

Newness, value and new product performance

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Both consumers and organizations hold a dualistic attitude towards product innovativeness. Consumers are known to hold an inherent tendency to approach (neophilia) and avoid (neophobia) new food products at the same time. Similarly, at a managerial level it is not all that clear whether revenues of innovation strategies should come primarily from incremental or more discontinuous innovations. This paper reviews product newness in relation to new product performance. We describe studies that show that newness *per se* is not related to market performance but that it does so if it provides meaningful differentiation to consumers in the market place. We zoom in on the consumer perspective on how consumers respond to newness and briefly discuss three dominant approaches in the study of consumers and product newness. We then discuss how firms in their product development strategies and processes can enhance the likelihood that such meaningful differentiation is achieved. At a strategic level market orientation can be an important strategy to enhance product meaningfulness. At a more tactical level, we discuss problems with traditional approaches for idea generation and the fuzzy front-end of new product development.

Introduction

Despite years of effort in both academic and applied research into New Product Development (NPD), NPD failure rates are still very high. Such high failure rates are problematic for a number of reasons, both economically (they

incur costs without adequate revenues) and relational (relationship with the retailer and the effect on brand and company image). For foods, the situation is not all that different with similar high levels of failure being reported (Stewart-Knox & Mitchell, 2003).

Not surprisingly then, there has been a lot of research to identify the critical success and failure factors in NPD in general (e.g. Cooper & Kleinschmidt, 2007; Hauser, Tellis, & Griffin, 2006) and for foods NPD in particular (Stewart-Knox & Mitchell, 2003). This stream of research has resulted in a fairly consistent set of critical success and failure factors (see e.g. Henard & Szymanski, 2001) related to market place characteristics (e.g. competitive response), firm processes (e.g. proficiency in marketing, technology and predevelopment tasks), firm strategies (e.g. marketing and technological synergy) and innovation characteristics (e.g. product advantage). There is, however, much less consensus about product newness as a determinant of new product success (e.g. Szymanski, Kroff, & Troy, 2007). A variety of relationships between product newness and market performance have been identified ranging from inverted U-shaped relationship (e.g. Goldenberg, Lehmann, & Mazursky, 2001) to U-shaped relationship (Kleinschmidt & Cooper, 1991) and even more complex nonlinear relationships have been suggested (e.g. Steenkamp & Gielens, 2003). Still, other studies have explored linear relationships between newness and performance (e.g. Szymanski *et al.*, 2007).

Understanding the underlying reasons for this disagreement on newness-to-market—performance relationships is important from a consumer science perspective as well as managerially. A recurring theme in this literature is that consumers and organizations hold a dualistic attitude towards product innovativeness. This is particularly evident in the area of foods as humans are known to hold an inherent tendency to approach (neophilia) and avoid (neophobia) new food products at the same time. This is known as the generalist (Rozin, 1976) or omnivore paradox (Fischler, 1990). At a managerial level it is not all that clear whether the benefits of innovation are more likely derived from a focus on incremental *versus* more discontinuous innovations (Costa & Jongen, 2006; Stewart-Knox & Mitchell, 2003). Some studies have suggested that the food industry should be more innovative to be successful, whereas others (e.g. Steenkamp & Gielens, 2003) would argue that foods will rarely bring a radical level of innovativeness and if they

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do so they experience quite some resistance with consumers because of their neophobia (e.g. Pliner & Pelchat, 1991) and the reluctance of consumers to adopt the changes in behavioral patterns required for new product adoption (e.g. Ram & Sheth, 1989).

More recent research has pointed at the fact that the disagreement in findings on the newness–performance relationship may be largely due to the inadequate conceptual and methodological operationalisation of “product newness” *per se*. It has been argued that it is important to discriminate between newness to the world, newness to the firm and newness to the consumer. Between these stakeholder groups, the criteria on which newness is assessed differ (Calantone, Chan, & Cui, 2006; Daneels & Kleinschmidt, 2001; Garcia & Calantone, 2002). Firms express product innovativeness by comparing the product’s technology content with competitors and in terms of the marketing and technological resources required. Customers on the other hand evaluate product newness in terms of the mental models and behavioral habits that need to be altered (Calantone *et al.*, 2006: 411). These differences need to be taken into account in the design of strategies and processes for new product development in line with customer needs.

The focus of this review is on product newness. Much on the scientific evidence on the newness–value–performance relationship comes from outside the food domain, without necessarily reaching consensus. The aim of this review is to familiarise food marketers and new product developers with state of the art knowledge in this field, by integrating insights from a variety of disciplines and research approaches.

Newness and market success studies

There is a long history of classifying new products on the basis of their degree of newness. A distinction can be made between approaches focusing on a company perspective of newness and approaches relying on market/customer/consumer perspectives on newness. A well-known classification of newness based on the consumer perspective is the three levels of innovation from continuous to discontinuous (e.g. Gatignon & Robertson, 1991). At the low end of the scale are continuous innovations which have minimal effect on behavioral patterns of consumers. Dynamically continuous innovations have a higher degree of newness but still relate to products currently in use. As a result they require only moderate adaptations on existing behavioral patterns. Finally, discontinuous innovations violate some of the essential perceptions and habits and aim at creating new behavioral patterns on the part of the consumer and the firm. A well-known example of newness classification focusing more on the company perspective is the Booz, Allen, and Hamilton (1982) which classifies innovation strategies in terms of their newness to the market (three levels) and the company (three levels). Depending on newness to the company, low innovativeness involves strategies such as new product lines (new to the company), improvements or

revisions of existing products and cost reductions (low newness to the company). Additions to existing product lines (medium newness to the company) and repositionings (low newness to the company) typically are conceived of as medium innovativeness and high innovativeness to the market is exemplified by new to the world products, which by definition hold high levels of newness to the company too.

The relationship between newness and market success

Many empirical studies in the NPD performance literature take a firm’s perspective towards newness. Some of them also incorporate the market newness of a product. All possible relationships between newness and market success have been found ranging from a linear, U-shaped, and inverted U-shaped relationship when moving from low to moderate to highly innovative products. These studies are summarised in Table 1, together with some of their defining features.¹

In an attempt to reconcile the contradictory findings, Steenkamp and Gielens (2003) suggest that the relationship between newness and trial probability is moderated by degree of newness. At low levels of newness (such as in fast moving consumer goods, including foods), market success varies with newness in a U-shaped fashion while at higher levels of newness it does so in an inverted U-shaped fashion. However, also note that Steenkamp and Gielens (2003) focus on trial probability whereas many other studies focus on market success, which for fast moving consumer goods primarily emerges from repeat purchases.

Why is the relationship between newness and market success still unclear?

The above described studies show that the relationship between newness and success is still undecided. Several authors have attempted to explain the inconsistency in results from the conceptual and methodological operationalisations of the product newness construct.

First of all, newness has primarily conceptualized from a company perspective. In terms of newness measures, Daneels and Kleinschmidt (2001) point at the “failure to distinguish the perspective taken (customers’ or firms), and lack of distinction between newness as familiarity (close to the firm’s prior customers and technologies) and synergy (fit with the firm’s resources, skills and capabilities)” (p. 358). They argue that newness is a challenge to the firm both in terms of what to do (familiarity with customer and technology) and how to do it (fit with the firm’s technical and marketing resources). Garcia and Calantone (2002) argue that inconsistencies in conceptual and methodological operationalisations of product innovativeness measures occur along four dimensions: (1) macro- (new

¹ A more detailed analysis from these studies can be found in a longer version of this paper, which can be obtained from the authors.

Study	Dependent variable	Newness measures	Design	Finding
Kleinschmidt & Cooper, 1991	% Successful, return on investment (ROI).	Managers/project leaders evaluation of 'new to the firm' and 'new to the world' (low, moderate and high innovativeness).	Sample of 195 new product cases from 125 industrial firms.	U-shaped
Steenkamp & Gielens, 2003	Trial probability at level of individual household.	Expert evaluation of newness on two bipolar items, referring to the extent to which the product was new and unique.	Sample of 239 new fast moving consumer goods (FMCGs) that were introduced in The Netherlands in 1997–1998. Consumer purchases were monitored in a household panel one year.	U-shaped
Gielens & Steenkamp, 2007	First-year level of purchases and the first-year trend in purchases of FMCGs at level of individual household.	Category management experts evaluated newness on a five-point item, referring to the extent to which the product was new.	Sample of 104, 67, 56, and 74 new FMCGs in France, Germany, Spain, and the UK, respectively. Consumer purchases were monitored in a household panel one year.	U-shaped
Goldenberg <i>et al.</i> , 2001	% Failure and success.	Experienced marketers/engineers evaluations on low, moderate and high newness to the market.	Historical approach, 127 new product cases (70 successes and 57 failures).	Inverted U-shaped
Henard & Szymanski, 2001	Meta-analysis: taken from previous studies.	Taken from previous studies.	Meta-analysis.	Linear relationship

to the world, the market or an industry) *versus* micro-perspectives (new to the firm or the customer), (2) focus on marketing discontinuities (i.e. requiring new marketplaces to evolve and/or new marketing skills for the firm) *versus* technological discontinuities (i.e. requiring a paradigm shift in the state of science or technology embedded in the product, new R&D resources and/or new production processes for a firm), (3) one-dimensional *versus* multi-dimensionality of newness, and (4) categorical (all or nothing) *versus* continuous measures (newness as matter of degree). Calantone *et al.* (2006) take this distinction between the firm's and customer's perspective further arguing that when "product innovativeness is measured using firm- and customer-oriented perspectives simultaneously, effects on new product performance may be inconsistent" (p. 411).

Furthermore, the studies mentioned above have been based on expert evaluations of newness rather than on consumer perceptions of how new these products are. Measures were obtained from company managers involved in the innovation process (Kleinschmidt & Cooper, 1991), by marketers in historical context (Goldenberg *et al.*, 2001), category market research experts (Gielens & Steenkamp, 2007; Steenkamp & Gielens, 2003) or taken from previous studies without too much analysis of the construct (Henard & Szymanski, 2001). This may be problematic as consumers base their newness perception on criteria different from those that experts use. As argued by Daneels and Kleinschmidt (2001), at the consumer level, responses to product newness are determined by perceived risk (uncertainty and performance risks) involved in adoption of the innovation and the amount of change in existing behavioral

patterns required for adoption of the innovation. Further, from the adoption of innovation literatures (e.g. Rogers, 1995) it is well-known that adoption depends on the consumer evaluation of the new product in terms of its so-called innovation characteristics: compatibility, complexity, trialability, observability and perceived relative advantage.

Another reason for the lack of consensus in the relationship between newness and product success is that previous studies failed to distinguish between newness as such and the product advantage that arises from newness.² For example, in the Kleinschmidt and Cooper (1991) study, there is a confound between newness *per se* and product advantage arising from newness. In their database most of the highly innovative products also provide higher levels of product advantage thus prohibiting a conclusion on any causal relationship for newness *per se*. In a similar way, Calantone *et al.*, (2006) argue that innovativeness measures have failed to differentiate between three partially overlapping dimensions: innovativeness *per se*, customer familiarity and product advantage. Product advantage refers to the product's superiority relative to other products in the market place on dimensions such as quality, benefit and function (Calantone *et al.*, 2006). Obviously, product innovativeness may lead to product advantage but not necessarily so. Customer familiarity, on the other hand, refers to (lack of)

² Goldenberg *et al.* (2001) and Henard and Szymanski (2001) include innovativeness and product advantage as main effects in their analyses which compensates for some of the bias but both studies do not explore the interaction effect.

newness to the customer. In their empirical work Calantone *et al.* (2006) show that product innovativeness does not exert a direct effect on new product profitability. Rather, product innovativeness enhances product advantage which in turn enhances product profitability. However, product innovativeness also decreases customer familiarity thereby reducing new product profitability at the same time. Thus product innovativeness has a mixed effect on new product profitability. However, note that in the Calantone *et al.* (2006) study the ratings on innovativeness, customer familiarity and product advantage were provided by company managers, not necessarily customers.

A recent meta-analysis on 41 correlational studies between product innovativeness and market success by Szymanski *et al.* (2007) lends further support to the distinction between newness *per se* and product advantage arising from newness. They show that the strength of the observed relationship is strongly affected by how innovativeness is being measured. On average, the strength of the relationship (correlation) is enhanced by 0.25 in studies ($N = 8$) that include both meaningfulness and newness in their innovativeness construct compared to studies ($N = 17$) that only include newness in their innovativeness construct. This is in line with the Calantone *et al.* (2006) argument that product innovativeness enhances market performance when the innovativeness leads to meaningful differentiation in the market place. This line of reasoning is also consistent with Daneels and Kleinschmidt (2001) who argue that understanding adoption of newness by the customer requires the joint consideration of the new product's innovation attributes such as relative advantage, compatibility, complexity, trialability and observability (Rogers, 1995), the perceived uncertainty and performance risks that constitute adoption risk (Gatignon & Robertson, 1991) as well as the requirements for behavioral change to occur (Ram & Sheth, 1989).

More recent creativity literature emphasizes that both newness and meaningfulness should be taken into account. Novelty (i.e. unique differentiation) and meaningfulness (i.e. appropriateness and usefulness to target users) are identified as two fundamental dimensions underlying the creativity construct (e.g. Amabile, 1983). Hence, product creativity is important in successful innovation as it fills a unique mind position with the consumer and a mind position that is relevant (Horn & Salvendy, 2006). In social science research, the most widely used definition of creativity focuses on the meaningful novelty of some output relative to the conventional practice in the domain it belongs (Amabile, 1983). Dean, Hender, Rodgers, and Santanen (2006) provide an extensive review of measures for idea evaluation and suggest that the useful-dimension ('idea quality' in their terminology) may further be broken down into relevance (effective in solving a problem), workability (easily implemented without violating known constraints) and specificity (the extent to which it is worked out in detail).

Newness and consumer's new product evaluation processes

At the micro level, ambivalence in consumer response to product newness has been approached from three, complementary, paradigms which will be discussed next.

Adaptiveness perspective: omnivore paradox; neophobia and neophilia

In the food literature, consumer ambivalence to product newness has been addressed as a reflection of the "omnivore paradox" (e.g. Fischler, 1990; Rozin, 1976). As omnivores, humans are equipped with two co-existing fundamental tendencies: neophobia and neophilia. Neophilia, the urge towards novelty, ensures that omnivores are continuously on the search for new foods and is reflected in a curiosity for and exploratory tendency to try new and unfamiliar products. At the same time, the conservative tendency of neophobia, the fear for novelty, ensures that omnivores are careful in trying new food products as those foods they do not know may be poisonous or otherwise harmful (e.g. spoiled meat or dangerous mushrooms). As a result, humans are alternating between approach (neophilia) and avoidance (neophobia) for new products. In the food literature, the two sides of the omnivore have received considerable attention in the work on neophobia (e.g. Martins & Pliner, 2005) and variety seeking tendencies (e.g. Van Trijp, Hoyer, & Inman, 1996; Van Trijp, Lahteenmaki, & Tuorila, 1992). Similar two factor theories have been proposed by Spielberger, Peters, and Frain (1981) and Zuckerman (1991) showing that the net results of the two conflicting tendencies is a consumer preference for new products with moderate levels of newness, such that they generate interest and satisfy curiosity without inducing fear.

Optimal level perspectives: OSL and optimal level of arousal

Optimal level theories focus on the level of stimulation or arousal that is inherent in deviations from the familiar. Different from the drive reduction theories, these so-called "complexity theories" explain the consumer preference for moderate levels of newness from the concept of optimal stimulation level or optimal arousal level. Although there are slight differences between these theories (for a review see e.g. Koster & Mojet, 2007; Van Trijp, 1995), they have in common their argument that newness is a source of stimulation and arousal (i.e. newness has arousal potential) and that both too low and too high level of arousal result in negative affect compared to intermediate levels of stimulation/arousal. This is because consumers have a need for stimulation or arousal, and there is a characteristic level of arousal/stimulation that an individual seeks to maintain and under which he or she functions most effectively. This optimal level of stimulation or arousal differs between individuals and hence in the marketing and consumer behaviour literature there have been many attempts to

measure these individual differences (e.g. Roehrich, 2004 for an overview).

Prominent within this approach is the work by Berlyne (1960) who emphasized the collative properties of a stimulus as a source of stimulation. Berlyne labeled these properties “collative” since “... in order to evaluate them it is necessary to examine the similarities and differences, compatibilities and incompatibilities between elements – between a present stimulus and stimuli that have been experienced previously (novelty and change), between simultaneously aroused responses (conflict), between stimuli and expectations (surprisingness), or between simultaneously aroused expectations (uncertainty)” (Berlyne, 1960: 44). Thus, a new product has arousal potential because of its collative properties and the amount of arousal potential is a function of characteristics such as novelty, change, surprisingness, *etcetera*. Because consumers have an intermediate optimal stimulation level they seek out for stimuli that deliver a moderate level of stimulation. This approach suggests that there is an optimal level of newness in stimuli, hence consumers will prefer products that deliver moderate newness rather than no or very high levels of novelty (inverted U-shaped relationship).

In the food literature, consumer acceptance after repeated exposure to foods has intensively been studied from the sensory-specific satiety framework (Rolls, Rolls, Rowe, & Sweeney, 1981) as well as boredom (e.g. Moskowitz, 2000; Zandstra, Weegels, Van Spronsen, & Klerk, 2004), stimulus satiation (e.g. Hetherington, Price, & Nabb, 2002), and long-term acceptability (e.g. Chung & Vickers, 2007b). Specifically related to product newness, these studies build on two competing theoretical frameworks. On the one hand, mere exposure theory (Zajonc, 1968) would predict that liking would increase with repeated exposure because repeated exposure breeds familiarity and hence content. On the other hand, repeated exposure also breeds boredom and hence contempt. More recent of these studies (e.g. Chung & Vickers, 2007a; Hetherington *et al.*, 2002; Zandstra, De Graaf, & Van Trijp, 2000) more specifically differentiate between liking and wanting as dependent measures and show that repeated exposure to foods decreased wanting (e.g. boredom, tiredness) more strongly than liking (Chung & Vickers, 2007b). However, the specific patterns of decrease liking and wanting over time differ depending on the type of food, the experimental context and the physiological status of the respondent (see Zandstra *et al.*, 2004 for an overview of these studies). For food products that are initially novel and unfamiliar, desire seems to initially increase with repeated exposure, whereas for products that are initially familiar liking and desire decreases more rapidly with repeated exposure (Levy, MacRae, & Koster, 2006).

Overall, results obtained from (experimental) food research seem to support the inverted U-shaped relationship between product newness (and complexity) and liking over time. But there is a moderator effect of the level of

initial newness due to their unfamiliarity. For novel products liking increases initially, but for products that are more familiar liking decreases gradually over time with repeated exposure.

Information processing perspective: categorization

Consumer responses to newness have also been extensively researched from an information processing perspective. Since early research by Sujan (1985) many of these studies take a categorization perspective. Categorization research builds on the assumption that consumers' existing knowledge in memory is organized in structured, but flexible, schemata: networks of knowledge with relevant concepts (e.g. brands, attributes such as a food's color, size and sweetness and attribute levels) represented as nodes and nodes being interconnected through links (e.g. associations between brands and attributes) which may differ in strengths. These knowledge structures are of paramount importance as they help us to recognize new instances in the world around us. For example, based on the attribute configuration (red, round, of particular size and with a little green stem) consumers can make the inference that this is a tomato, simply because this attribute configuration is stored in memory within the tomato category.

How well information about new products resembles a schema stored in memory has a significant effect on the way consumers process and evaluate information. In other words it does not only affect categorization processes but also judgment processes. Early research in this field has focused on classification of novel objects (what is it?) and shows that consumers are flexible in learning about novel stimuli even when they do not perfectly fit (i.e. have full overlap with) an existing category. Consumers have a number of mechanisms to interpret and learn about new products (e.g. Michaut, 2004). Initially, consumers will follow the process of categorization. If there is (close to) perfect overlap between the new product and existing knowledge, interpretation and inference making goes very fast. Put simply, consumers will recognize (this is a tomato) and make inferences accordingly (and hence it is healthy) from their existing knowledge structure. If there is substantial but not perfect overlap such as when the product has one new attribute (e.g. with lycopene) or a new attribute level (slightly different color) consumers will attempt to “force-fit” the new product into an existing category (assimilation). In those instances, the new stimulus will be interpreted as a representative from an existing category. If such assimilation cannot be successfully achieved, consumers have the ability to turn to accommodation i.e. adapt or re-organize the schema of the first category cued after considering some attributes of the target. In those instances, they will make changes in their knowledge structure to accommodate for the new stimulus, for example, not only by defining one or more subcategories, with some overlap to the main category but also some specific defining attributes (subtyping).

In the tomato example, such new tomato subcategory could be the functional food tomato subcategory.

When an existing knowledge category cannot be adequately accommodated to capture the new stimulus, consumers will need to re-categorize by finding a new category in memory, different from the category initially cued: schema switching. Finally, if even that process is not working, consumers will convert to so-called piece meal integration and evaluate the new product on an attribute by attribute basis.

Affect and consumer evaluation of new products

The process of interpretation becomes more cognitively demanding if straightforward categorization (or with limited assimilation) is not possible. Mandler (1982) has proposed an early theory on how affect originates from the encounter with a (very) new stimulus which deviates from existing knowledge. Basically, he argues that incongruity between the new instance and the existing knowledge influences both the valence and extremity (strength) of the affective response (e.g. Meyers-Levy & Tybout, 1989). The theory states that there is positive affect associated with the successful resolution of incongruity (i.e. successful assimilation or accommodation). As such successful resolution is not required at low levels of newness and unlikely to happen at high levels of newness, moderate levels of newness will be associated with more positive (processing) affect than either low or very high levels of mismatch with current knowledge. This is known as the “moderate incongruity effect”. This positive affect even happens for moderately incongruent attributes which are negatively valenced. In other words, Mandler’s (1982) theory argues that there is an inverted U-relationship between affect and product newness *per se*.³ Studies in the consumer behaviour context, find confirmation for the Mandler hypothesis (e.g. Meyers-Levy & Tybout, 1989; Ozanne, Brucks, & Grewal, 1992; Stayman, Alden, & Smith, 1992). However, more recent studies suggest that the moderate incongruity effect (i.e. consumers prefer novel stimuli over the typical ones) is moderated by perceived risk and product familiarity. Campbell and Goodstein (2001) show that the moderate incongruity effect only occurs when perceived risk is low. Under high perceived risk consumers have a preference for the norm rather than products that moderately deviate from that norm. Zhou and Nakamota (2007) show that experienced users tend to view enhanced features (i.e. different levels on a common attribute, such as ‘this food product is easier to prepare’) as congruent and unique features (i.e. attributes not typically associated with the

category, such as a softdrink claiming to contain antioxidants) as moderately incongruent. That is why they prefer unique products. Novice consumers on the other hand are likely to view enhanced features as moderately incongruent and unique features as too incongruent and thus too risky. As a result they tend to prefer enhanced products.

Learning by analogy in consumers’ interpretation of radically new products

Early research focused very much on inference generation from a single existing category as a means of categorizing and interpreting new stimuli. However, this poses challenges on the consumer interpretation of radically new products which by definition defy straightforward classification in terms of one existing product concept (Moreau, Lehmann, & Markman, 2001; Moreau, Markman, & Lehmann, 2001). Instead, radically new products occur at the interfaces between multiple categories and would require knowledge transfer from more than one category to recognize and interpret the new stimulus (e.g. Saaksjarvi, 2003). For example, it might be argued that functional foods require a new merging of mental categories where the food category, previously seen as a source of sensory pleasure, is extended to include medical benefits. To interpret functional foods correctly, it would be important that consumers merge knowledge from the medicine and food categories to understand the concept of functional foods.

Recently there has been increased interest in understanding how consumers interpret such radically new products largely based on ‘learning by analogy’ theory (e.g. Gregan-Paxton, Hibbard, Brunel, & Azar, 2002). Both categorization and learning by analogy involve a knowledge transfer process from existing knowledge (the base) onto the new instance (the target) and occur in three stages: access, mapping, and transfer (e.g. Gentner & Markman, 1997). Once a category has been accessed, properties of that category are mapped onto the new instance and knowledge is transferred on the new stimulus to allow interpretation and inference making. Analogies (“the product is like...”) differ from categorization (“the product is...”) in the nature and treatment of attributes and relations in the process of mapping and transfer (e.g. Gregan-Paxton & Moreau, 2003). Categorizations involve literal similarity match between the base and the target wherein both the attributes and relations associated with the category can be appropriately mapped and transferred to the target. With analogies, however, only a certain subset of relations associated with the category can be mapped and transferred to the target. As a result, analogies place much greater constraints on knowledge transfer than does categorization by focusing consumers exclusively on relational similarities. One obvious way of stimulating learning by analogy is in providing consumers with one or more plausible category labels that suggests a new product’s category membership. As Moreau, Markman, *et al.*, (2001) argue this is because such category cueing helps consumers to see the object as

³ Note that the moderate incongruity effect implies an inverted U-shaped relationship between newness and new product liking. Compared to studies that have used market success as dependent measures, this finding is in line with Goldenberg *et al.* (2001) but at odds with Kleinschmidt and Cooper (1991) and Steenkamp and Gielens (2003) who find an inverted U-shaped relationship.

a whole (“it is...”), to focus on that particular category reducing attention for other categories, and because category membership tends to override feature similarity as a factor predicting the type of inferences about missing information (Moreau, Markman, *et al.*, 2001). However, this research also confirms that consumers exhibit a strong tendency to base their inferences and predictions on a single category (e.g. Ross & Murphy, 1996) even when presented with an item that is difficult to classify unambiguously and particularly so among consumers with high category familiarity (Gregan-Paxton, Hoeffler, & Zhao, 2005). Only with strong and significant contextual support to use multiple categories will they integrate multiple categories rather than use single category inference making (Moreau, Markman, *et al.*, 2001). This is (at least partly) because consumers tend to give priority to the perceptual input (rather than the conceptual input) as more diagnostic source of product inferences. However, as Gregan-Paxton *et al.* (2005) show this holds much more strongly for natural categories (items that exist in nature) than for so-called artifact categories (those not naturally occurring, but made by humans such as cell phones and PDAs).

Newness and value in the NPD process

Given that newness is related to market success when it provides meaningful differentiation in the market place, the question arises: what can companies do to enhance both the meaningfulness and novelty of a new product? This issue has been addressed at the strategic level and the operational level. At the more strategic level it has been argued that market orientation enhances success in new product development (e.g. Atuahene-Gima, 1995; Kahn, 2001). At the more operational level, it has been argued that proficiency at the early stages of the NPD process (e.g. idea generation and screening) is a crucial determinant of market success.

Market orientation

Market orientation is a central concept in the marketing literature and consists of activities associated with the gathering and dissemination of market intelligence and the appropriate analysis and response to that intelligence (Kohli & Jaworski, 1990). It is reflected in a corporate culture (e.g. Slater & Narver, 1994) that is systematically and entirely committed to the continuous creation of superior customer value. This entails collecting and co-ordinating information on customers, competition, and other significant market influencers (such as regulators and suppliers) to use in building that value. Various studies have shown that a market orientation positively influences NPD performance. Amongst other factors, because of its consumer focus in innovation (e.g. Gatignon & Xuereb, 1997; Jaworski & Kohli, 1993; Narver & Slater, 1990) market orientation is expected to enhance an organization’s ability to learn about consumers, which in turn is expected to lead to successful NPD.

However, other scholars (e.g. Christensen & Bower, 1996; Hamel & Prahalad, 1991) have challenged market orientation on the fact that market orientation might lead to myopia and conservatism in innovation thus biasing the firm towards incremental innovation. The argument is that relying on marketing intelligence carries the danger of too narrowly focusing on current markets, consumers, customers and competitor at the expense of a focus on emerging markets and customers. As a result there has been lively debate (e.g. Zeithalm *et al.*, 2006) on whether being market-led (i.e. close to consumers) actually inhibits or stimulates the generation of useful new product ideas.

The two opposing views have been reconciled by the explicit recognition that market orientation has both responsive and proactive dimensions (Atuahene-Gima, Slater, & Olson, 2005; Connor, 1999; Narver, Slater, & MacLachlan, 2004), sometimes referred to as the market-driven and a driving-markets approach (Jaworski, Kohli, & Sahay, 2000). The difference is not on *whether* to incorporate a focus on consumers, competitors and market conditions, but rather on *how* this is implemented. The proactive dimension focuses on proactively shaping consumers and/or the structure of the market in a direction that enhances the competitive position of the business. It thus involves the discovery and satisfaction of future, still latent, needs of consumers. An optimal market orientation, with its focus on understanding and satisfying *latent* needs, is inherently entrepreneurial in how creativity is stimulated and fostered within the organization (Slater & Narver, 1995). The key competence here is to generate creative new product ideas in response to identified market needs, using both competitor and customer orientation. Customer orientation is less likely to help a firm create novel products (because of customer myopia and conservatism), but enhances product meaningfulness because of alignment to customer needs and wants. Novelty is enhanced by competitor orientation because it focuses on more salient and novel features (Im & Workman, 2004).

The literature suggests that the key to market success lies in balance between responsiveness and proactiveness evidenced in short-term success from incremental innovation and long-term success from more radically new innovation. Baker and Sinkula (2007) found that market orientation supports recognition of this balance, and avoids a bias towards either the one or the other. This requires a culture that values creativity and learning from exploration and experimentation as well as responsiveness to customer needs (Slater & Narver, 1995). Such balanced market orientation can be enhanced by interdepartmental connectedness, top management emphasis and market-based reward systems (Kirca, Jayachandran, & Bearden, 2005). As evidenced by a recent meta-analysis on previous studies on the impact of market orientation (Kirca *et al.*, 2005), market orientation pays off in terms of organization performance thanks to the enhanced levels of innovativeness it generates, which in turn leads to superior quality and

enhanced customer loyalty. *Atuahene-Gima et al. (2005)* confirm that both responsive and proactive market orientation are needed for market success, but that balance should be achieved carefully as companies will not benefit from having both orientations at a high level.

Idea generation and screening

At the more operational level, the debate on responsive *versus* proactive approaches in NPD is mirrored in the role that is assigned to customers/consumers in the idea generation and screening stages of the new product development process. This so-called fuzzy front-end (*Cooper & Kleinschmidt, 1986*) of the NPD process involves all those activities that come before the more formal and well-structured NPD process (*Koen et al., 2002*). Proficiency in the fuzzy front-end of the NPD process is critical to NPD success (*Montoya-Weiss & Calantone, 1994*), often ignored and often receiving too little time and effort (*Van Kleef, 2006*). There is general consensus that this stage should focus on the generation of innovative ideas that have consumer appeal, but much less consensus exists on *how* the voice of the consumer should be implemented. Many have argued that too active involvement of consumers at these early stages would be meaningless as consumers do not know and cannot express what they want (*Ulwick, 2002*) and would lead to me-too ideas that hardly excite the consumer. Others have argued that this is primarily due to serious deficiencies in existing marketing and consumer research techniques (e.g. *Wind & Mahajan, 1997*), which are believed to capture the past as a kind of rear-view mirror, or at best the present aspects of consumer focus (*Zeithalm et al., 2006*). Current marketing research techniques are better equipped for measuring consumer response to presented new product ideas (product testing) than to involving consumers upfront (*Eliashberg, Lilien, & Rao, 1997*), that is, screen rather than generate new ideas. But even then, consumers are often believed to be a poor source of inspiration because they are more likely to evaluate on desirability against their *current* needs and wants rather than on feasibility and opportunities vis-à-vis their *future and potentially latent* needs and wants. As a result, consumer involvement in idea generation and screening is believed to bias the process towards ideas that are close to consumers' current needs rather than innovative in addressing future needs and wants. Such inherently reactive response might constrain the researcher in the elicitation of unfulfilled consumer needs, because consumer input is restricted to responses to an already existing concept or product.

Yet, despite all problems associated with involving consumer relevance proactively in the NPD process, incorporating the voice of the customer early on in the NPD process has been identified as a crucial variable affecting market performance (*Griffin & Hauser, 1993*). So again, it is not a matter *whether* to involve consumer input, but rather *how* to involve the voice of the customer early on.

As a result, several researchers have sought to remedy the deficiencies of traditional consumer research by suggesting alternative approaches to provide guidance in the development of really new products and not just line extensions and incremental improvements to existing products. *Wind and Mahajan (1997)* already early identified the challenge to augment the consumer research toolbox with new research approaches that avoid consumers' short-term and current experience bias and enable them to identify their true needs and wants as they may involve under future scenarios.

Early stages of NPD processes involve the crucial steps of idea generation, idea screening and idea concretisation (*Griffiths-Hemans & Grover, 2006*). Whereas idea generation primarily involves creativity, idea concretisation and implementation is the key to innovation. Typically ideas are the starting point for innovation, but if these ideas are not taken up by the organization, the idea will probably die (*Amabile, 1983*). So, success of creativity at the early stages of NPD should be evaluated on the basis of their innovation success, rather than the amount of ideas and their creativity *per se*.

Traditionally, idea stages have been implemented through creativity enhancing techniques and resulting ideas are then screened to select the most promising ideas. Creativity enhancing techniques attempt to support the creative thinking process by fulfilling a stimulating role, that is, generate many ideas that trigger the user. A variety of idea generation techniques is available, of which the most common and popular method is brainstorming. The underlying assumption of this and many other idea generation techniques is that generating ideas is most productive when conducted in an unrestricted fashion. For example, brainstorming encourages creativity by creating an atmosphere in which there is deferral of judgments which stimulates participants to generate a large number and wide variety of ideas. It is believed that the more ideas produced, the greater the probability that a real original idea will emerge (e.g. *Baker & Hart, 1999*).

This approach has been challenged on three particular grounds. First, it has been argued that ordinary, main stream consumers are a poor source of creativity, because their thinking is heavily restricted by their current concerns, their current needs and wants and their current knowledge (e.g. *Lilien, Morrison, Searls, Sonnack, & Von Hippel, 2002; Von Hippel, 1988*). As such their mindset biases them to the status quo and limits them to think out of the box. Second, creativity techniques and particularly the widely applied brain storm sessions approach aimed at taken consumers out of their restricted mindset, have been challenged on their effectiveness. Several studies (see *Diehl & Stroebe, 1987* for a review) have pointed at "the illusions of group productivity" arguing that although such open brainstorming techniques may lead to a feeling of high creativity, most of these sessions do not result in useful ideas that are taken further in the NPD process and that working in groups may actually hinder rather than stimulate

creativity (Nijstad, Stroebe, & Lodewijckx, 2003). Production blocking, fear of evaluation and free riding have been identified as reasons for this finding. For example, the usual variety of discussions held within a brainstorming group tends to interfere with a person's ability to work in a productive way. A third line of critique, focuses on the fact that although consumer input is incorporated in the idea generation stage, the actual idea materialisation (i.e. idea concretisation) is often seen as a responsibility of the R&D groups within the company, thereby, leading to new product forms and formats that lack differentiation and potentially consumer relevance (Lilien *et al.*, 2002; Von Hippel, 1988). Several innovative early NPD techniques (see Van Kleef, Van Trijp, & Luning, 2005 for a broader overview) have been proposed to overcome these three limitations of traditional NPD processes (i.e. consumers' status quo bias, alternatives to brain storms and limited creativity in forms and formats). But to large extent these techniques have still to prove their applicability within the food research domain.

Conclusions and discussion

Literature on new product performance has yielded a number of consistent results on the critical success and failure factors related to the firm's strategy, processes, competitive environment and product characteristics (Henard & Szymanski, 2001). However, there is much less consensus about the relationship between product newness and market success. In this review, we have analyzed the newness-to-performance relationship with the aim to familiarise the food research community with the totality of scientific evidence both from the food domain and beyond and from a diversity of scientific disciplines and research approaches. The results show that newness *per se* is not related to market success but that it is does so if it provides meaningful differentiation to consumers in the market place to enhance market success. This is also reflected in the literature on creativity (e.g. Dean *et al.*, 2006) which similarly emphasizes that meaningfulness and newness are two separate subdimensions of the creativity construct.

Within the food domain, the newness–value–performance relationship has received limited attention to date. Much of the research in studies on boredom, product satiation and monotony is experimental in nature in which respondents report ratings for liking and wanting during a number of consecutive product exposures. This research shows that for products that are highly familiar, boredom sets in rather quickly, whereas for unfamiliar stimuli liking tends to increase during the first exposures. However, initial liking tends to be higher for familiar as compared to unfamiliar new food products, an effect which may be enhanced by neophobia overriding curiosity. This seems to suggest that there is an optimal level of newness that is preferred by consumers: high enough to induce curiosity and a desire to learn more about the new food, but low enough not to induce fear and neophobia. Several studies in consumer

psychology (e.g. Meyers-Levy & Tybout, 1989; Stayman *et al.*, 1992) and innovation literature (e.g. Goldenberg *et al.*, 2001) support this idea, but it contradicts findings by Steenkamp and Gielens (2003). One explanation for this may be that Steenkamp and Gielens (2003) focussed on trial probability rather than market success as the key dependent variable in their analysis and that their newness ratings were obtained from expert judges rather than consumers. However, there is a clear need to further explore within the food domain how market success (as measured by sales, market share or total time on the market) relates to product newness. Trial is a necessary condition for market success but for fast moving consumer goods such as foods not necessarily an adequate measure for market performance (Gielens & Steenkamp, 2007). Such studies would require a longitudinal analysis of actual market data (as obtained from household purchase data or retail scanner data) against consumer perceptions of product newness (e.g. Michaut, 2004).

Foods and the food NPD process share many similarities with other product categories. However, as foods are actually ingested, they differ in their level of "intimacy" and precaution on the part of the consumer (Ronteltap, Van Trijp, Renes, & Frewer, 2007). This may be (partly) explained from the 'omnivore paradox' (e.g. Rozin, 1976) which states that humans are equipped with two conflicting, but complementary tendencies: to both approach (neophobia) and avoid (neophilia) newness. Therefore, research findings from outside the food domain do not necessarily translate directly to foods as for foods consumers may be more reluctant to try and incorporate new items into their behavioral repertoire. For foods consumers may hold a stronger innate tendency to balance newness against meaningfulness. A crucial challenge for food development and food marketing lies, therefore, in the development of new food products that provide meaningful differentiation. There is consensus in the literature that the incorporation of a formal well-designed and structured NPD process (e.g. Cooper, 1999) enhances innovation success. However, at the same time there is considerable concern that the traditional approaches to early idea generation, screening and evaluation may often not be highly effective. New methodologies (see Van Kleef *et al.*, 2005) have been proposed outside the food domain (such as ZMET, innovation acceleration, lead user approach and innovation templates) that may be helpful in ensuring that in the NPD process meaningful differentiation is built in early and explicitly as part of a proactive approach to market orientation. More systematic studies are required to assess their full potential within the food domain.

In summary, new products which provide consumer-relevant differentiation relative to existing market supply have a higher probability of market success. However, the road of getting there is complex and has several caveats. We hope that by integrating several lines of thought, both conceptually and methodologically, we help product

developers in finding the delicate balance between novelty (differentiation) and value (meaningfulness) as two important sources of input to successful innovation.

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