of moderately or extremely incongruent features. Experiment 3 has replicated this finding in the near future condition, but has also offered the new evidence that in a distant future scenario consumers may assign a positive value to the product enhancing based on increasing the number of moderately incongruent features.

Experiment 3 is convergent with Experiment 2, as much as it provides further evidence that consumers may judge positively the introduction of more than one moderately incongruent feature at once. Nonetheless, whereas Experiment 2 has shown that different patterns are produced in the case of a higher number of new features depending on the level of task involvement, Experiment 3 has varied the number of new features showing that the increase in the number of new moderately incongruent features determines an increase in the product attractiveness only in a distant future scenario. In other words, Experiment 2 has provided evidence that, despite the first study's predictions, it is possible to produce a nonmonotonic effect even when adding more features, whereas Experiment 3, despite the first study's

predictions, has revealed that increasing the number of new moderately incongruent features may lead to positive evaluations.

General discussion

This thesis contributes to the existing research on the effect of adding new features to products by offering an innovative framework which explains when adding more features is likely to enhance the favorableness of product evaluation and when it is not, and on what behavioral mechanisms these findings are based.

Experimental results have shown that the probability that product evaluation increases as the number of features increases depends on the degree of congruity of the features added with the product. In particular, I have provided evidence that when new features are congruent with the product, consumers are likely to infer value from increasing the number of the features added to the product, because these features do not require cognitive effort for consumers. On the contrary, when new features are incongruent with the product, cognitive effort is required to resolve the incongruity, and thus increasing the number of features increases the cognitive effort, and the amount of cognitive resources necessary for consumers, because more incongruities have to be resolved. I have shown that consumers do not seem willing to spend the cognitive resources necessary for elaborating new features, and, as a result, they are not able to perceive value from increasing the number of incongruent features.

Hence, cognitive elaboration required by the kind features added acts as a key construct which determines when adding more features is likely to have a positive effect on product evaluation and when it is not.

The evidence of the role played by cognitive elaboration in explaining consumers' reaction to adding product features has been strengthened by further showing that when induced to devote additional cognitive resources to process the new features, consumers are able to resolve the moderate incongruity - but not the

extreme incongruity - even when more features are added. Hence, it is the match between the cognitive resources required by the new features and the cognitive resources that consumers spend that determines consumers' ability to perceive a benefit from adding more moderately incongruent features.

On the contrary, even if they are made willing to spend substantial cognitive resources, consumers do not seem able to resolve the extreme incongruity and infer value from having more extremely incongruent features. The theoretical explanation for this effect is that whereas elaborating moderately incongruent stimuli is likely to induce a sense of satisfaction, leading to positive evaluation, the elaboration of extremely incongruent stimuli is more likely to generate frustration and negative evaluation (Mandler 1982).

This finding is extremely relevant because sheds light on the possibility that consumers resolve the moderate incongruity even when exposed to more new stimuli. In fact, previous research has provided evidence only about consumers' ability to resolve the moderate incongruity associated with one new stimulus. In this case scholars have shown the existence of a nonmonotonic relationship between incongruity and evaluation. I have subsequently provided further evidence about the resolution of moderate incongruities by showing that consumers might be able to infer value from increasing the number of moderately incongruent features. In particular, I have shown that, regardless of the amount of cognitive resources available, consumers are likely to perceive value from increasing the number of moderately incongruent features if they are induced to consider purchasing the product in a distant future. However, the same effect has not been produced in the case in which subjects were considering purchasing the product in a near future.

Theoretical implications

The framework proposed in this thesis is clearly different from those proposed by the very few studies (e.g. Mukherjee and Hoyer 2001; Thompson et al. 2005) that have accounted for the cost-benefit trade-off of adding features. Specifically, I have considered the kind of the features added, as these previous studies have not done. The afore-mentioned scholars have proposed accounts for the resolution of this cost-benefit trade-off based on the definition of differential weights that value and learning-cost inferences assumed depending on the specific task. Then, consumers' net evaluations have been made dependent upon the distribution of such weights. Contrary to this theorizing, I have not assumed that consumers rely more on one inference than the other depending on the context, but I have proposed a more general and parsimonious framework which shows that it is the type of the features added to products, through different cognitive mechanisms, that determines whether consumers perceive benefits from adding features. Interestingly, this framework is also different from the one proposed by Gill (2008). Studying convergent products, this scholar has focused on the congruity between the new features and the goal (utilitarian or hedonistic) of the base product. Grounding on assimilation/contrast theory, he has found an asymmetry between adding a feature that is congruent or incongruent with an hedonistic product base and adding a feature that is congruent or incongruent with an utilitarian product base. He has found that adding a congruent, utilitarian feature to an utilitarian base generates an incremental value of the convergent product that is smaller than the one generated by adding a hedonistic, incongruent feature. This finding seems quite different from the general finding of the present work that adding more features that are congruent with the product is

better than adding more features that are incongruent with the product. Moreover, he has focused on adding a single feature, thus not considering the increase in the number of features.

In addition to this, my thesis shows that the phenomenon of "feature fatigue" described in previous work (Thompson et al. 2005) is function not only of the increase in the number of new features, but, beyond this, it depends on the degree of congruity between new features and products. In other words, feature fatigue does not only occur when "too many features" are added to a product; what this research shows is that the same increase in the number of features may or may not lead to improved product evaluation depending on how congruent with the product itself the specific features are perceived to be.

Finally, this work provides a context-dependent view of product differentiation. According to the traditional view of consumer preferences, each consumer has a well-defined preference order over a set of options or over different versions of the same option (Shafir 1993). These preferences are typically assumed to be static and context-independent. As a consequence, if the consumer perceives a feature as something valuable, when a product differentiates itself by introducing that new feature, consumer should evaluate the differentiated version of the product higher than its basic version. On the basis of this view, firms should tend to add as many new valuable features to their products as they can, because consumers' preferences do not depend on the decision context (i.e. the specific differentiating product). Consistent with some studies of consumer decision making (e.g. Payne et al. 1993, Kraus and Carpenter 2005), I have shown that consumers do not always have well-defined values and preferences for the products. On the contrary, such preferences

are often context-dependent, as much as different frames and contexts may bring forth different considerations, so giving rise to decisions that appear inconsistent with respect to the typical consumer reasoning (Shafir 1993). In particular, I have demonstrated that the introduction of new product features does not necessarily lead to an increase in product evaluations. Basically, a new feature that increases product evaluations when added to product A might not lead to such an increase when added to product B. Such a difference in consumers' evaluations is explained by the difference in the contexts in which consumers evaluate the introduction of new product features. More specifically, depending on what the mental representation that consumers have for different products is, the perceived contribution made by adding certain features to the global product evaluation may differ.

Managerial implications

This work has several important managerial implications. For instance, it provides further support for believing that managers should consider carefully not only the functional improvements of products when adding new features, but also the total cost of adding features. As regards the costs, companies often tend to consider the financial costs associated with the introduction of new product features as the most important part of the full cost. Since developments of Information and Communication Technology have been making the financial costs of adding features lower and lower, oftentimes managers tend to fully exploit technological progress, so adding as many features as technology allows. In this respect, this research sheds light on the importance to look at the psychological costs of adding features.

I have shown that when features are not consistent with consumers' idea of the product there is no benefit to add many features at once. In other words, product enhancing based on increasing the number of new features is not successful when such features force consumers to radically change their "product behavior". Then, the question becomes: What should firms do to maximize the performances of their product enhancing strategies? My findings suggest that managers should tailor such strategies to the typology of features they are thinking to add to products.

More specifically, adding at once a number of new features to an existing product can be a viable strategy only if the features introduced are clearly consistent with the basic idea and the current functions of the product. In this case, consumers only infer the functional benefits of being exposed to an enhanced product, while they do not have their basic idea of the product upset. Examples of these features and the related strategies can be given by having introduced on cell phones new ring tones, or the possibility to write short messages more quickly through adequate functions, or having equipped some cars with the possibility to use automatic gear change or with electronically adjustable seats.

Instead, enhancing products by adding several new features might not have good results when the features added are even moderately inconsistent with the product idea. This case can be represented by adding to certain technological products features that are typical of other high-tech products. Examples of this are given by including on cell phones the possibility to connect to the Web or to send faxes, or to equip digital audio player with dolby surround sound. In this case, the evaluation of the features *per sè* might even be favorable, but, since consumers need to learn how these new features fit the target product, it would be better to introduce them at

slower pace. In particular, experimental results have shown that this type of new features makes the product more appealing when they are introduced one by one. At the same time, my thesis has shown that in the case in which consumers are highly involved in the task of evaluating products when considering the introduction of new features they perceive value from adding several new features, however slightly inconsistent with the product that might be. This suggests companies to add more than one moderately incongruent feature to the product when consumers are particularly involved in the product.

Moreover, I suggest that companies should never add features that are too inconsistent with the idea of the product that consumers have in mind. Examples of this are given by introducing TV on cell phones, by integrating a TV into a refrigerator, by adding a video screen saver on a car stereo, or by adding Quick Look to Mac OS X Leopard. In these cases, consumers are forced to change the idea of the product they already had and this has been shown to produce negative evaluations.

Interestingly, an important strategic alternative is represented by the choice to create new schemas for products. In the current competitive scenario, this strategy can be thought as the result of the convergence, which has been playing a dominant role in the high-tech electronic sector. Such convergence makes it possible to create a single new product which contains a set of features that are part of different existing products. One of the clearest example of this phenomenon is the Apple iPhone, a multimedia telephone which includes digital camera, e-mailing system, multimedia music player, text messaging, and so on. As a consequence, it could be said that iPhone has created a schema that is different from schemas associated with existing products converging in it, like cell phones, Ipod, MP3 players or digital cameras.

Adding too inconsistent features to an existing base is different from adopting the above-mentioned strategy of creating new product schemas, because in the latter case no base exists, and different features typical of different existing products are put together to create a new product category.

Finally, this work suggests that the temporal distance between the time at which consumers are informed about the introduction of new product features and the time at which the enhanced product will be made available for being purchased is positively linked to the probability that consumers perceive favorably the introduction of more features that are moderately incongruent with the product. Importantly, this finding may have interesting implications for scheduling promotion and launch of such product innovations. For example, it could suggest companies to communicate the intention to introduce new product features that are not perceived as extremely congruent with the current idea of product quite long time in advance with respect to the time at which these features will be made available. In fact, if led to consider purchasing the product in a distant future, consumers are likely to imagine that their idea of the product will gradually evolve and this might make those feature that are currently perceived as slightly inconsistent more consistent with the product as it is imagined to be at the time of the purchase.

Limitation and future research

This research presents limitations that represent interesting challenges for future research. First, further investigation is needed for the effects I have found to be generalizable across other contexts. In this respect, this thesis has investigated only product evaluation in the context of a consumer electronics product (Apple Ipod

Nano). My interest in proposing a novel theoretical framework for explaining what drives consumers' reactions to adding more features to products has required me to be more concerned about offering a robust theory than about providing an extended generalization of the effects found across different settings. Nonetheless, further investigation in contexts other than electronics/communications industry would add to the robustness of the current findings. For example, in the context of services, adding more very incongruent services (e.g., building a swimming pool and a massage shop within an university area) may be valued more than I have shown in the case of an electronics product and more than adding extremely congruent services.

Second, research would be required to investigate consumers' evaluations when more than two levels of features' number are considered. In particular, it could be interesting for future research to add at least a third level and test what the pattern associated with increasing the number of product features within each of the congruity conditions is. For example, it would be important to test if product evaluation remains linearly and positively related to the number of new features when the features added are congruent with the product or if a nonincreasing effect is more likely. In the latter case there would be evidence for Weber's law that the sensitivity to increases along a dimension, such as the number of congruent features, reduces as the magnitude of the dimension increases. As a consequence, it could be interesting to investigate what the optimal number of new congruent features is. Similarly, in the case of moderately incongruent features, research might examined what is likely to happens when considering a third level of features' number either in

the case of high consumers' involvement or in the case of distant future purchase decisions.

Third, another important limitation of my research consists in the fact that our analysis has focused on the case of stand-alone evaluation of the product. I have investigated consumers' reaction to being exposed to different versions of the same product and I have shown that each of these versions is associated with different perceived attractiveness. An avenue of research addressing this limitation is given by investigating the effect of adding congruent or incongruent features to products in a competitive scenario. This scenario could be thought as one in which two or more brands are quite closer competitors and one of them differentiates by adding one or more features. For example, if these features are incongruent with the product, does this kind of differentiation lead to increase in the product market share or choice? Based on previous research (e.g. Carpenter et al. 1994), it could possible to imagine that introducing a new features that distinguishes a brand from the others in the same choice set, however incongruent that might be, is perceived as a positive signal by customers. This would lead to different conclusions from the ones I have reached in the current study with respect to the opportunity to add as many even incongruent features as possible.

Fourth, future work is required to propose other accounts for extending our knowledge about the resolution of the cost-benefit trade-off generated by adding product features. This could mean, for instance, to investigate the effect of different classifications of features than that based on the congruity with the product.

Fifth, factors that affect consumers' probability to infer value from increasing the number of moderately incongruent product features other than involvement and

temporal distance can be a fruitful area of future investigation. A more specific point is the possible investigation of the moderating role of temporal construal in explaining consumers' reaction to increasing the number of extremely incongruent features.

Finally, further research should also examine consumers' reaction to adding product features over an extended period of time. In particular, it would be interesting to investigate if there is any difference in consumers' evaluations after using the enhanced product and consumers' evaluation before the use of the product, in each of the three conditions of congruity. Thompson et al. (2005) have shed light on the difference existing between the effect of increasing the number of product features before using the product and the effect after consumers have experienced the enhanced product. I would suggest to add new evidence on what the interaction between number of new features and congruity is after consumers' use of the enhanced product.

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Appendix A

Examples of stimulus for Experiment 1 (the case of three extremely incongruent new features)

The purpose of this study is to understand the perceived attractiveness of the Apple Ipod Nano. Below you can see a picture of this model.

You will be asked to rate the perceived attractiveness of the Apple Ipod Nano after the addition of three particular below indicated features, relative to $200 cash.

There are no correct or incorrect answers. Simply rate the perceived attractiveness of the Apple Ipod Nano relative to $200 cash. Note that "1" means that $200 are extremely attractive relative to the Apple Ipod Nano, whereas "9" means that the Apple Ipod Nano is extremely attractive relative to $200 cash.

Thinking about the Apple Ipod Nano, imagine that three new features are going to be added to it. These features are:

- Screen backlight
- Rigid plastic case for Ipod
- 10 GB of memory.

Considering these new features added to the Apple Ipod Nano, how attractive is the Apple Ipod Nano relative to $200 cash?

$200 cash								Apple Ipod Nano
Very attractive								Very attractive
1	2	3	4	5	6	7	8	9

What is your gender?
What is your age?
What is your nationality?

Do you own an Apple Ipod Nano?
Do you own any other Apple Ipod?
How many hours do you listen to an Mp3 player a week?

Appendix B

Examples of stimulus for Experiment 2 (the case of three extremely incongruent new features in the high involvement condition)

This study examines people's perceived attractiveness of the Apple Ipod Nano. Below you can see a picture of this model.

This study is being conducted as part of an effort to write a marketing case study about a new version of the Apple Ipod Nano that Apple is planning to introduce in the North American market. Such a version includes the addition of three particular below indicated features to the current version.

Consider that you are one of only few people providing input for the marketing case and your opinion is of utmost importance. Each response will be evaluated individually.

You will be asked to rate the perceived attractiveness of the Apple Ipod Nano after the addition of these three features, relative to $200 cash. Note that "1" means that $200 are extremely attractive relative to the Apple Ipod Nano, whereas "9" means that the Apple Ipod Nano is extremely attractive relative to $200 cash.

Thinking about the Apple Ipod Nano, imagine that three new features are going to be added to it. These features are:

- Screen backlight
- Rigid plastic case for Ipod
- 10 GB of memory.

Considering these new features added to the Apple Ipod Nano, how attractive is the Apple Ipod Nano relative to $200 cash?

$200 cash								Apple Ipod Nano
Very attractive								Very attractive
1	2	3	4	5	6	7	8	9

What is your gender?
What is your age?
What is your nationality?
Do you own an Apple Ipod Nano?
Do you own any other Apple Ipod?
How many hours do you listen to an Mp3 player a week?

Appendix C

Examples of stimulus for Experiment 3 (the case of three moderately incongruent new features in the near future condition)

The purpose of this study is to learn your views about the attractiveness of the Apple Ipod Nano. Below you can see a picture of this model.

You will be asked to rate the attractiveness of the Apple Ipod Nano. To do this, you will be asked to rate the attractiveness of the Apple Ipod Nano in relation to being given $200 in cash. Note that "1" means that $200 is extremely attractive in relation to the Apple Ipod Nano, whereas "9" means that the Apple Ipod Nano is extremely attractive in relation to $200 cash.

In making this evaluation, imagine that Apple is planning to add three new features to Ipod Nano. These new features are: **wireless internet connection**, **a calculator**, and **Dolby Surround sound**. Also imagine that you are considering the purchase of this product category in the next few days.

How attractive would it be to purchase the Apple Ipod Nano with the three new features listed above in the next few days compared to $200 cash?

$200 cash								Apple Ipod Nano
Very attractive								Very attractive
1	2	3	4	5	6	7	8	9

What is your gender?
What is your age?
What is your nationality?
Do you own an Apple Ipod Nano?
Do you own any other Apple Ipod?
How many hours do you listen to an Mp3 player a week?