Undecidable? Categorization and its effects
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Chapter 4

THE EFFECT OF CATEGORY LABELS ON NEWNESS PERCEPTION AND WILLINGNESS TO PAY AND THE MODERATING ROLE OF CONSUMER INNOVATIVENESS

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Abstract

This study examines the effect of category labeling on consumers’ newness perception and willingness to pay. In addition, it examines the moderating role of consumer innovativeness and argues that consumer innovativeness positively moderates the effect of newness perception on willingness to pay, and the effect of using mature versus emerging category labels on willingness to pay. By conducting real online auctions in a field setting among consumers who pay for the product if their bid wins, and conducting a short survey among all bidders, this study demonstrates that consumer innovativeness moderates the effect of newness perception on willingness to pay for radically innovative products. In addition, providing an emerging category label positively affects consumers’ newness perception and willingness to pay for innovative products. The results also show that consumer innovativeness positively moderates the effect of providing an emerging label on willingness to pay for innovative products. Significant results from category labeling of products that are incrementally innovative were not found. This study contributes to the categorization literature by demonstrating that providing category labels that differ in their degree of matureness can affect consumers’ willingness to pay and their newness perceptions, and by demonstrating the moderating role of consumer innovativeness.
4.1 Introduction

Consumers use their knowledge from existing product categories to understand, compare, and value new products (Gregan-Paxton, and John, 1997; Moreau et al., 2001). To provide consumers with guidance about how a product can be categorized and understood, sellers often provide visual and textual category cues, for instance, when advertising the innovative product. A visual cue can, for example be symbols, forms, or colors. A textual cue can, for example, be slogans, descriptions of the functionalities of the product, and category labels. Communicating category labels stimulates consumers to transfer the knowledge that they have of the provided category to the target (Yamauchi and Markman, 2000). These category labels can provide explicit guidance to consumers in their categorization efforts and help consumers decide to which alternatives the product should be compared to in order to judge the value of the product (Mogilner et al., 2008). Category labels thus seem to be important category cues, which can have an effect on consumers’ product evaluations. This phenomenon is the focus of this paper.

Category labels seem especially useful when how the product can be categorized is not directly obvious to consumers, which is often the case with radically innovative products. Radically innovative products have no dominant design yet (Utterback and Suarez, 1993; Srinivasan et al., 2006), and cannot be categorized in an existing product category because they are incongruent with consumers’ expectations and existing knowledge (Stayman et al., 1992). This can have a negative effect on product evaluation (e.g., Noseworthy and Trudel, 2011). Next to helping consumers in their categorization efforts of radically innovative products, category labels can also signal or emphasize the newness of these products. Research shows that if consumers can categorize a new product, they are better able to judge the newness of a product, which positively influences product evaluation (Goode et al., 2013). This paper builds on this work by providing a refined view on the role that category labels play in consumers’ newness perceptions and willingness to pay for radically innovative products.

Previous research argues that there could be multiple category labels in use for the same product category when this category is emerging (Grodal et al., 2014). Emerging categories tend to lack a dominant category label (Grodal et al., 2014). Therefore, when sellers of radically innovative products want to use a category label – for example
to advertise their product— they face the challenge of choosing between multiple category labels. In addition, as many radically innovative products combine elements from multiple existing product categories, sellers can choose between new and established category labels. Although there are studies that have examined the effect of providing category cues on consumers’ categorization efforts and evaluation of new products (e.g., Goode et al., 2013; Bloch, 1995; Gregan-Paxton et al., 2005; Yamauchi and Markman, 2000), there are no studies that explicitly examine the effect of providing category labels on consumers’ newness perceptions and willingness to pay for radically innovative products.

This paper studies the effect of providing category labels that differ in their degree of matureness on consumers’ newness perceptions of radically innovative products. It argues that consumers’ newness perception is positively influenced when labels refer them to an emerging category. In addition, whether or not labels affect consumers’ willingness to pay is examined. Previous research argues that using familiar labels—for example, when advertising new products—is important for how consumers categorize and evaluate new products (Yamauchi and Markman, 2000). However, this paper argues that the fit between the degree of matureness between the label and the degree to which the product is innovative that is important for the effect on willingness to pay. Therefore, the effect of category labels that differ in their degree of matureness on the willingness to pay for both radically and incrementally innovative products is tested. Finally, the moderating role of consumer innovativeness (i.e., consumers’ tendencies to buy new products more often and earlier than others) is examined (Midgley and Dowling, 1978). Individual characteristics—such as consumer innovativeness—are often ignored in studies of the effect of categorization on product evaluation. This paper argues that consumers are generally willing to pay a higher price if they perceive a product as new, and that consumers who score high on consumer innovativeness are willing to pay a ‘newness premium’ on top of that.

By conducting ‘real’ online auctions—that is, online auctions in which consumers pay with their money if they win an auction—and conducting a short survey, this study demonstrated that consumer innovativeness moderates the effect of newness perception on willingness to pay for innovative products. In addition, providing an emerging category label compared to a mature category label positively affects consumers’ newness perception and willingness to pay for radically innovative products. The results also show that consumer
innovativeness positively moderates the effect of providing an emerging category label on willingness to pay for radically innovative products. Significant results from category labeling in relation to an incrementally innovative product were not found.

This study contributes to literature on categorization in several ways. First, it demonstrates that category labeling has a different effect depending on the degree to which a product is innovative. The results were only significant for the effect of category labeling in the case of a radically innovative product and not of an incrementally innovative product. This suggests that category labeling plays a stronger role in the case of radically innovative products. Second, consumer innovativeness plays an important moderating role in the relation of newness perception and category labeling on willingness to pay for radically innovative products. Therefore, evidence is provided that consumers who are interested in innovation are willing to pay a ‘newness premium’.

This paper continues with a review of the relevant literature on consumer innovativeness and the effects of categorization and category labeling on newness perception and willingness to pay. On the basis of this review hypotheses are formulated, followed by a discussion of three studies in which we present the methods and results. This paper is completed with a discussion of theoretical and managerial implications.

4.2 Theory

4.2.1 Categorization

Consumers often use their knowledge of existing product categories to determine the value of products (Gregan-Paxton, and John, 1997; Moreau et al., 2001). Categorization is the process of identifying the similarities among alternatives within a category and identifying the dissimilarities among alternatives across categories (Medin and Schaeffer 1978; Rosch and Mervis 1975). By comparing the product to prototypes of a category that they are already familiar with, consumers try to understand new products (Rindova and Petkova, 2007; Talke et al., 2009). Previous research has demonstrated that when consumers cannot easily categorize a product, that product’s evaluation is negatively affected (e.g., Noseworthy and Trudel, 2011). Once a product is categorized, consumers attempt to judge how different the product is...
from the alternatives in that category (Yamauchi and Markman 2000). The way that consumers categorize the product and subsequently judge how it differs from alternatives is important for their evaluation of the product. Their efforts to categorize and identify the similarities and differences are guided by the different category cues of a product or the cues that are provided along with the product (Goode et al., 2013). An example of a cue that is often provided along with the product is a category label, which is the core element studied in this paper.

4.2.2 Category labels

To guide consumers in their categorization efforts, sellers can use category labels – for example when advertising their innovative products. When sellers propose a category for a product, for example by communicating the category label, consumers try to identify the similarities between the alternatives in the proposed category and the product (Yamauchi and Markman 2000). The product is categorized in the proposed category when sufficient similarities are identified and the category label is deemed acceptable. Therefore, using acceptable category labels can help consumers make sense of products, especially innovative products. Yamauchi and Markman (2000) showed that category labels are more important for consumers to make sense of innovative products than other information (such as features and shape) that reveals the similarity of innovative products with alternatives in a particular category. In general, category labels seem to be important and useful elements that sellers can use to guide consumers in their categorization efforts.

4.2.3 Emerging categories

As categories and their associated labels are socially constructed, they can differ in the degree to which they are mature (Rosa et al., 1999). Emerging categories tend to have low consensus about the core attributes that represent that category (Rosa et al., 1999), since no dominant design of the product has been established (Utterback and Suarez, 1993; Srinivasan et al., 2006). When there is no dominant design the core functionalities of the products within a category substantially differ across the products in that category (Utterback and Suarez, 1993).
Next to a lack of consensus on the functionalities of products in an emerging category, there might also be a lack of consensus about which category label can be assigned to the products in an emerging product category.

Radically innovative products are often characterized by the fact that they combine elements from multiple categories (Moreau et al., 2001). If this is the case, sellers have the opportunity to choose between different category labels (Grodal et al., 2014). On the other hand, sellers have less freedom in their decisions about which category label to provide when the product is incrementally innovative. These products – in contrast to radically innovative products – tend to reveal (e.g. by means of the visual appearance or mentioned functionalities) the category membership of the product. This limits the seller in the number of acceptable category labels that can be used. However, in the case of radically innovative products – of which the visual appearance and functionalities tend to be different from existing products – sellers have more freedom to assign less well established category labels to indicate that the product belongs to a new product category. Moreover, when categories are emerging, the number of multiple category labels that are introduced often increases rapidly (Grodal et al., 2014). Proposing category labels can be used as cues to indicate which category the products can be assigned to, and it may also have an effect on the newness perception of products.

4.2.4 Newness perception

Consumers’ newness perception of a radical innovative product can be influenced by how they categorize the product. Consumer newness perception is not an objective value; rather, it differs per individual (e.g., Blythe, 1999; Goode et al., 2013; Hauser, Tellis, and Griffin, 2006). In line with previous research, we define newness perception as the degree to which a product is new to the individual (e.g. Blythe, 1999; Goode et al., 2013). In general, two important factors related to categorization play a role in consumers’ identification of the newness of a product. First, when confronted with a product, consumers will use available category cues – such as perceived functionalities and visual appearance – to identify the category membership of the new product (Goode et al., 2013). Since categories differ in their degree of matureness, consumers’ newness perception can be influenced by the category in which the
product is perceived to belong to, relative to other categories (e.g. the category of smartphones is newer to the market compared to the category of fax machines).

Second, once a category is identified, consumers will carefully try to identify similarities between the innovative product and the alternatives in that category (Danneels and Kleinschmidt, 2001; Hoeffler, 2003; Ziamou and Ratneshwar, 2003; Olshavsky and Spreng, 1996). Consequently, consumers’ newness perception will be influenced by the degree to which an innovative product is perceived as different from the alternatives within a category (Radford and Bloch, 2011). To summarize, newness perceptions are constructed by the degree to which the category in which consumers place the product is new compared to other categories, and by the degree to which consumers perceive the innovative product as different than the alternatives within a category.

4.2.5 Newness perception and evaluation

Previous research argues that product newness can influence consumer behavior but that there is no consensus among scholars about whether product newness elicits higher product evaluations (Calantone, Chan, and Cui, 2006; Lee and O’Connor, 2003; Szymanski, Kroff, and Troy, 2007). Some studies show that consumers appreciate product newness (e.g. Danneels and Kleinschmidt, 2001; Firth and Narayanan, 1996), while others demonstrate negative effects on product evaluation (e.g. Song and Parry, 1999). Studies also describe a ‘U-shaped’ relationship between product newness and performance (Kleinschmidt and Cooper, 1991), in which products that score either high or low on newness perform better. The idea behind this U-shape is that radically innovative products can create a competitive advantage and allow for better differentiation between alternatives, which might have a positive effect on product evaluation. Conversely, products that are perceived as less innovative might be perceived as more familiar and cause less uncertainty, which may have a positive effect on product evaluation.

Despite the identified different effects of product newness on product evaluation, previous studies show that consumers tend to demonstrate inherent novelty seeking behavior and value newness (Bloch, 1995; Hirschman, 1980; Moreau and Dahl, 2005). In addition, providing consumers with knowledge about innovative products – for example by providing a description, a category label, or visuals – has a
positive effect on consumers’ evaluations of those innovative products (Moreau et al., 2001). Particularly when consumers can categorize a product with certainty, they value the newness of the product (Goode et al., 2013). Thus, in line with previous research it was expected that consumers’ newness perception would have a positive effect on their evaluation of the product (Danneels and Kleinschmidt, 2001; Firth and Narayanan, 1996; Moreau and Dahl, 2005). However, the effect might differ per person since some consumers are more attracted to innovation than others (e.g., Blythe, 1999; Goode et al., 2013; Hauser et al., 2006).

4.2.6 Consumer innovativeness

Previous research has extensively studied how consumers differ in the degree to which they appreciate innovation (e.g. Goldsmith, Freiden, and Eastman, 1995; Goldsmith, Hauteville, and Flynn, 1998; Midgley and Dowling, 1993). This line of research argues that consumer innovativeness can be seen as a personality trait, and that consumers differ in their openness to innovation. Research shows that this openness is important for the adoption and diffusion of new products (Hauser, Tellis, and Griffin, 2006). In line with the previous literature, consumer innovativeness is defined in this paper as the tendency of consumers to buy new and innovative products more often and more quickly than other consumers (Roehrich, 2004; Vandecasteele, and Geuens, 2010).

Previous studies have demonstrated that – in general – consumer innovativeness positively influences new product evaluations (e.g. Im, Bayus, and Mason, 2003; Klink and Athaide, 2010; Foxall, 1995; Goldsmith et al. 1995; Manning, Bearden, and Madden, 1995; Midgley and Dowling, 1993). Midgley and Dowling (1993), for example, found that in the fashion industry consumer innovativeness was positively related to purchase intention of new fashion items. In addition, in the software industry, consumer innovativeness had a positive influence on new product adoption (Foxall, 1995). Klink and Athaide (2010) found that consumer innovativeness was positively related to product evaluations of products with new brand names. Given the positive effect of both consumer innovativeness and the previously discussed positive effect of newness perception on product evaluation, it was expected that
consumer innovativeness would positively moderate the effect of newness perception on consumers’ willingness to pay.

Hypothesis 1: Consumer innovativeness positively moderates the positive effect of newness perception on willingness to pay.

4.2.7 Category labels and newness

As mentioned earlier, categories can vary in their degree of matureness. In the case of emerging categories, boundaries are not fully established yet (Rosa et al., 1999). As the boundaries are less clear – and the features (e.g. functionalities and visual appearance) that belong to the products in those categories – consumers perceive fewer similarities between the alternatives in those categories. Consequently, products that are perceived as belonging to emerging categories may also be perceived as newer than products that are categorized in mature categories.

Next to functionalities and visual appearance, category labels can act as a cue as to which category a product belongs to, and can thus influence consumers’ newness perceptions. Category labels can influence consumers’ newness perceptions in several ways. First, when a label from an emerging category is provided and consumers perceive it as an acceptable label consumers’ newness perception can be positively influenced. Second, the label can also act as a ‘newness cue’ because consumers might not be familiar with the specific category label. However, such a new label should be sufficiently comprehensible, and distinctive enough to signal the novelty of the underlying product (Grodal et al., 2014).

It was expected that in the case of radical innovative products, providing an appropriate category label for an emerging category compared to a label for a mature category would increase consumers’ newness perception of the product.

Hypothesis 2: Compared to providing a mature category label, providing an emerging category label leads to a higher newness perception of a radically innovative product.
4.2.8 Category labels and evaluation

In addition to helping consumers categorize the product, category labels influence consumers’ newness perceptions. As discussed previously, perceived newness has a positive effect on consumers’ product evaluation. Therefore, when providing a label from an emerging category, it was expected that this would have a positive effect on consumers’ willingness to pay. However, it was expected that this would only be the case if the label was sufficiently comprehensible (Grodal et al., 2014) and if the label was perceived as appropriate. Regarding the latter, this paper argues that a category label is not appropriate if it is not in line with the degree of innovativeness of the product. In other words, if a product is radically innovative but a label from a mature product category is provided, there may be a lack of perceived congruity. Previous research demonstrates that perceived incongruity can have a negative effect on product evaluation (Noseworthy and Trudel, 2011; Meyers-Levy and Tybout 1989). Thus, it was expected that consumers’ willingness to pay for a radically innovative product would increase when a category label from an emerging category compared to a mature category was provided. In addition, it was expected that providing a category label from an emerging category would have a negative effect on consumers’ willingness to pay in the case of an incrementally innovative product. This led to the following hypotheses:

Hypothesis 3a: Compared to providing a mature category label, providing an emerging category label leads to a higher willingness to pay for a radically innovative product.

Hypothesis 3b: Compared to providing a mature category label, providing an emerging category label leads to a lower willingness to pay for an incrementally innovative product.

It was expected that these two hypothesized effects would be moderated by the degree to which consumers are innovative. Research shows that consumer innovativeness is positively related to consumers’ evaluations of new products (Im et al., 2003; Klink and Athaide, 2010). Therefore, it was expected that consumers who scored high on consumer innovativeness would be willing to pay extra if an emerging label was used in combination with an innovative product. In this case, they would receive multiple ‘newness cues’ from the provided category.
label and the product, which could be appealing to consumers who appreciate innovation.

Hypothesis 4a: Consumer innovativeness reinforces the positive effect of providing an emerging category label compared to a mature category label on consumers’ willingness to pay for a radically innovative product.

On the other hand, if an emerging category label was provided along with an incrementally innovative product, it was expected that this would have negative consequences on product evaluation among innovative consumers. Those consumers might be disappointed when the label suggests that the product is new while that is not the case, which negatively influences product evaluation. In addition, sellers who use emerging category labels when selling a product from a mature category might be mistrusted because consumers might feel that those sellers are trying to fool them. This leads to the following hypothesis:

Hypothesis 4b: Consumer innovativeness reinforces the negative effect of providing an emerging category label compared to a mature category label on consumers’ willingness to pay for an incrementally innovative product.

4.3 Method

In all three studies, an online auction was conducted using a platform that combined a sealed bid nth price auction with a short survey tool. In the real auction, respondents placed one sealed bid that others could not see and subsequently answered questions. This online research platform was developed by the authors. Two important elements of the auctions are that they are not conducted in a laboratory but take place in a field setting, and that the auctions are ‘real’, which means that consumers pay for the product if their bid is the winning one.

The winners of the auction pay an amount that is always equal to a bid lower than their own bid. This is similar to the random nth-price auction (see Shogren et al., 2001), in which all bidders who placed a bid higher than the randomly selected nth-bid win the auction but pay the nth-bid. This auction, however, differs in the sense that the nth-bid is not randomly assigned but determined by the researchers, making this
auction a ‘non-random nth-price auction’. To make the auction more comparable with real purchase situations for bidders, an (secret) auction price of around 20% below the normal retail price of the products was selected.

4.3.1 Consumer panel

Panel members were recruited from two existing panel agencies. The members of those agencies were asked to sign up at the auction website in return for a number of points that they collect at those panel agencies. Those points can be exchanged for products or coupons. Once these members signed up on the website they became part of the panel. In addition, panel members were recruited by master students of business who sourced their networks. In contrast to the panel agencies, participants in these auctions did not receive an incentive (e.g. points or money) for their participation. In total over 5000 panel members were recruited, of which approximately 1800 became ‘active’ (i.e. respondents who participated in at least one auction in the last 30 days). In these three studies, only ‘active’ panel members were invited for two reasons. First, demographics (such as gender, age, and education) information was already gathered for the active panel members. Second, the active panel members were familiar with this type of auction. The average age of the active panel members was 42 years, and on average 51% of them were female. 62% indicated that they were highly educated (i.e. Bachelor degree or higher). 24% of the panel consisted of both bachelor and master students.

4.3.2 Procedure

Respondents were invited by email. By clicking on the link in the invitation email respondents were directed to the auction website. Respondents were able to participate in the auction after clicking the link within 12 hours. Before showing the advertisement, respondents had to agree that: 1) they could place only one bid, 2) their bid was legally binding, 3) their bid included tax and shipping cost, and 4) winners had to pay within 48 hours after receiving the invoice. The respondents were furthermore informed that within one week after their payment the winner would receive the product. In addition, the closing date and time of the auction was mentioned. By clicking ‘continue’ they agreed to the rules and the advertisement was shown.
Respondents could place their bid in a field below the advertisement. After confirming their bid they were asked to fill out the survey questions. They could end their participation by clicking ‘complete participation’. Upon closing the auction, the respondents received an email with the outcome of the auction. The email to the winner mentioned his or her bid amount and the amount that he or she had to pay. The payment details were also provided. The respondents who did not win the auction received an email that mentioned the amount that they bid and the amount that the winner had to pay.

4.4 Study 1

In Study 1 the first hypothesis was tested, examining the moderating effect of consumer innovativeness on the positive effect of newness perception on willingness to pay. Demonstrating the moderating effect of consumer innovativeness is a necessary first step for the rest of the studies in which this consumer characteristic also plays a role.

4.4.1 Method

Respondents

The respondents in this study were part of the consumer panel attached to the auction platform. In study 1, a total of 600 active respondents were randomly invited from the consumer panel by email. In this auction a total of 203 respondents participated (response rate of 34%) by placing a bid and answering all of the survey questions. The average age of the participating respondents was 42 years, and 48% of them were female.

Auction product

In Study 1, an innovative herb garden in which people could grow their own herbs with little effort was auctioned off. The growth medium – including automatic and adjustable LED light and ‘Smart soil’ – had sensors to track the herbs and will take care that the herbs will get the right amount of light, water, and nutrients. As this product was new to the market at the time of the auction, most of the respondents were not
familiar with it. The advertisement in the auction showed an image of the product, accompanied by a description of the functionalities.

Independent variables

Respondents’ newness perceptions were measured using a 5-point scale in which they were asked to indicate whether they thought the product was new or not new, innovative or not innovative, and original or not original ($a = .88$; adapted from Goode et al., 2013). The respondents’ demographics were already known because all of them participated in at least one auction before participating in this auction.

Consumers innovativeness was measured using a 4 item 5-point ($1 = \text{Strongly disagree}, 5 = \text{Strongly agree}$) scale ($a = .78$; adapted from Roehrich, 2004) that provided statements about the extent to which consumers were attracted to innovative products (statements: “I am interested in innovative products”, “I like to buy new and innovative products”, “I am usually among of the first to try new products”, and “In general, I am more aware of new products than the people around me”).

4.4.2 Results

A regression analysis was conducted to measure the interaction effect of the standardized coefficients between consumers’ newness perceptions and innovativeness on willingness to pay. The results show a significant direct effect of both newness perception ($\beta = .30$, $t (204) = 4.15$, $p < .01$) and consumer innovativeness ($\beta = .17$, $t (204) = 2.43$, $p < .05$) on consumers’ willingness to pay. Consistent with the first hypothesis, the results revealed a positive interaction effect between consumers’ newness perceptions and innovativeness on willingness to pay ($\beta = .15$, $t (204) = 2.11$, $p < .05$; figure 4.1). A simple slope analysis (Aiken and West 1991) was also conducted to interpret the interaction effect (see figure 4.1). This demonstrates that the slopes significantly differed ($t = 2.63$, $p < .01$), thus supporting Hypothesis 1.
**4.4.3 Discussion**

In Study 1, a strong effect of both consumers’ newness perceptions and consumer innovativeness on consumers’ willingness to pay for the auctioned off product was found. This might be explained by the relatively high mean of consumers’ newness perceptions of the product ($m = 4.12$). Study 1 demonstrates that consumers who score high on innovativeness are willing to pay a ‘newness premium’. This is in line with previous research that argues that consumers’ might differ in how they value newness (e.g. Goldsmith, Freiden, and Eastman, 1995; Goldsmith, Hauteville, and Flynn, 1998; Midgley and Dowling, 1993). Study 2 builds on this result by first examining whether or not category labels influence consumers newness perception and willingness to pay. Second, whether or not the effect of providing category labels on willingness to pay is moderated by consumers’ innovativeness is discussed.

**4.5 Study 2**

The aim of this study was to examine the effect of category labels on consumers’ newness perceptions of an innovative product and their
willingness to pay for this product. In addition, whether or not consumer innovativeness moderates this latter relationship was examined. Study 1 was also replicated to show additional support for the first hypothesis.

4.5.1 Methods

The methods we used were similar to Study 1, except that an experimental setup was added. Instead of using one advertisement two were used. The respondents were randomly assigned to one of the two advertisements. Similar to Study 1, respondents placed one sealed bid that others could not see and subsequently answered questions.

Respondents and procedure

The respondents of the experiments in this study were part of the consumer panel that was attached to the auction platform. For this experiment, a total of 800 active respondents from the consumer panel were invited through email. A total of 378 respondents participated (response rate of 47%) by placing a bid and answering the survey questions. The average age of the participating respondents in this first experiment was 42 years and 48% were female. The procedure of this study was the same as that in Study 1.

Auction product

In this study a radically innovative product was auctioned off. By means of a pre-test among 57 respondents, the perceived innovativeness of three radically innovative products (the means were \( m = 3.43 \), \( m = 3.62 \), and \( m = 3.90 \)) was measured on a 5 point Likert scale. The product that scored the highest on innovativeness was used in this study. This product was a hand-held device that could identify the nutrients in food by means of a spectrometer. Upon scanning food with the spectrometer, the device sends the data through a smartphone to a database. Subsequently, results are shown on a smartphone app related to, for example, calories, fat, protein, and carbohydrates.

In the experimental auctions a 1 x 2 experimental design was used, in which two advertisements were tested. In the first advertisement a category label of a mature category was provided (i.e.
‘calorie counter’). Currently, there has been an increase in products that enter the market that are (wirelessly) connected to the internet (e.g. smart watches, and light bulbs that can be operated with a smartphone). The products in this emerging category are often called ‘smart products’. To guide consumers towards an emerging category the word ‘smart’ was used in the category labels. Thus, for the second advertisement the category label ‘smart food analyzer’ was provided. In a pre-test among 57 respondents, 79% of the respondents indicated the chosen emerging category label as more appropriate for the auctioned-off product compared to the chosen mature category label.

Independent variables

The independent variables ‘newness perception’ (α = .89) and ‘consumer innovativeness’ (α = .84) were measured in the same manner as in Study 1.

4.5.2 Results

Moderating role of consumer innovativeness

A regression analysis revealed a positive interaction effect between consumers’ newness perceptions and consumer innovativeness on willingness to pay (β = .103, t (290) = 2.21, p < .05). The simple slope analysis (see Figure 4.2) shows that the slopes significantly differed (t = 2.54, p < .05), providing additional support for Hypothesis 1.
**Figure 4.2** Moderating role of consumer innovativeness on the effect of newness perception on willingness to pay (standardized coefficients)

Effect of category labeling on newness perception

Table 4.1 shows the summary statistics of the experimental data. A one-way between-subjects ANOVA was conducted to test the effect of providing a mature category label versus an emerging category label on consumers’ newness perceptions. The prediction was that in the case of a radically new product, consumers would have a higher newness perception when providing a category label of an emerging category versus a mature category. Although only marginally, the results show that this is indeed the case \( F(1, 378) = 2.98, p < .10 \). Thus, these findings support the second hypothesis.
Table 4.1  Newness perception and willingness to pay per advertisement

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Newness perception</th>
<th>Willingness to pay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean (S.D.)</td>
</tr>
<tr>
<td>Label from mature category</td>
<td>185</td>
<td>4.10 (0.92)</td>
</tr>
<tr>
<td>Label from emerging category</td>
<td>193</td>
<td>4.26 (0.79)</td>
</tr>
<tr>
<td>All treatments</td>
<td>378</td>
<td>4.18 (0.86)</td>
</tr>
</tbody>
</table>

Effect of newness perception on willingness to pay and the moderating role of consumer innovativeness

An ANOVA showed that providing an emerging category label compared to a mature label has a positive effect on consumer willingness to pay ($F(1, 434) = 8.05, p < .01$), which supports Hypothesis 3a. In addition, it was expected that consumer innovativeness positively moderates this effect. To test whether consumers who score high on consumer innovativeness are indeed willing to pay a ‘newness premium’ when an emerging category label is provided, an ANOVA was conducted that included the interaction between consumer innovativeness and providing a mature versus emerging category label. As expected, a positive significant interaction effect ($F(1, 310) = 5.80, p < .01$) indicated that consumer innovativeness does have an effect on consumers’ willingness to pay a ‘newness premium’ when an emerging category label is provided. A simple slope analysis shows that the slopes significantly differ ($t = 2.99, p < .01$; see Figure 4.3), thus supporting Hypothesis 4a.
4.5.3 Discussion

These analyses show that providing a mature category label versus an emerging category label had an effect on consumers’ newness perception and willingness to pay. The effect on consumers’ willingness to pay was more significant than the effect on consumers’ newness perceptions. A possible explanation for this could be the novelty of the product. Product characteristics – such as visual appearance and functionalities – may have strongly influenced consumers’ newness perceptions, diminishing the effect of the category label on newness perceptions. Nonetheless, the category label did have an effect, which provided support for the fact that category labels can be newness cues in the case of radically innovative products.

Based on the results in this study it seems that consumers appreciate when the level of innovativeness of the provided category label matches the level of innovativeness of the product, and that consumers who are attracted to innovation appreciate this even more. To find further evidence that supports the assumption that this perceived fit is important, and an incrementally innovative product was used in the third study.
4.6 Study 3

In Study 2 a positive effect of the emerging label on willingness to pay for a radical innovative product was found. In Study 3, it was expected that providing an emerging category label when offering an, incrementally innovative products would have a negative effect on willingness to pay, due to the lack of fit and the fact that this effect is reinforced by the degree to which consumers are attracted by innovation. In addition, the robustness of the effects from the first study (i.e. the moderating role of consumer innovativeness on the effect of newness on willingness to pay) was further examined.

4.6.1 Method

The method that was used was similar to the experimental auction setup used in Study 2. The only difference was that a non-innovative product was used instead of an innovative product.

Respondents and procedure

For this experiment, a total of 800 active respondents were invited through email. A total of 303 respondents participated (response rate of 38%) by placing a bid and answering the survey questions. The average age of the participating respondents in this experiment was 43 years, and 47% were female. The procedure of this study was the same as that in Studies 1 and 2.

Auction product

This study auctioned off a non-innovative product. Through a pre-test with 57 respondents, the perceived innovativeness of three incrementally innovative products were measured on a 5 point Likert scale (the means were $m = 1.69$, $m = 1.96$, and $m = 2.22$). The product that scored the lowest on innovativeness was used in this study. This product was a set of three plastic cutting boards. Each cutting board had a different symbol – that could be used as an index – allowing the user to quickly see if the cutting board is used for cutting meat, fish, or vegetables.
In the experimental auctions a 1 x 2 experimental design was used, in which two advertisements were tested. In the first advertisement, a category label of a mature category was provided (i.e. ‘plastic cutting boards’). For the emerging category label we use the word ‘smart’ – which is in line with the second study – to guide consumers towards an emerging category (i.e. the category of smart products). The word smart was combined with the index system of the cutting boards, which resulted in the category label ‘smart index cutting boards’. In a pre-test among 57 respondents, 94% of the respondents indicated that the chosen mature category label was more appropriate for the auctioned-off product than the chosen emerging category label.

Independent variables

The independent variables newness perception ($a = .85$) and consumer innovativeness ($a = .84$) were measured in the same manner as in Studies 1 and 2.

4.6.2 Results

Moderating role of consumer innovativeness

A regression analysis revealed a positive interaction effect between consumers’ newness perceptions and consumer innovativeness on willingness to pay ($\beta = .204$, $t (210) = 3.258$, $p < .01$). The simple slope analysis (see 4.4) show that the slopes significantly differed ($t = 3.70$, $p < .01$), supporting Hypothesis 1.
Figure 4.4 Moderating role of consumer innovativeness on the effect of newness perception on willingness to pay (standardized coefficients)

Effect of newness perception on willingness to pay and the moderating role of consumer innovativeness

A one-way between-subjects ANOVA showed that an emerging category label generated a lower willingness to pay than a mature category label, but this effect was not significant ($F(1, 303) = 0.10, p = .74$). It was expected that consumers would want to pay less when providing a category label of an emerging category versus a mature category. As the ANOVA did not reveal a significant result it does not support Hypothesis 3b. It was also expected that consumer innovativeness would negatively moderate this effect. A significant moderation effect was not found in this case either. Thus, these results do not support Hypothesis 4b.

4.6.3 Discussion

The results of this third study suggest that in the case of a non-innovative product, providing category labels does not have a significant effect on the value perception of consumers. This might be due to the fact that consumers in general quickly understand non-innovative
products through the visual appearance of these products. If a product is easy to understand, providing additional information might have no effect or a weaker effect than products that are not easy to understand through their visual appearance.

4.7 General discussion

This paper examines the effect of providing category labels for consumers’ newness perceptions and willingness to pay, and the moderating role of consumer innovativeness. It builds on studies that have examined the effect of category cues on consumers’ understanding and evaluation of innovative products. This study highlights the importance of category labels in relation to both the degree to which the product is innovative and the degree to which consumers are attracted to innovation. Compared to previous research, this paper shows a more refined view by demonstrating that providing an emerging category label, compared to a mature category label, in combination with an innovative product positively affects newness perception and product evaluation of innovative products. In addition, these results show that the degree to which consumers are attracted to innovation strengthens the latter effect. Moreover, consumer innovativeness strongly moderates the positive effect of newness perception on willingness to pay.

This study contributes to literature on the effect of categorization and category cues on consumer behavior in several ways. First, it examines the effect of providing category labels from categories that differ in their degree of matureness. Previous research indicates that categories can differ in how mature they are (e.g. Rosa et al., 1999), especially if categories are emerging and multiple category labels are used (Grodal et al., 2014), and no dominant category label has emerged. However, there are no studies that have explicitly examined whether or not providing category labels of emerging categories influence consumers’ newness perception and product evaluation. This paper addresses this gap by theorizing and demonstrating that category labels that differ in their degree of matureness can influence consumer behavior. Second, the moderating effects of consumer innovativeness in combination with the effects of categorization were explored. Previous research indicates that consumers can differ in the degree to which they are attracted to innovative products (e.g. Goldsmith et al., 1995;
Goldsmith et al., 1998; Midgley and Dowling, 1993). However, studies on the moderating role of consumer innovativeness are scarce. This study demonstrates that consumer innovativeness moderates the effect of providing category labels that differ in their degree of matureness on consumers’ willingness to pay.

Contrary to expectations, an effect of category labeling on newness perception and product evaluation in the case of incrementally innovative products was not found. These types of products often have enough cues to reveal the category membership of a product. Thus, providing an additional cue might not have a strong effect on consumers’ perceptions of the product. Indeed, prior literature has demonstrated that consumers’ expertise, involvement, and familiarity with a product or product category can affect how they use and are influenced by information (e.g., Chocarro, Elorz, and Miguel, 2012; Kuusela, Spence, and Kanto, 1998). In the case of a radically innovative product, the available category cues (e.g. category labels) – and additional information gathering – might play a more important role in the process of making sense of the products, which could explain why significant effects were only found in the case of a radically innovative product.

4.7.1 Limitations and future research

This study has several limitations. It only tested one emerging and one mature category label per product. Although these labels were pre-tested, the researchers could have chosen many more, particularly for the innovative product more labels were available, as is often the case with emerging categories (Grodal et al., 2014). In general, category labels refer to a specific category, but the word(s) used for the label might also have a meaning that can influence consumers’ perception. For example, the word ‘smart’ was used to refer to the category of products that are connected to the internet, but the word smart also means clever. As this can be perceived as something positive, this might have evoked positive emotions and affected consumers’ perceptions of the product. Future research could focus on testing a larger number of available category labels.

Future research could also investigate the effect of different types of emerging category labels on newness perception and evaluation. Grodal et al. (2014) discussed that labels can be created through
compounding, derivation, or completely anew. The term compounding means that a category label is created by combining two or more words (e.g. smartphone). Derivation is the transformation of an existing word (e.g. computer is derived from to compute). Completely new labels have no links to an existing word or category. It would be interesting to see the effect on consumers’ newness perception and willingness to pay of these different types of category labels, and how this differs based on the degree of consumer innovativeness. For example, consumers who score high on consumer innovativeness might be attracted to completely new labels, and consumers who are not innovative may be attracted to labels that are created through compounding.

This study only addressed one classification level. Classification systems often consist of multiple hierarchical levels, including subordinate and superordinate categories (e.g. a blender is a subordinate category of the superordinate category kitchen appliances). It would be interesting to further explore whether these different levels have a different outcome on consumers’ newness perception and evaluation. Superordinate categories are often more familiar to consumers because they have been around longer than subordinate categories. Because consumers are often better able to judge the newness of a product if they can clearly categorize it (Goode et al., 2013), providing superordinate category labels when advertising an innovative product might have a positive effect.

Previous research argues that in an industry, different types of actors interact with each other and may respond differently to the same product (Wijnberg, 2011). Gemser, Leenders, and Wijnberg (2008) for example found that consumers, experts (such as critics), and peers (such as competing producers) have different product evaluations, and that these evaluations have different effects on market success. Future research could investigate whether or not providing category labels has a different effect on these different types of actors. This could also be combined with the different types of categories mentioned previously (i.e. labels created through compounding, derivation, or completely anew). It could be that experts might be mostly attracted to completely new category labels, while consumers appreciate labels that reveal more familiarity. This is relevant because experts often act as influencers. Thus, experts could help to successfully introduce completely new category labels on the market.
4.7.2 Managerial implications

This paper highlights the importance of category labels, and particularly the importance of the effect of categories that differ in their degree of maturity. As category labels can have an effect on both newness perception and product evaluation of innovative products, sellers should choose the category labels that they want to provide carefully. For example, sellers should be aware of the degree of maturity of the category label. Moreover, they should be aware of how the consumer side of the market understands the category label that the seller is planning to provide.

Sellers of innovative products particularly need to consider that multiple labels are in use when a category is emerging (Grodal et al. 2014). This study demonstrates that labels have a different effect on product evaluation. Choosing a ‘wrong’ label might have a negative effect on the market performance of the product. Thus, prior to using a category label, sellers should test how the category label is perceived by consumers. Moreover, sellers should test how the same category label can have different effects, depending on how innovative the consumer is. This knowledge can be used to choose the ‘right’ label, which fits both the degree of innovativeness of the product, as well as of the consumer.

4.7.3 Conclusion

This study shows that category labels in particular have an effect in the case of innovative products. Those products are often harder to quickly understand because it is more difficult to categorize them. Both consumers’ perceived newness and product evaluation as positively affected by an emerging category versus a mature category label. In addition, this effect is reinforced by consumer innovativeness. This study highlights the importance of sellers choosing the ‘right’ category when advertising an innovative product. This study is a first step towards investigating when and how category labels from emerging product categories should be used to reduce the risk of failure of innovative products on the market.