Electrifying car brands: the role of brand personality, experiential brand associations and emotional design

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Abstract

Designing more sustainable solutions for transport and mobility, such as the electric car, is one of the key challenges for industrial designers. In getting new options for cars accepted in the marketplace, it is important to investigate to what extent these options fit with the personality of car brands and the experiential characteristics that consumers associate with these brands. Moreover, emotional propositions are important in getting new products adopted. This paper investigates the effect of introducing different emotional electric car designs as extensions of existing car brands that differ with respect to brand personalities and brand experiences. A series of pretests is described leading up to a main experiment in which the interaction between existing car brand personalities and experiences and different types of emotional electric car design is studied. Drawing upon schema and categorization theory, the effect of the fit between existing car brand images in terms of personality and experiential associations on the one hand, and a new electric car model extension on the other, on evaluative reactions on the extension and parent brand feedback effects are investigated.

Keywords: emotional product design, brand personality, brand experience, brand extension

Introduction and objectives

Innovation, the successful commercialization of new ideas, lies at the heart of success in business today (Geis and Wildner 2005). Product innovation is often triggered by growing concerns about the changing resources needed to produce and use the product (Ehrenfeld 2008). Smith (2008) claims that the need to change over to a sustainable transport system is a matter of urgency: 'Rising transport demand is likely to be the biggest hurdle to reducing our greenhouse gas emission.' Furthermore, the biggest part of the energy used in transport comes from burning petrol products. Cars will not be easily given up just because they are dangerous to health and life, environmentally destructive, based on unsustainable energy consumption, and damaging to public life and civic space. Too many people find them too comfortable, enjoyable, exciting, and even enthralling. They are deeply embedded in ways of life, networks of friendship and sociality, and moral commitments to family and care for others (Sheller and Urry 2000).

One of the options to counter this trend of deploying the natural sources and polluting the air is the partial or complete shift to electric vehicles. Brands less known to the general public, such as Tesla (2003), Reva (1994) and DIVA (2009), developed fully electric car alternatives that are already for sale. Environmentally regulations in Europe and the United States also incited a change in the attitude of well-established car manufacturers. The vast majority of them have adopted a proactive approach in order to improve environmental effects in car manufacturing and car use. One of the results is that large car brands are preparing to launch an electric car in the near future. Firms in the highly competitive car market place are under constant pressure to develop new products and services that are both timely and responsive to consumer needs. Within this context, marketing and product design are boundary spanning functions between business organizations and consumers. 'A consumer centric product concept in combination with a psychological carrier system in the form of a mighty brand, these are promising ingredients for the magic formula of marketing success, particularly when paired with the extra sparkle of creativity' (Schroiff 2007, p.105).

To launch a branded electric car, one needs to really understand what the consumer product proposition is while understanding at the same time that the brand is the psychological carrier system for this product proposition (e.g. Aaker 2004; Arnold et al. 2007; Esch 2004; Keller

2008). One needs to understand how the proposition and the brand interact and whether they really fit one another (Van Hamersveld and de Bont 2007)

The purpose of the present study is to investigate how adding an electric car model (a new product proposition) to the product line of existing car brands, with existing brand personalities and experiences, affects the perception and responses to these brands and their personalities and experiences. We also study how the brand characteristics affect the acceptability of an electric model extension. Moreover, the study investigates the effect of different types of emotional car designs for electric vehicles on these brand perceptions. The present paper describes the first stages of this study in which car brands for the main study are selected and various design formats are developed, and presents the set-up of the main study in which the interaction between existing car brand personalities and experiences and emotionally designed electric variants will be studied.

Literature study and conceptual framework

Line extension fit, extension evaluation and parent brand feedback effects

Adding an electric car model to a line of models of an existing car brand is an example of a line extension. The two factors that have emerged as most important in determining extension evaluation are positive parent brand associations, and the perceived fit or congruency between an extension and the parent brand (Aaker and Keller 1990; Patro and Jaiswal 2003). Parent brand associations are representations of one's knowledge about the brand held in one's memory, taking different forms, including attributes, benefits, and values (Keller 2003). The perceived quality of the brand is one of the important associations that have been shown to positively affect extension evaluation (Aaker and Keller 1990; Bottomley and Holden 2001). In addition, brand extension evaluation is positively influenced when consumers perceive the extension to fit with the parent brand (Bottomley and Holden 2001; Czellar 2003). Consumers are more likely to assume the extension to hold the characteristics of the parent product when the similarity between the extension and the parent product is high, which, in turn, generates better extension evaluations (Lai 2006).

When product category involvement is low, consumers will often evaluate the extension based on some superficial analysis of readily available cues and to simply transfer their feelings about the parent brand to the advertised extension (Nijssen and Bucklin 1998). The positive effect of parent brand strength on extension success has indeed been shown to be highest at relatively lower levels of involvement (Nijssen and Bucklin 1998; Völckner and Sattler 2007). However, when consumers are more highly involved with the product category, which will probably be the case for cars for most people, they will evaluate the new product based on relevant information in a piecemeal fashion (Czellar 2003) and they will more thoroughly consider the fit of the parent brand with the extension. Indeed, high involvement has been shown to reinforce the effect of high fit (Nijssen and Bucklin 1998; Völckner and Sattler 2007). Consequently, in the case of extending a car brand with a new model or a new technology such as an electric vehicle, the fit between the parent brand and the extension is very important for the evaluation of the extension.

According to Balachander and Ghose (2003), the fit between parent brands and extensions does not only positively influence extension evaluation, but extensions also affect the image and evaluation of the parent brand. Literature offers several examples in which existing products obtain reciprocal benefit from both positively evaluated line and brand extensions (e.g., Dens and De Pelsmacker 2008, Supphellen, Eismann and Hem 2004; Swaminathan, Fox and Reddy 2001). Martínez and de Chernatony (2004) and Martínez, Montaner and Pina (2008) observe that consumers' attitude toward an extension has a positive effect on brand image after the extension. Perceived fit between the parent brand and the extension is an important antecedent of parent brand image and evaluation after an extension (Martínez and de Chernatony 2004; Martínez, Polo and de Chernatony 2008). Many studies confirm that good fit is important for positive consumer evaluations (i.e. enhancement) of the core brand (Aaker and Keller 1990; Diamantopoulos, Smith and Grime 2005). Sheinin (1998), for example, finds that a strong fit generates strong brand positioning, measured through consumer beliefs. Customers may perceive that the company is attempting to take undue advantage of its brand name when it tries to introduce dissimilar extensions. Several studies (e.g., Keller and Sood 2003; Martínez and Pina 2003) find negative feedback (backfire) effects when extensions are perceived as inconsistent with the parent brand.

In sum, the perceived fit between a parent brand and an extension of this brand into a new (sub)category is important for both the evaluation of the extension and the subsequent

evaluation of the parent brand, especially in case of a high involvement product such as cars. Brand extension research has generally relied on categorization theory (e.g., Fiske and Pavelchak 1986; Lau and Phau 2007) and schema theory (e.g., Fiske and Pavelchak 1986; Graesser and Nakamura 1982) to account for these results. A (brand) schema is a cognitive structure that represents organized knowledge about a given concept or type of stimulus (i.e. the brand), which can guide evaluations (Boush et al. 1987). According to categorization theory, people faced with an evaluative task will first attempt to classify the object within a certain category on the basis of salient cues by computation of individual feature matches and mismatches (Fiske and Pavelchak 1986; Park, Kim and Kim 2002). If the categorization is successful, affect and beliefs associated with the category in memory will be transferred to the object. In line with these theories, the evaluation of extensions contingent upon its similarity to the original brand category has been conceptualized as a category-based processing phenomenon (e.g., Meyers-Levy, Louie and Curren 1994; Milberg, Park and McCarthy 1997). Thus, the transfer of positive affect and associations of a brand will be enhanced when the original brand and the extension in some way fit together (Aaker and Keller 1990). As such, consumers' judgments of the extension's fit with the parent brand would dictate their evaluation of the extension (Bhat and Reddy 2001). In addition, poor fit may not only detract from the transfer of positive associations, but may actually stimulate undesirable beliefs and associations (Aaker and Keller 1990). When the fit is low, consumer may question the ability of the firm to make the extension. When consumers perceive a strong incongruity between an extension and the parent brand, they will not be able to resolve this incongruity, which will result in negative affect (Mandler 1982; Meyers-Levy, Louie and Curren 1994).

Categorization theory is also frequently applied to understanding the dynamics of post-extension parent brand evaluations or feedback effects (Milberg and Sinn 2008; Roedder John, Loken and Joiner 1998). Categorization theory predicts that beliefs about a category (i.e. the parent brand) change in response to the degree that a new instance (i.e. an extension) is inconsistent with a person's existing brand schema (Milberg and Sinn 2008). Customers may perceive that the company is attempting to take undue advantage of its brand name when it tries to introduce dissimilar extensions. A mismatch between the core brand and the brand extension leads to consumer concerns, questions, or dissonance about the quality level or the image of the core brand (Chen and Liu 2004). Several studies (e.g., Keller and Sood 2003; Martínez, Polo and de Chernatony 2008) find negative feedback (dilution) effects on parent

brand attitude when extensions are perceived as inconsistent with the parent brand product attributes or image.

Perceived fit is characterized by the number of shared associations between the family brand and the extension product, and has been conceptualized in several ways, such as product feature similarity (product category fit), brand concept consistency (brand image fit) and goal congruency (usage fit) (Czellar 2003; Grime, Diamantopoulos and Smith 2002; Lau and Phau 2007; Park, Milberg and Lawson 1991). Product category similarity perceptions depend on identifying the relationships between the brand's existing products and the extensions, whereas perceived brand concept consistency relies on the extension's ability to accommodate the brand concept (Park, Milberg and Lawson 1991). Researchers have commonly defined product categories as either functional (e.g., lawnmowers) or symbolic (e.g., cars) (Midgley 1983). Similar dimensions can be identified for brand schemas (de Ruyter and Wetzels 2000; Park and Young 1986). A brand with a functional schema/concept is defined as one designed to solve externally generated consumption needs, and possesses mainly product-related or concrete, functional associations (de Ruyter and Wetzels 2000; Park, Jaworski and McInnis 1986). Functional brands are bought primarily to satisfy utilitarian needs since they emphasize physical product features, performance, and benefits (Bhat and Reddy 2001). Brands with a symbolic positioning or schema are designed to fulfil internally generated needs for selfenhancement, role position, group membership, or ego-identification (Park, Jaworski and McInnis 1986). Symbolic brands usually entail non-product-related or abstract, image-based associations, which are intimately concerned with consumers' desire to express themselves (Bhat and Reddy 2001; de Ruyter and Wetzels 2000). The favourable fit effect appears in studies that consider fit from both the product category (Boush and Loken 1991; Boush et al. 1987), the brand image (Bhat and Reddy 2001; Park, Milberg and Lawson 1991), and the goal-congruency (Martin, Stewart and Matta 2005) perspective, for both functional and symbolic brands (Martínez and Pina 2009; Park, Milberg and Lawson 1991). Bhat and Reddy (2001) found that the fit between the images of the parent brand and the extension was generally more influential in determining extension evaluation than similarity between the product categories.

Based on categorization and schema theory, it can be concluded that the perceived fit between a parent brand and its extensions is of great importance for the evaluation of both the extension itself and the parent brand, especially for high involvement products. Moreover, in case of product categories such as cars, the perception of fit will be more based on symbolic associations than on concrete utilitarian attributes. Two important dimensions of symbolic schema are brand personality and brand experience.

Brand personality and brand experience

Brand equity is the current and future potential value that has been created by what the exercise of branding has managed to achieve (Biel 1993). Brand identity and brand image are important cornerstones of brand equity. Brand personality forms a major symbolic component of brand identity, which is defined as a brand's meaning, put forward by the firm (Kapferer 2008). Brand image is the consumers' perception and interpretation of this brand identity, including brand personality (De Pelsmacker, Geuens and Van den Bergh 2007). 'Brand personality is the set of human personality traits that are both applicable to and relevant for brands' (Azoulay and Kapferer 2003, p. 151). The work of Aaker (1997) inspired the majority of the research on brand personality to date. Her scale which incorporates 5 broad dimensions has been used as a brand personality measure in many studies (Aaker 1997, 1999, Aaker et al. 2001; Kim, Han and Park 2001). One of the major criticisms on the Aaker scale is that it is a mixture of personality and other brand image dimensions. In recent research, Geuens, Weijters and De Wulf (2009) have developed a scale that consists of only personality dimensions and is therefore a better representation of the brand personality concept. The scale consists of five factors that show an affinity with the Big Five human personality dimensions: Responsibility, Activity, Aggressiveness, Simplicity and Emotionality. Extensive quantitative research proved that the scale is reliable for between brand between category comparisons, for between brand within category comparisons and for between respondent comparisons. Responsibility is measured by means of three items: down to earth, stable and responsible. Activity consists of three items: active, dynamic and innovative. Aggressiveness contains two items: aggressive and bold. Simplicity is measured by two items: ordinary and simple. Emotionality consists of two items: romantic and sentimental. A brand's personality may be inferred from people's association with the brand, from product attributes, category associations, the brand name, or brand communications.

Also brand experience is an important cornerstone of symbolic brand identity and brand image. Brakus, Schmitt and Zhang (2008) showed that brand experience affects consumer satisfaction and loyalty. Positive brand experience not only affects past satisfaction judgments

but also future directed use intentions (Mittal and Kamakura 2001; Oliver 1997, Reicheld 1996). Brakus, Schmitt and Zarantonello (2009) conceptualize brand experience as subjective consumer responses that are evoked by specific brand-related experiential attributes. They demonstrate that brand experience can be broken down into four dimensions: sensory, affective, intellectual and behavioural, which are differentially evoked by various brands. Three sensory items (this brand makes a strong impression on my visual sense or other sense; I find this brand interesting in a sensory way; this brand does not appeal to my senses) constitute the first dimension. Three affective items form the second dimension: this brand induces feelings and sentiments; this brand is an emotional brand; I have strong emotions for this brand. Three items define the behavioural component: I engage in physical actions and behaviours when I use this brand; this brand results in bodily experiences; this brand is not action oriented. The three remaining items form the intellectual dimension: I engage a lot in thinking when I encounter this brand; this brand does not make me think; this brand stimulates my curiosity and problem solving.

This paper is a first step in investigating the impact of existing brand experience and brand personality on the evaluation and adoption intention of an electric car extension introduced by these brands and on the evaluation of the parent brands introducing this electric car extension, using the symbolic brand image dimensions proposed by Geuens, Weijters and De Wulf (2009) and Brakus, Schmitt and Zarantonello (2009).

The design of an electric car

Design is an unequivocal source of differentiation and has become a key element for branding; not only because aesthetically pleasing products and services better compete for consumers' short attention span (Berkowitz and Bartholomeu 1987, Page and Herr 2002), but also because design may serve as a cohesive factor for all elements that configure brand personality and experience. Earlier research revealed that the product proposition 'sustainability' and 'ecological responsibility' is not enough to convince a large target group. Lane and Potter (2007) conclude that, although consumers mention sustainability issues as a major consumer concern, the attitude-behaviour gap reveals that consumer concern for environmental impact does not often translate into behavioural change. Car markets and driving decisions are not simply about rational economic choices, but are as much about aesthetic, emotional, and sensory responses.

Norman (2004) claims that psychological aspects of ergonomics have become increasingly important in the pursuit of products that are not only safe and efficient, but also pleasurable to use and arousing. Notwithstanding the overwhelming evidence of the role of affective reactions in consumer decision making, conceptual models and empirical research on the adoption (intention) of innovations or (new) behaviour have largely ignored the role of emotions (Perlusz 2011; Bagozzi, Gopinath and Nyer 1999; Richins 1997; Kim, Chan and Chan 2007; Penn 2007). A large-scale quantitative study into the drivers of electric car adoption intention in Belgium, applying an extended version of the Theory of Planned Behaviour, revealed that emotional feelings towards using an electric vehicle are more important determinants of adoption intention than attitudes, the subjective norm or perceived behavioural control factors (Moons and De Pelsmacker 2011).

Norman (2004) argues that the emotional reaction to design and/or to an existing or new product are related to three emotional processing levels: visceral, behavioral and reflective. The first level, i.e. visceral affect, is perception-based and relates to visceral aspects that are related to product appearance. 'To experience a new car is to allow a series of sensual triggers to be pulled. One takes in the body-form; one looks at the exterior details; one touches parts of the trim...' As Miller suggests, 'it is this highly visceral relationship between bodies of people and bodies of cars that forces us to acknowledge the humanity of the car in the first place' (Miller 2001, p.24). The second level, i.e. behavioral emotion, is expectation-based and corresponds with behavioral aspects that have to do with the pleasure and effectiveness of use. 'The cabin of a car and the seats in particular, may not seem to be the sexiest element of the getting-to-know-you experience. Actually that's precisely what they are. As soon as you slide into the front seat, the car is yours; and the car's got you...just sitting in them is a real pleasure. What I refer to as 'automotive emotions' – the 'thrill' of driving, the 'joy' of the road, the 'passion' of the collector, the 'feeling' of the car interior – are not simply lexicons of the advertising imaginary' (Sheller and Urry 2000). The third level i.e. reflective emotion is intellectually based and corresponds with reflective dimensions that are concerned with selfimage, personal satisfaction and memories. As Maxwell argues, 'meanings of car use are fundamentally embedded in social relations of everyday life, and... an understanding of the interrelationships between the plural ethical discourses associated with car use provides an alternative means of understanding the gap between attitudes and behaviour' (Maxwell 2001, p. 217).

Emotional processing and experience refers to an individual's stream of perceptions, interpretations of those perceptions, and resulting emotions during encounter with a system. The core of user experience will be the actual experience of usage. This does not cover all relevant user experience concerns. People can have indirect experience before their first encounter, through expectations formed from existing experience of related technologies (the current car), brand, advertisements, presentations, demonstrations, other's opinions. For the moment, actual experience of usage of the branded electric car is impossible, because of its non existence. This study can thus not reach any further than exploring the anticipated user emotions and experiences that might be provoked by the manipulation of product aspects of the branded electric car. One of the aims of the present study is to test three types of emotional design of an electric car model for existing brands, representing Norman's (2004) three emotional experience levels, and to investigate to what extent these anticipated emotions affect parent brand personality, brand experience, brand attitude and the adoption intention of an electric car extension, and whether this depends on existing car brand personalities and experiences.

Anticipated emotional experiences are relatively abstract car attributes. This study explores the actionability of these abstract product attributes with the focus on the development of a branded electric car. Traditional models such as the Quality function deployment model (Clausing 1994) and the means – end model of quality (Zeithaml 1988) argue that consumer attributes can be grouped into a hierarchy of higher order abstract attributes and lower level concrete attributes. Abstract attributes, such as the evoked emotions and experiences, are not easily related to concrete attributes. One of the challenges is to translate abstract attributes into concrete and specific attributes by means of design elements. One of the aims of this study is thus also to design branded electric car concepts that evoke different types of emotions. The result of this conceptual product design (concept boards) will be tested in experimental research to investigate how different product features can evoke different emotional processing reactions, how these different types of products (visceral, behavioural, reflective) interact with existing brand personalities and experience, and how they are related to the adoption intention of the electric car.

Method and findings

General approach

In order to investigate the relationship between emotional electric car design and adding these newly designed car models as a line extension to existing car brands with existing personalities and experiential associations, an experimental study is set up. The present paper describes a series of six pretests to prepare the main experiment, in order to select appropriate car brands and preparing concepts of electric car types. Finally, the design of the main study is described in the subsequent 'further research' section.

First we conducted a qualitative research to come up with a workable list of car brands. The second step aimed to describe these car brands in terms of brand personalities and brand experiences. The result of this exercise was a shortlist of three car brands substantially varying in brand personality and brand experience. The personalities and experiential associations of these brands were then elaborated in a qualitative third step. The fourth step was a co-creation exercise. This step led us to generate product features that elicit anticipated emotions at the three product processing levels. These generated features were analyzed and a selection was made for a design briefing. On the basis of this briefing, in the fifth step twelve concept cards were developed. In the sixth step, these concept cards are tested on their relevance for studying the aimed experience manipulations.

Step 1: qualitative research

The aim of the first qualitative study was to generate a list of relevant car brands to take along in our study.

Method and procedure

From the internet, a literature study and a brainstorm with 3 colleagues, all possible car brands were listed and 39 brands that at least produce family cars were selected. Twelve respondents were selected to participate in an individual interview. The sample consisted of different age categories, six male and six female respondents, and all of them were driving a family car. This last criterion was taken into account because people driving more special cars (roadsters,

small cars, SUV's) might have a different opinion on the car types we want to consider in further research. An earlier study (Moons and De Pelsmacker 2011) revealed a link between owning a family car and the intention to adopt an electric car. So we will focus on this car segment.

Results

The respondents were asked to categorize the brands on the basis of their personality, using the five personality items as proposed by Geuens et al. (2009): responsible, active, aggressive, simple, and emotional. Twelve brands that were associated most often with only one personality trait were selected for further research: Alfa, Audi, BMW, Ford, Mercedes, Nissan, Opel, Renault, Saab, Toyota, Volkswagen, and Volvo.

Step 2: reduction of the brand list

The purpose of the second step was to narrow down the list of 12 brands to a list of three car brands to be used in the main experiment that were as different as possible with respect to their brand personalities and brand experiences.

Method and procedure

An online questionnaire was sent to a sample of 100 family car drivers. Thirty eight respondents, as well men (45%) as women (55%), filled out the questionnaire. The sample consists of respondents of different ages (11% 18-25 years, 18% 25-35 years, 26% 35-45%; 42% 45-65 years; 3% >65 years).

In order not to complicate this stage of the test, the search for the most suitable brands to take along in further research, we modified the scales proposed by Geuens, Weijters and De Wulf (2009) and Brakus, Schmitt and Zarantonello (2009). Instead of using 7 point Likert scales to measure brand personality and experience, only a categorization of the most suitable and the least suitable dimension of brand personality and brand experience was asked for. For each of the 12 car brands that remained from the first step of the research the respondents were asked which of the five personality traits suited the most and which one the least to the brand:

responsible, active, aggressive, simple, emotional. The same was done for the four brand experience dimensions: sensitive, affective, behavioural, reflective.

Results

The three most differentiated brands, taking into account brand personalities and brand experiences, were SAAB, BMW and TOYOTA. Saab is most frequently and more often than other brands in the list associated with an emotional brand personality (35%) and with sensitive (36%) and affective (32%) brand experience dimensions. At the same time, Saab is least associated with the brand personality dimension 'simple' (53%) and with reflective experiences (47%). BMW is most strongly associated with the brand personality dimension 'aggressive' (49%) and as well with affective (41%) as behavioural (41%) brand experience dimensions. BMW is least associated with the brand personality characteristics 'simple' (73%) and with reflective experiences (47%). Toyota is strongly associated with simple (58%). It is least associated with aggressive (46%). It has not a very pronounced brand experience profile. Consequently, the development of the design stimuli will be based on the SAAB, BMW and TOYOTA brands.

Step 3: Qualitative check of the results of step 2 and exploring the effect of the attribute 'electric' on the brand personality and the brand experience

Step 3 is a qualitative diagnostic check of the results of the previous quantitative study. Additionally we explored to what extent the selected brands were different with respect to their suitability for an electric car variant, and to what extent we could expect the brand personality and the brand experience to change when we add the product attribute 'electric'.

Method and procedure

For each brand, three group discussions were organized (a total of 9 discussions), each consisting of 5 participants, all of them master students in product development. Creative and projective techniques were set up to make it easier to explore the more abstract concepts of brand personality and brand experience. Each group started with exploring the brand personality and the evoked brand experience of one of the selected brands (either SAAB, BMW or TOYOTA). First they spontaneously discussed what the brand meant to them. Then

they were allowed to revisit brand communications on the internet and in magazines. After this introduction phase, projective techniques were used to make it easier to communicate on the more abstract product attributes. The groups discussed about the kind of person the car brand would be, with which animal they associated the car brand, and about the planet the car brand should be on. To conclude, they were asked to make a collage (moodboard) about the brand. The same exercise was done for the 'electric' variant of the brand.

Results

Saab is described as a classy and well designed brand (well dressed man) that is technologically advanced (intelligent, sensitive, up to date). It is an emotional brand (a proud deer with emotional big eyes; it isn't just a car that brings you from point A to point B, but it delivers a good feeling; it de-stresses you; it takes you through great nature...). Saab is suitable for a family (the animal cares about its family). 'Nature' and 'green' are associated with the brand. The attribute 'electric' gives the brand a more female touch and makes it even more sensitive (it will be silent in the car, listening to the music will even be better, it will even look more beautiful, more trendy...). It also makes the brand more emotional (caring, loving). It fits with SAAB as SAAB already stands for looking for a more environmentally caring position. BMW is a more active, sporty, even aggressive brand (a puma, a panter, a tiger, a carnivore). It is described as strong, sharp and masculine. The BMW planet is rather technical (collage with watches, planes), luxury (people playing polo, golf) and active (skiing, sailing). In the moodboard we also see a lot of show-off elements. When adding the element 'electric' the brand becomes more feminine, softer, more casual, but also more responsible and more reflective. Respondents believe in the effort that the BMW technology promises for saving the environment, but they don't see the electric car fit with the brand in the near future. Toyota is described as a simple brand that does not have a typical character. It is a bit sporty and it is a person's rational choice (a simple, common person, plays football, a dog, you buy a Toyota because it is ok, and that's the one you can afford). Toyota already tries to be ecologically friendly. The attribute 'electric' would change the image slightly in a more technologically advanced brand. It will make the brand more advanced and trendier. It keeps its rational and responsible brand associations.

The results of the qualitative research largely confirm the brand personalities we found in the previous step. Moreover, adding the attribute 'electric' appears to have a differential effect on

the three brands. 'Electric' seems to match best with Saab and Toyota and less with BMW, and affects brand personalities differently. Steps 2 and 3 lead to the conclusion that the three brands are sufficiently different in terms of brand personality, brand experience and fit with the attribute 'electric' to warrant their inclusion in the main experiment.

Step 4: looking for product features that are linked to the three emotional product experience levels

The next question was how to evoke the three different emotional brand experiences as suggested by Norman (2004) by manipulating the product itself, i.e. the design of the car. In this fourth step we thus try to establish which product features can evoke an anticipated emotional experience at the three product processing levels: visceral, behavioural and reflective.

Method and procedure

Brainstorming sessions were organized to search for product attributes for an electric car variant at the different emotional processing levels. Groups between 6 and 10 participants (all master students) were formed. The same persons who did the qualitative brand exercise in step 3 were now brainstorming on the same brand, but not in the same group composition as for the earlier exercise. Two groups worked on each of the three car brands, so we had 6 brainstorming sessions to study possible features at the three experience levels. Different tools were introduced to stimulate the creative process. First the group had to reformulate the questions: how can we add more experience to the brand (either Saab, BMW, Toyota) by means of product features. How can we add more visceral, behavioral and reflective emotions to the brand (either Saab, BMW or Toyota) by means of product features? A 'divergent thinking exercise' was used to open up the mind of the respondents. The features of the existing brand could be substituted by other features, also from other product categories. Features could be combined, restructured, adapted, resized, or eliminated. The product could be given a new destiny, a new advantage... Elements of the world of animals and nature could be used as inspiration. Every feature they found could be re-associated with another possible feature. This phase resulted in between 100 and 195 items for each group. Next, these items were assigned to four categories on the basis of two dimensions: which of these items are workable and which of the items are original (Table 1).

TABLE 1
Categorization of the design ideas

	Workable	Not workable	
Original	Ideas for the middle term	he middle term Ideas for the far	
		future	
Not original	Ideas for the near future	Ideas to throw away	

We then focused on the ideas for the near future. In the last phase of this exercise the groups made a table of product features that are workable to give the brands (Saab, BMW, Toyota) a more visceral, behavioral or reflective experience.

Results

TABLE 2 Selected ideas at the three anticipated product experience levels.

Visceral	Behavioural	Reflective	
Attractive wheels Light bulbs Seats	Touch to open the door Smart/car-Smart phone interaction	Dashboard information on consumption, ecological footprint, loading possibilities	
	Adaptable driving possibility: sporty, city, sight seeing	 Showing that you're driving electric (outside labeling) Possible combination with other ecological transport 	

For each anticipated product experience level, three product features were selected for further elaboration (Table 2). These were selected on the basis of the frequency with which they were mentioned and on their categorization as workable in the near future. Because this phase in the research has to result into a design briefing with the aim to create concept cards, the possibility to visualize the items was taken into account as well.

Step 5: Creation of the concept cards

Method and procedure

The overall results of the brainstorming sessions in the previous step were used as an input to create four concept cards for each electric car brand. Taking the results of earlier quantitative research (Moons and De Pelsmacker 2011) into account, i.e that people driving a family car are more likely to adopt an electric car, we chose such a type of car for each brand. For Saab, the concept cards were based on the Saab 9.3, for BMW on the BMW3 and for Toyota on the Avensis. Besides the basic concept cards for each brand that served as control conditions, each electric car brand sketch was manipulated three times, in accordance with each of the three emotional product experience levels and based on the results of the brainstorming sessions. The basic template was the same for the three manipulated experience conditions and the representation of the three car brands was kept under control as well (same colors, no background, same perspective, same size,...). The sketches explicitly show the car brand (logo, typical car design) and make clear that it is about electric cars.

Results

Working out the 12 car sketches (cards) is in progress. A preliminary example is given below (Figure 1).

FIGURE 1
Preliminary example of concept cards



Step 6: Testing and refining the concept cards

Once the concept cards will be finished an online quantitative study will be set up to test the cards on whether the designs clearly convey the intended emotional experience levels. On the basis of the results of this study, some of the cards will probably need to be partly redesigned as to develop the right stimuli for the next step in our study.

Further research: main experiment

Method and procedure

In order to test the interaction between existing brand personalities and experiential associations on the one hand and the type of emotional design on the other, a quantitative online experiment will be conducted. A between-subjects 3x4 experimental design will be set up as represented in Table 3. Investigating which product manipulations lead to differential effects on brand personalities, experiences, attitudes and adoption intentions for each electrified brand implies the need to know how these brands are perceived initially on the aspects of brand personality, brand experience and adoption intention. Therefore, besides three different emotional design types for each brand, also three control groups will be used to measure the initial (i.e. not electrified) brand personalities and experiences.

TABLE 3
3x4 Between-subjects experimental design

	control	visceral	behavioral	reflective
SAAB	n=100	n=100	n=100	n=100
BMW	n=100	n=100	n=100	n=100
TOYOTA	n=100	n=100	n=100	n=100

Sample

As participants, individuals with driving experience with the car brands tested (not electrified) will be selected (i.e. people who already drove a Saab, a BMW or a Toyota) by means of a quota sample that is representative of the Belgian population with respect to gender, age and

education level. Participants will be allocated to the cells of the matrix in Table 3 to ensure comparable groups in terms of gender, age and education level distribution. A professional market research agency will collect the data and guarantee correct quota filling without bias.

Independent variables

The independent variables are thus the product stimulus type (three different emotional design types and a control design, as represented by four concept cards) and the car brand (three brands) given in each experimental condition.

Dependent variables

The dependent variables of the study are: brand personality, brand experience, emotions towards the car, attitude towards the car and car adoption intention. The twelve item 7 point Likert scales from Geuens, Weijters and De Wulf (2009) will be used to measure brand personality (see above for items). The twelve item 7 point likert scales from Brakus, Schmitt and Zarantonello (2009) will be used to measure brand experience (see above for items). The emotions towards the (electric) car brands will be measured by means of a 4 items, 7 point scale (Cauberghe and De Pelsmacker 2011): I will like to drive the (electric) (brand), I'm looking forward to drive the (electric) (brand); driving the (electric) (brand) could frustrate me; driving the (electric) (brand) will be boring. Additionally, scales will be developed to measure anticipated visceral, behavioural and reflective emotions towards driving the car shown. The attitude towards the brand will be measured by a six item 7 point Likert scale as proposed by Cauberghe and De Pelsmacker (2011): Driving an (electric) (brand) is a good.... a bad idea; driving an (electric) (brand) is a stupid... clever idea; I like dislike the idea of driving an (electric) (brand); I will enjoy.... I will not enjoy driving an (electric) (brand); driving an (electric) (brand) will be useful... not useful; driving an (electric) (brand) will be suitable... not suitable. The adoption intention will be measured by the 3 item 7 point scale proposed by Cauberghe en De Pelsmacker (2011): I have the intention to drive the (electric) (brand) in the near future; I will recommend the use of the (electric) (brand); I expect that I will drive the (electric) (brand) in the near future. In order to measure evaluative reactions to both the electric extension and the parent brands, these variables will be measured for both the electric car variant as the parent brand.

Based on earlier research, a number of control variables will be measured that have been shown to affect the decision process of adopting an electric car (Moons and De Pelsmacker 2011): environmental concern, environmental behaviour and value orientation. The environmental concern scale includes 8 items (Schultz 2001, Bamberg 2003, Preisendorfer 1998): The major part of the population does not act in an environmentally conscious way; limits of economic growth have crossed or will be reached very soon; environmental protection measures should be carried out even if this costs jobs; concerned about the environmental conditions our children have to live under; newspaper articles or TV reports concerning environmental problems make me angry; if we continue as we do, we are approaching an environmentally catastrophe; it is still true that politicians do far too little for environmental protection; for the benefit of the environment we should be ready to restrict our momentary style of living. Based on Whitmarsh (2009) and on qualitative research, environmental behaviour is measured based on a list of 15 possible environmental friendly behaviours one can act upon: Most of my bulbs are replaced by energy saving bulbs; I usually buy biological soaps; I recycle consequently; I installed a renewable energy system; I am an active participant in environmentalist organizations; I bought product to save water (rain, water but); I changed to green energy tariff for your home; when shopping I avoid unnecessary packaging; I always take a quick shower in order not to waste too much water; I installed a low flush toilet; I often talk with others about a more environmentally friendly way of living; my clothes are made environmentally friendly; I installed an insulation product at home; I installed a renewable energy system (heat pomp); whenever possible I leave the car aside. Fifteen items, grouped in four dimensions, from the value scale developed by Schwartz (1992) are used to measure *value orientation* (Hansla et al. 2008), i.e. to what extent the following values are lead values for the life of the respondent (7 point Likert scale): Idealism: equality, social justice, world peace; Altruism: helpful, forgiving, loyal, responsible; Achievement: ambition, efficient, successful; Power: social power, authority, influence.

On the basis of these measures, the effect of adding electric cars with different emotional design to existing car brands with different personalities and experiential associations on extension evaluation and on parent brand feedback will be investigated. Data will be collected in September-October 2011 and analyzed in November-December 2011.

Discussion

The present paper sets the scene to gaining insights into a consumer-centered innovation, selecting the right product innovation for the right brand. The study will help to understand how the proposition of the 'electric' car interacts with the brand personalities and brand experiences of three existing car brands and to what extent the fit between existing brand personalities and experiential associations and this new extension affects the evaluation of the electric car extension and the parent brand. It further explores the elaboration of product features that evoke anticipated product experiences at the visceral, behavioral and reflective processing level and the extent to which these different emotional electric car products fit existing brand personalities and experiences. Earlier research has shown the importance of emotions in the adoption intention of the electric car. This study elaborates which product features can appeal to this emotional determinant.

The result of the pretests reported in the present study is a set of branded electric product propositions that need to be tested in a large sample of the potential (electric) car buyers. In the context of schema and categorization theory, which propositions for which brands will lead to which attitude and intention to adopt an electric car brand variant and how will this line extension affect parent brands?

Furthermore the study is an exploration of the link between marketing and product development. The separation between the field of marketing strategy and marketing action (creating new products) is longstanding (Durgee 1987). The different orientations of these two fields are combined in this paper. The first three steps and the step to be taken next in the research project is focused on consumer understanding, the brainstorm session (step 4) and the creation phase (step 5) is more action based. The main experiment brings the two fields together.

Limitations

The present study has a number of limitations that offer opportunities for further research. First of all, only three brands will be investigated in more depth. The reason for this is that a solid and doable test of the effect of the fit between existing brand identity and image and an electric car extension necessitated the selection of a limited number of differentiated brands.

Future research could extend the investigation to more car brands. The design of the electric car extension was limited to three types of emotional design, using a limited number of concrete attributes to evoke these emotions. Obviously, there are many other ways in which electric cars can be designed. More and different concrete attributes could be used to evoke different emotions. Electric car propositions could also be differentiated on the basis of rational, utilitarian and functional elements rather than emotional ones. The importance and appeal of these more functional attributes relative to emotional elements could also be studied. Moreover, the fit between existing car brands and these various types of appeals could be taken into account to study evaluative reactions to electric car extensions and parent feedback effects.

Managerial implications

The results of this study will inform developers of electric car variants and marketers of car brands on how to design their electric car model and which arguments to use to appeal to the public in order to maximize the changes of success without jeopardizing the existing brand identity and image, or even to improve this existing identity by adding the right type of electric car to their model range. It will provide insights into the specific attributes to be built in to maximize the acceptance of their new model while at the same time improving their existing brand image. It will also provide them with insights into which positioning of their electric car variant to avoid because they are suboptimal in terms of fit with the existing brand image and could hinder the acceptance of the new electric car model and damage the parent brand. The results of the study can also be used to design effective advertising messages to position the new model using the most appropriate arguments in terms of design-personality fit.

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