An Experimental Study on the Effect of Brand and Brand Extension on Omission Neglect

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Omission neglect is characterized by a lack of sensitivity to missing or unknown information. This phenomenon is widely occurring, as it is not uncommon for a consumer to have to make a decision based on incomplete information. In this context, the main purpose of this study is to understand the effects of brand on omission neglect. For this purpose, three experiments were conducted involving 742 undergraduates. Comparing the experiments' findings, it appears that a recognized brand influences more decisively the judgments of experts than those of non-experts. The same effect was observed in brand extensions with high similarity.
1. Introduction

In 1988, Frank Kardes and David Sanbonmatsu started a series of studies relating information processing to the development of cognitive inferences (Kardes, 1988), identifying a phenomenon known as omission neglect - the neglect to recognize an omission of information.

Omission neglect is characterized by a lack of sensitivity to missing or unknown, including attributes, properties, quality, alternatives, options, hunches, stimuli and possibilities (Kardes & Sanbonmatsu, 2003). This phenomenon is widespread, since it is not uncommon for a consumer to have to make a decision based on incomplete information.

Sanbonmatsu, Kardes and Herr (1992), for example, presented a certain number of attributes of a camera to participants in their study and asked them to provide a judgment of the camera. Half of the participants received positive information on four attributes and the other half received positive information on eight attributes. The expected result was that participants would form more favorable evaluations of the camera when positive information on eight attributes was provided instead of on four. However, this was the case only for participants with high contextual knowledge of the product category (compared to people with little or no contextual knowledge). Participants with low contextual knowledge were not able to identify omissions and their evaluations based on only four positive attributes were as favorable as those based on eight attributes.

Frequently manufacturers reinforce in their advertisements attributes that distinguish their goods from the competitors’, purposefully neglecting to mention certain features. Even though the information is available to consumers by other means (recommendations, vendors, independent media, etc.), rarely do advertisements include all the attributes that may be important to the formation of an accurate judgment. In such cases, consumers typically use the information readily available, forgetting or even failing to notice (neglecting) what may be missing, which is what characterizes omission neglect phenomenon (Sanbonmatsu, Ho, Houghton, & Posavac, 2003).

This research assumes that consumers can assess a product’s attributes based on different criteria and hence use more complex or more simplified decision rules. Understanding how consumers evaluate the available attributes – and also those that are not available – is important for a better understanding of consumer behavior.

Previous studies have shown that brand image is tempered by what a consumer knows about a supplier or by the reputation that a supplier has built in a given market (Klein & Leffler, 1997). These findings suggest that there is variation in the perception of a particular brand, depending on the cognitive level of the consumer in question. It is believed that as the brand can play a strong role in diagnosis (Henderson, Iacobucci, & Calder, 1988), and this may increase omission neglect, diverting the consumer’s attention from other relevant attributes on which information is available.

Faced with this problem the research question that guided this work was proposed: **what is the impact of brand on consumers' omission neglect?** To answer this question, the main purpose of this study is to understand the effects of brand on the neglect of missing information.

In addition to this first introductory section, this study is structured into other three sections. The second section presents the theoretical framework that supported the other steps of the research. The following section describes the methodological process and the empirical results of the three experiments performed. Finally, the fourth section discusses the overall results, comments on the limitations and suggests proposals for further studies in future work.

2. Theoretical Framework
The main purpose of this section is to establish the epistemological positioning of this study, identifying the locus of insertion of the proposed research problem before addressing the main theoretical foundations that were used.

2.1 The omission neglect

Omission neglect is defined as a lack of sensitivity to options, attributes, issues or possibilities that were not mentioned. This phenomenon is of great interest to social psychologists and of particular relevance to the study of consumer behavior due to the nature of the world. Normally, the amount of information used to describe various objects (job seekers, consumer goods, health products, medical procedures, etc.) varies dramatically depending on the situation. Reports, speeches, interviews, advertisements and media coverage offer different levels of detail about different objects. Some are discussed in greater depth, while others are only briefly described. To a certain extent, almost everything is described in limited, incomplete, or fragmented terms (Kardes & Sanbonmatsu, 1993).

Research on omission neglect indicates that often people cannot identify the absence of important information, so that strong beliefs are formed based on inconsistent evidence (Sanbonmatsu, Kardes, & Herr, 1992; Sanbonmatsu, Kardes, Posavac, & Houghton, 1997). Strong beliefs are too favorable or unfavorable when the available evidence is only moderately favorable or unfavorable. Strong beliefs are also strongly defended. Generally, the trend is the formation of more extreme beliefs when more (not less) information is available. However, when people are insensitive to missing information, they are likely to form extreme beliefs, no matter how little is known about a particular product (or service) (Sanbonmatsu, Kardes, & Sansone, 1991; Sanbonmatsu et al., 1997; Sanbonmatsu et al., 2003).

Kardes and Sanbonmatsu (1993) found that it is unlikely that consumers will make negative inferences about missing attributes if they fail to notice that information has been omitted. When we supply a large amount of information about one product and a small amount about another, the sensitivity to missing information is greater when the product with more information is presented first. Consequently, people are less likely to form inferences and more likely to give equal preference to the two products when the one with the highest reported number of attributes is displayed first.

Kardes and Sanbonmatsu’s (1993) results suggest that omission neglect occurs because the omitted information is not evident or not much attention has been drawn to it. To the extent that this is true, the omission neglect should be smaller when the lack of information is more evident (Kardes et al. 2006; Sanbonmatsu, Kardes, & Sansone, 1991; Sanbonmatsu et al., 2003). It’s possible to increase omission neglect through the manipulation of the variables of motivation and context, which increase sensitivity to omission and lead to more appropriate judgments. People make judgments more moderately when they realize that there are omissions because they have been warned explicitly that the information provided is incomplete (Sanbonmatsu, Kardes, & Herr, 1992), when they have high prior knowledge about the object or subject matter (Sanbonmatsu, Kardes, & Sansone, 1991) or when there are comparative processes that make it extremely obvious that some objects are described by a larger amount of information (Sanbonmatsu et al., 1997). When information is limited, moderate judgments are more accurate than extreme ones (Griffin & Tversky, 1992), are more easily updated as new information is received and are easier for the opinion-holders to justify to themselves and to others (Lerner & Tetlock, 1999).

Kardes, Sanbonmatsu and his research partners showed that more appropriate judgments are made when people are more sensitive to omitted information and when these omissions are identified (Kardes et al. 2006; Sanbonmatsu et al. 1997; Sanbonmatsu et al., 2003). They also showed that it is possible for consumers to identify omissions when they are
advised to consider the judging criteria before making their evaluations (Sanbonmatsu et al., 2003).

Consumers are insensitive to many types of omission so developing procedures to reduce this phenomenon becomes extremely challenging. Studies on the subject suggest that perhaps it is not enough to encourage consumers to think about specific omissions (Sanbonmatsu et al., 1997). On the other hand, to make them aware that something is missing, even though it is not known what, can improve their decision-making capabilities. Sanbonmatsu et al. (1997) report that, after reading a large (versus small) amount of information about a product, consumers make more moderate and appropriate evaluations of products that are described only briefly. When people identify unspecified omissions they recognize that their judgments are based on limited or insufficient data.

In short, studies on the issue of omission neglect indicate that consumers are used to making judgments and making decisions based on any information found by accident or presented in a biased way. Regardless of how much and which information is used, the phenomenon of omission neglect is common because it is not evident that information is missing, because consumers overestimate the importance of the information readily available and this information interferes with the ability to think about that which is missing (Kardes et al. 2006; Sanbonmatsu et al. 1997; Sanbonmatsu et al., 2003).

2.2 Key studies on omission neglect

Even though it’s a newly emerging line of study, as the seminal works date from the second half of the eighties, the works on omission neglect number in the dozens and have been published in prestigious journals, both in business and in the area of Consumer Psychology. Table 1 shows the main studies of this research, besides the main findings.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kardes</td>
<td>1988</td>
<td>Individuals susceptible to persuasion use more inferences in assessments given the lack of information.</td>
</tr>
<tr>
<td>Sanbonmatsu, Kardes, Posavac and Houghton</td>
<td>1991</td>
<td>The evaluation of a product might be influenced by the number of attributes provided and inferred for other products of the same category.</td>
</tr>
<tr>
<td>Sanbonmatsu, Kardes and Sansone</td>
<td>1991</td>
<td>Inferences become stronger over the time, increasing omission neglect.</td>
</tr>
<tr>
<td>Sanbonmatsu, Kardes and Herr</td>
<td>1992</td>
<td>Trust in judgment is not always affected by the lack of information.</td>
</tr>
<tr>
<td>Sanbonmatsu, Kardes, Posavac and Houghton</td>
<td>1997</td>
<td>Judgment is affected by alerts about omissions and by contexts that indicate a total lack of information.</td>
</tr>
<tr>
<td>Kardes, Sanbonmatsu, Cronley and Houghton</td>
<td>2002</td>
<td>When a product has good ratings in a distribution channel, individuals with low sensitivity to the lack of information tend to infer the same assessment for other channels.</td>
</tr>
<tr>
<td>Sanbonmatsu, Kardes, Houghton, Ho and Posavac</td>
<td>2003</td>
<td>Omission neglect decreases when the limitation of information is highlighted and/or when the evaluator defines the importance of the attributes of a product before receiving the available information.</td>
</tr>
<tr>
<td>Silvera, Kardes, Harvey, Cronley and Houghton</td>
<td>2005</td>
<td>Individuals with a high need for cognitive completion tend to overestimate the information of fault trees and overlook omitted information, making more radical decisions.</td>
</tr>
<tr>
<td>Cronley, Posavac, Kardes, Meyer and Kellaris</td>
<td>2005</td>
<td>The inference of quality is more influenced by price when individuals have a high need for cognitive completion and the amount of available information is high.</td>
</tr>
</tbody>
</table>
Omission neglect is lower when consumers are encouraged to consider their evaluation criteria before receiving the load of information.

A low level of information (versus high) benefits the formation of intuitive assessments.

The predisposition to positive affection decreases sensitivity to omitted information.

As seen in Table 1, previous studies suggest that omission neglect bears a relation to perception of price (Cronley, Posavac, Meyer, Kardes, & Kellaris, 2005), to quality (Sanbonmatsu et al., 1997), to inferential adjustments (Sanbonmatsu, Kardes, & Sansone, 1991), to formation and maintenance of trust (Sanbonmatsu et al., 1997), and to its cognitive need for closure (Kardes et al., 2006). However, as far as we know, no study has been conducted on the relationship between brand (and brand extension) and omission neglect. In order to contribute to the elimination of this shortcoming, it was proposed that this study be characterized as a descriptive experimental cross section (Babbie 2006; Malhotra, 2006), performed by three simultaneous experiments with full factorial between the subjects design (Babbie 2006; Bagozzi, 2008) and randomization of the total sample (Kardes et al., 2006).

3. Formulation and Testing Hypotheses

Studies cited above have shown that individuals with a low contextual cognitive level, i.e. individuals with little or no prior knowledge about the attributes of the object (product or service) that is being evaluated (non-experts, from this point onwards) are less sensitive to missing information, while individuals with a high contextual cognitive level, i.e., with high prior knowledge of the attributes of the object (product or service) that is being evaluated (experts from this point on) are more sensitive to omitted information.

Although omission neglect has been only modestly tested in cultures other than the U.S.A. (Kardes & Gurumurthy, 1992), it is believed that the phenomenon is timeless and independent of the local culture. Thus was formulated the first hypothesis to be tested:

H1 - Evaluations conducted by non-experts individuals are made independently of the number of positive attributes presented (4 or 8), while experts will make more positive evaluations for products described by 8 positive attributes (versus 4).

3.1 Experiment 1

The same procedure of data collection was used in all three experiments and is described below.

3.1.1 Sample and control procedures

Questionnaires were presented to undergraduate students of Business Administration at six institutions of higher education, two in Paraná state (Maringá and Apucarana) and four in São Paulo state (in the cities of Guarulhos, São Carlos, Taubaté and São Paulo), and also to graduate students in Business Management from a university center in the capital city of São Paulo. The students were all enrolled in night courses. We chose this sample for three reasons: (a) the easy access that the researcher had to the sample, which characterizes the sample as non-probabilistic for convenience (Malhotra, 2006); (b) because college students have a good understanding of structured questionnaires, which are often used in quantitative research in social sciences and applied psychology (Ramanathan & Dhar, 2010) and (c) students who study at nighttime usually work (Terribil-Filho & Quaglio, 2005), have reasonable financial autonomy and, therefore, can make their own spending decisions.

The application of instruments for data collection took place in the students’ own classrooms and was carried out by the regular teacher of each class, the teachers having been trained for this task.

3.1.2 Design of the instrument for data collection
To measure the effects of brand on omission neglect, data collection forms were used and adapted to each of the three experiments that were carried out.

In all cases, the first section of the survey forms asked the respondent to perform an evaluation of a notebook computer that would be released shortly. A notebook was selected as the object of assessment because this type of equipment is very present in the daily lives of college students, because it has wide variety of settings and brands, and because it would arouse interest in the audience who participated in the research, having been ratified by the pre-test with a group of college students (n = 30). In this first block, there was manipulation of the independent variable "cognitive load" (4 versus 8), i.e., the object was described with four attributes for one group of respondents and with eight attributes for the other group. The attributes used to describe the object are shown in Table 2.

Table 2 – Cognitive load used in Experiment 1

<table>
<thead>
<tr>
<th>Attributes used</th>
<th>(* ) Capacity of HD</th>
<th>500 GB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(*) Software package</td>
<td>Complete Office and operating system Windows 7</td>
</tr>
<tr>
<td>RAM</td>
<td></td>
<td>4 GB DDR2</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Core 2Duo T6500 2.4 GHz</td>
<td></td>
</tr>
<tr>
<td>Wireless</td>
<td>Wi-Fi Wireless Lan 802.11 b/g + Bluetooth H680</td>
<td></td>
</tr>
<tr>
<td>Model and battery life</td>
<td>Lithium Battery 6-cell and autonomy of 10 hours</td>
<td></td>
</tr>
<tr>
<td>(*) Hardware recording media</td>
<td>CD/ DVD Player (CD/DVD R+RW)</td>
<td></td>
</tr>
<tr>
<td>(*) Number of USB ports</td>
<td>8 ports available</td>
<td></td>
</tr>
</tbody>
</table>

(* ) Attributes used in applications with reduced cognitive load (4 attributes)

The second section, identical in all experiments, asked respondents to rate the object described in the stimulus presented in the first block by indicating their level of agreement with each of six statements (This new notebook is great; I would definitely buy this notebook; This new notebook is better than the notebooks I know; I would recommend this notebook to a friend; This notebook meets my needs; I trust this new notebook). To do so, respondents were asked to use a five-point scale ranging from (1) strongly disagree to (5) strongly agree.

The third section, also identical in all experiments, aimed to measure the cognitive context, i.e., the level of expertise of each of the respondents on the object of evaluation. Each participant was presented with a list of eight technical questions on the features of notebooks. The questions had different levels of difficulty and were presented in multiple choice forms with five response options for each, only one correct.

For the selection of the third block of questions, two professionals in the field of information technology were asked to draw up 20 questions about general characteristics of notebooks with different difficulty levels - low, medium and high, with the understanding that they would apply to non-professionals - and to rate each question according to its difficulty. A cross-validation was conducted, so that each professional evaluated the selection made by his counterpart, in order to confirm the level of difficulty of each question. The 16 questions in which the classifications made by the professionals were identical underwent an evaluation by six judges with strong domain expertise in information technology, resulting in the final selection of eight questions to measure the contextual cognitive level of the respondents. After the three sections, in the survey there were some questions about the demographic characterization of the respondents.

3.1.3 Plan of data analysis

In the first experiment, we used a full factorial between-subjects design, with a 2x2 design (number of attributes [4 versus 8] x contextual cognitive level [experts versus non-experts]). ANOVA was used for effects analysis.

3.1.4 Results of Experiment 1

The final sample of Experiment 1 consisted of 165 undergraduates of Business Administration, 79 men (47.9%) and 86 women (52.1%), with a mean (referred to from this
point on as M) age of 24.7 years (s.d. = 8.21). Of the total, 135 respondents (81.8%) besides studying also had some sort of remuneration.

Exposure to stimuli was relatively balanced as 87 students (52.7% of the sample) evaluated the object using four positive attributes, while another 78 (47.3%) used 8 positive attributes. The total aggregate was used because the six items measuring the evaluation had acceptable internal consistency (Cronbach's Alpha = 0.825).

Factors were created for the independent variables. The contextual cognitive level factor was created by the number of correct responses to the third block of questions in the questionnaire. The sample was split into two groups and the group of experts was represented by individuals who correctly answered at least seven of the eight questions (28). The group of non-experts was represented by the remaining participants (137).

As expected, the ANOVA identified the main effect for both contextual cognitive level (F (1,161) = 66.795; p < 0.01) and number of attributes (F(1,161) = 29.359; p < 0.01). Also as expected, an interaction effect was identified between the cognitive level and the number of contextual attributes of the object (F(1,161) = 20.99; p < 0.01).

The results indicate that experts were sensitive to the omission of information and evaluated the object significantly differently depending on the available cognitive load (M_4attributes = 2.508 and M_8attributes = 3.703, t(26) = 5.826; p < 0.01), confirming results previous obtained. Also as expected, the non-experts neglected the omissions and evaluated the object equally regardless of the available cognitive load (M_4attributes = 4.032 and M_8attributes = 4.132, t(135) = 1.062; p = n.s.).

3.1.5 Discussion of the results of Experiment 1

Experiment 1 replicated the results of the prior research that had identified the phenomenon of omission neglect. In this application, the phenomenon also manifested itself through the less extreme evaluations performed by experts (versus non-experts), who were sensitive to the lack of information when evaluating the object using a small set of positive attributes. On the other hand, non-experts conducted extreme evaluations when a small set of attributes was available.

Another feature of the phenomenon of omission neglect was identified when non-experts demonstrated insensitivity to the number of available attributes.

As no other effect was expected or has been identified.

3.2 The effects of brand on omission neglect

The main purpose of this study is to identify the effects of brand on omission neglect. Pinho (1996) highlights the role of brand in the building of business success. Keller (2003) supports this statement and adds that the power of brand to create positive associations for products (or organizations) might ensure the proper positioning of these in an increasingly competitive market.

Knowledge of a brand is measured by a potential buyer’s ability to recognize or recall a brand as belonging to a particular product category (Aaker, 1996; Keller, 2001 and 2003). This form of brand recognition is the first basic step in the task of communication, and all models that attempt to predict the success of new products point to brand recognition as the key to starting the process (Souza & Almeida, 2001). Still, according to Souza and Almeida (2001), a purchasing decision rarely occurs without brand recognition.

It is noteworthy that, from a consumer’s perspective, an object’s quality is not necessarily related to its technical specifications, nor is the consumer’s opinion the result of a careful and thorough analysis of the object’s characteristics. The quality that the consumer believes an object has is related to a broad and intangible feeling about the brand being considered (Keller, 2003), making brand an element of great influence on the consumer decision process. So we formulate the following hypothesis:
H2a - Evaluations conducted by non-experts are not affected by the number of positive attributes presented (4 or 8) even when one attribute is a recognized brand.

H2b - Evaluations conducted by experts will be affected when a recognized brand is being considered, regardless of the number of positive attributes presented (4 or 8).

It is expected that the effect of an unknown brand, when evaluated in conjunction with a selection of positive attributes, will be to influence the recognition of omission neglect. Thus we formulate:

H3a - Evaluations conducted by experts will be more positive for the products described with 8 positive attributes (versus 4) when an unrecognized brand is one of the attributes presented.

H3b – Evaluations conducted by non-experts will not be related to the number of positive attributes presented (4 or 8) even when the attributes is an unrecognized brand.

3.2.1 Experiment 2

Only the first block of the questionnaire applied in the second experiment differed from the version used in Experiment 1. A brand was included in the set of attributes available to respondents as the cognitive load was manipulated (3 attributes + brand versus 7 attributes + brand).

To achieve the selection of a recognized brand that would be used in the study, a group of 61 students were asked to evaluate a list of 16 brands of notebook computers sold in the country, according to ACNielsen consulting (http://www.acnielsen.com.br/issues/brand.shtml, retrieved on 02 November, 2009). Students indicated their preferred brand of notebook via a 10-point scale, with anchor 1 - strongly disagree and 10 - completely agree. The results pointed to the HP brand as the best option for this propose.

For the selection of the unrecognized brand, we used the software MakeWords (see www.makewords.com), designed specifically for the creation of names and domains in various languages. The software created a list of 17 names, that were then submitted to a group of 34 students for evaluation in a ten-point scale, anchored by 1 - strongly disagree and 10 - completely agree, to find the best name to use as a notebook brand. The survey was conducted through digital means, using the website QuestionPro. The results pointed to the brand Neosys as the best option for use in this experiment.

The cognitive load that was available for evaluation by the participants of Experiment 2 was the same as in Experiment 1, with the replacement of the number of USB ports for the brands that would be assessed - HP (recognized) and Neosys (not recognized).

3.2.2 Plan of data analysis

To verify the effect of brand on omission neglect, the number of attributes of the object to be evaluated and the type of brand (recognized or unrecognized) were manipulated. The levels of expertise of the respondents were also controlled. In the second experiment, we used the full factorial design of 2x2x2 between-subjects (number of attributes [4 versus 8] x contextual cognitive level [experts versus non-experts] x type of brand [recognized versus unrecognized]). For the data analysis, we used ANOVA.

3.2.3 Results of Experiment 2

The final sample of Experiment 2 consisted of 302 undergraduates of Business Administration, with 145 men (48%) and 157 women (52%) and a mean age of 24.5 years (s.d.= 6.3). From the total, 256 of the respondents (84.8%) had some sort of income. Exposure to stimuli was relatively balanced as 154 students (51% of the sample) evaluated the object using 4 positive attributes while the other 148 (49%) used 8 positive attributes. Similarly, the evaluation of the recognized brand was performed by 143 participants (47.4%) while the unrecognized brand was evaluated by the other 159 raters.
(52.6%). The total aggregation was used because the six items measuring the evaluation presented acceptable internal consistency (Cronbach's Alpha = 0.889).

The effectiveness of manipulation was verified by means of a Likert scale of 5 points (with 1 – I do not know this brand of notebook and 5 – I certainly know this brand of notebook). As expected, the t test for independent samples showed that there was a significant difference between the recognition levels of the two brands (Mrecognized = 4.89 and Munrecognized = 1.74; t(301) = 14.27; p < 0.01).

Factors were created for the independent variables. The contextual cognitive level factor was created by the number of correct responses to the third block of questions in the questionnaire. The sample was divided into two groups, and the group of experts was represented by individuals who correctly answered at least seven of the eight questions (46) and the group of non-experts by the remaining participants (256).

As expected, the ANOVA identified main effects for the contextual cognitive level (F(1,301) = 6.201; p < 0.05), for the type of brand (F(1,301) = 18.157; p < 0.01) and for the number of attributes (F(1,301) = 11.880; p < 0.05). Also as expected, interaction effects between contextual cognitive level, the number of attributes of the object and the type of brand (F(1,301) = 3.044; p < 0.10) were identified. Figures 1 and 2 show the interactions that were observed.

The results indicate that non-experts neglected the omission of information when a non-recognized brand was available and evaluated the object in a consistent way regardless of the number of attributes that were available to perform this evaluation (Mattributes = 3.60 and Mattributes = 3.95, F(1,133) = 1.127; p = n.s.). The results also indicate that experts observed the omission of information when a non-recognized brand was available and made more positive evaluations when using a larger set of attributes (Mattributes = 2.86 and Mattributes = 3.96, F(1,22) = 8.564; p < 0.01).

On the other hand, the experts did not recognize the omission of information and made equal assessments for any set of attributes when a recognized brand name was being considered (Mattributes = 3.96 and Mattributes = 4.04, F(1,20) = 0.046; p = n.s.). The same effect was observed in the evaluations of non-experts (Mattributes = 4.15 and Mattributes = 4.35, F(1,119) = 2.806; p = n.s.).

3.2.4 Discussion of the results of Experiment 2

There is evidence that a recognized brand influences the assessments of experts, making them insensitive to the omission of information. Apparently, the experts anchored their evaluations almost exclusively on the brand. Thus, the recognized brand demonstrated its power to positively moderate the assessment of the object, even when the contextual cognitive level of the evaluator was high.
As expected, non-experts demonstrated insensitivity to the set of available attributes and evaluated the object in the same way when an unrecognized brand was available. Possibly, this insensitivity might contribute to less carefully considered decision making by consumers.

It was also found that the non-recognized brand was treated as any other attribute, not influencing decision-making in the evaluation of the object. Experts ignored the non-recognized brand and anchored their assessments on the set of available attributes, while non-experts performed less-considered evaluations (when compared to experts) when the set of attributes was reduced. No other effect was expected or has been identified.

3.3 The effect of brand extension on omission neglect

Still trying to identify the effects of brand on omission neglect, we proposed to study the impact of brand extension on this processing phenomenon.

Brand extensions have proliferated in recent decades. Marketing studies have found that between 80 and 90% of the products launched each year use this strategy of branding (Keller, 2003).

It is understood that a brand is extended when it is used in a different class of product or service from that in which it is usually used (Swaminathan, Fox, & Reddy, 2001). This is also Aaker’s (1998) understanding when he says that brand extension occurs when a brand name already established in a market or product category (a main brand or an umbrella brand) enters another market or product category in which it has not yet been operating.

The extension of a brand can be used for products (or services) closely related to the main brand (similar), as well as for products or services not belonging to the same consumer class (not similar), as well as for channels of distribution or communication (Tavares, 1998). An example of the former is the strategy used by Nestlé in the brand extension Nescau, which was originally the brand of a single product (chocolate powder) and was subsequently used for further food items (breakfast cereals, ice cream, chocolate bars and chocolate milk). The second situation is exemplified by the strategy of the hypermarket chain Carrefour, which extended its brand to a network of gas stations and then to a network of pharmacies.

Studies show that there is transfer, both positive and negative, of affection between the umbrella brand and brand extension. Aaker and Keller (1990) postulated that when there is incongruence between the attributes of the umbrella brand and those of the extended brand, the consumer tends to perceive the brand extension as negative. On the other hand, they argue that the perception of similarity between the main brand and the extension is positively affected when the categories of products have a complementary nature. However, in light of omission neglect, as the consumer tends to simplify the processing of information, often ignoring what has been omitted, it is believed that when the extension of a brand with perceived high quality is being considered, individuals with low (versus high) contextual cognitive levels overlook the omission of information and make more positive evaluations (versus moderate). Therefore, before this belief, the following hypothesis was formulated:

H4a - Evaluations conducted by non-experts don’t depend on the number of positive attributes presented (4 or 8) in any situation of brand extension (of high or low similarity). These individuals will overlook the omission of information.

H4b - Evaluations conducted by experts will be more positive for brand extensions in products described with 8 positive attributes (versus 4) when the brand extension has a low similarity (versus high).

3.4.1 Experiment 3

The purpose of Experiment 3 was to identify the effects of a brand extension on the phenomenon of omission neglect, and to that effect only the first block of the questionnaire used in this experiment was altered when compared to the data collection instrument used in the two previous experiments. In this application, the number of attributes of the object to be
measured was manipulated. Brand extensions were included in the experiment at the same time - one with high similarity (3 positive attributes + recognized brand extension versus 7 positive attributes + brand extension with high similarity) and another with low similarity (3 positive attributes + unrecognized brand extension versus 7 positive attributes + brand extension with low similarity). Also the contextual cognitive level was measured. In this experiment, we used the full factorial between-subjects design of 2 (number of positive attributes - 4 versus 8) by 2 (contextual cognitive level - experts versus non-experts) by 2 (similarity of brand extension - high versus low).

3.4.2 Selection of the stimulus - brand extension

To select the brand extension, a brainstorming process was held. A group of students were asked to list companies that manufacture consumer electronics and/or appliances, but that do not manufacture computers. The resulting list, containing 10 brands, was submitted to a second group of university students (n = 45) so that they could examine these suggested brands and evaluate how they could be used in notebook computers. The classification was performed using a 10-point scale with anchors at 1 (This brand definitely could not be used for a notebook) and 10 (This brand could definitely be used for a notebook).

The survey was conducted digitally using the website QuestionPro. The results of this evaluation pointed to the Motorola brand as the best option for identifying the influence of high-similarity brand extension on omission neglect, and to the Wallita brand as the best option for identifying the impact of low-similarity brand extension on the same phenomenon.

3.4.3 Results of Experiment 3

The final sample of Experiment 3 consisted of 275 undergraduates of Business Administration, 131 men (47.6%) and 144 women (52.4%), average age 25 years (s.d. = 6.79). Of the total, 234 respondents (85.1%) had some sort of income in addition to their studies. As shown in Table 3, there was a balance in the sample exposure to selected stimuli.

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>N</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 attributes + brand extension with high similarity</td>
<td>71</td>
<td>25.82</td>
<td>25.82</td>
</tr>
<tr>
<td>7 attributes + brand extension with high similarity</td>
<td>64</td>
<td>23.27</td>
<td>49.09</td>
</tr>
<tr>
<td>3 attributes + brand extension with low similarity</td>
<td>67</td>
<td>24.36</td>
<td>73.45</td>
</tr>
<tr>
<td>7 attributes + brand extension with low similarity</td>
<td>73</td>
<td>26.55</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>275</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

The aggregate total was used because the six items of measuring of the evaluation had acceptable internal consistency (Cronbach's Alpha = 0.844).

The effectiveness of manipulation in two dimensions was verified. First, there was the recognition of the brands, measured by a Likert scale of 5 points (with 1 - I definitely do not know this brand and 5 - I definitely know this brand). As expected, the t test for independent samples showed no difference between the recognition of the brands used (M_{Motorola} = 4.27 and M_{Wallita} = 4.12; t(273) = 1.132; p = n.s.). The second manipulation check verified the perceived similarity between the brand and extended category of the product that would receive the extension, in this case a notebook computer. To this effect, a semantic differential scale of 5 points (1 - Not at all similar, 5 - Very similar) was used. Respondents rated the Motorola brand as having the greater perceived similarity (M = 3.58) when compared to the brand Wallita (M = 2.29; t(273) = 12.216; p < 0.01), as had been expected.

Factors were created for the independent variables. The contextual cognitive level factor was created by the number of correct responses to the third block of questions in the questionnaire. The sample was divided into two groups and the group of experts was represented by individuals who correctly answered at least seven of the eight questions (64) and the group of non-experts by the remaining participants (211).
The analysis of variance by ANOVA was the next step.

As expected, the analysis of variance identified main effects for similarity (F(1,267) = 14.419; p < 0.01), for the number of attributes (F(1,267) = 8.442; p < 0.05) and for the contextual cognitive level (F(1,267) = 8.988; p < 0.05). It also identified effects of interaction between the three variables (F(1,267) = 2.874; p < 0.05).

In order to provide a better understanding of the phenomenon, the averages are presented in Figures 3 and 4.

In their evaluation of the brand extension of low similarity, experts observed the omission of information and evaluated the object more positively when there was a set of eight attributes (M₈attributes = 3.52 and M₄attributes = 2.57; t(23) = 10.466; p < 0.05). As expected, non-experts overlooked the omission and made the same assessment regardless of the available cognitive load (M₈attributes = 3.72 and M₄attributes = 3.59; t(113) = 0.500; p = ns).

By comparison, the brand extension with high similarity was evaluated equally by both experts (M₄attributes = 3.70 and M₈attributes = 3.79; t(37) = 0.193; p = n.s.) and non-experts (M₄attributes = 3.75 and M₈attributes = 3.94; t(94) = 1.96; p = ns). No other effects were expected or observed.

3.4.4 Discussion of the results of Experiment 3

As expected, experts were sensitive to the omission of information when evaluating the product with the brand extension of low similarity, while non-experts overlooked the omission. Apparently, a brand extension of low similarity does not diminish the sensitivity of experts, who prepare their assessments based on the available cognitive load.

However, the similar brand extension made experts insensitive to the omission of information. In this situation, the experts anchored their ratings on the brand and didn’t distinguish the available cognitive load. The non-experts were insensitive to the omission of information in both situations, indicating that a low contextual cognitive level can affect judgment and decision-making regardless of brand.

In contrast to previous studies, in which the experts identified the omission of information, the recognized brand, as well as the brand extension with high similarity, influenced the assessments of these individuals, making them insensitive to omitted information.

4. General Discussion and Limitations of the Research

The study at hand showed that the brand of a product has more significant effects on the evaluations of individuals with a high contextual cognitive level (versus low). The
phenomenon of omission neglect was identified in the first experiment, confirming what had been anticipated.

Previous research results on decision-making behavior were ratified, in which it was evident that individuals focus on the alternatives presented and promptly ignore possibilities omitted. This effect is moderated by the contextual cognitive level of the individual and when this level is high, the evaluation tends to be more moderate and assertive.

The search for information is a key step in current models of consumer behavior; however, as observed by Wakker (1988), this phase is often neglected, so that individuals make their consumption decisions based on assessments made with only part of the relevant information.

Tversky and Kahneman (1974) believe that motivation is the main individual characteristic that determines whether a consumer neglects the search for information. It was determined in this study that cognitive need also plays an important role.

All empirical applications support the view that individuals with a low contextual cognitive level are insensitive to the omission of attributes and neglect them, not considering the characteristics of the available brand. Individuals with a low contextual cognitive level are also extreme in their judgments, and are very positive in that effect, even when there is no apparent reason for this to occur. Sometimes, such as when their prior knowledge about the object to be evaluated is low or null, these individuals anchor their assessments on any information they deem relevant and adjust their assessments in this regard.

It was also identified that a recognized brand influences the assessment when it’s part of a set of attributes. In this study, the information processing performed by experts and by non-experts was basically the same. The group of individuals with a high contextual cognitive level were more sensitive to brand than to other available attributes and overlooked the omission of some of them. This finding opens up space for new research on the subject because the contextual cognitive level alone wasn’t able to explain the omission neglect as noted in the past, showing the power of brand as a diagnostic factor in consumer decision.

As expected, non-experts make more extreme assessments when they do not recognize the omission of information. Even if an unrecognized brand is evaluated by a non-expert, the evaluation tends to be insensitive to the set of attributes.

Comparing the findings of the experiments, it is possible to understand that a recognized brand influences more decisively an expert’s assessment than a non-expert’s. Even amongst experts who anchor their judgments on more stringent assessments of the available attributes, brand recognition has a strong influence on the overall assessment of the object.

Research on the process of forming purchasing decisions has already indicated the importance of brand recognition as a determining factor in making the decision (Keller, 2003) and as a critical path for the success of a new product (Souza & Almeida, 2001). In the analysis of the data from the experiments that were conducted, the importance of a recognized brand in the process of evaluating a product was verified, particularly in evaluations made by experts. As this audience might also be classified as trend setters, because in many situations they can be a source of consultation for individuals with lower cognitive contexts, the recognition of a brand becomes essential to providing better assessments and more prestige to the product.

Tversky and Kahneman (1974) claim that inference from prior information about a variable is the most common type of prediction in applied settings. We tried to see how the individual evaluates brand extensions of high (versus low) similarity to the product category of the main brand. The results indicate that non-experts neglect the omission of information and evaluate in a more extreme way any available brand extension, becoming insensitive to the cognitive load that is available.
As expected, the experimental brand extension of high similarity was better evaluated by experts as compared with the experimental brand extension of low similarity. This points to the power of moderation in a brand extension strategy. This research suggests that similar brand extensions tend to be overestimated in any context of consumer expertise. Instead of developing a new brand, the simple and economical strategy of encouraging consumers to consider a moderately favorable brand extension may be sufficient to generate a sustainable competitive advantage.

Finally, summarizing the results identified in this study, Table 5 shows the testing of hypotheses designed in the second section.

<table>
<thead>
<tr>
<th></th>
<th>H1a</th>
<th>H1b</th>
<th>H2a</th>
<th>H2b</th>
<th>H3</th>
<th>H4a</th>
<th>H4b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not rejected</td>
<td>Not rejected</td>
<td>Not rejected</td>
<td>Not rejected</td>
<td>Not rejected</td>
<td>Not rejected</td>
<td>Not rejected</td>
</tr>
</tbody>
</table>

4.1 Academic implications

Although the study of omission neglect is relevant, the earliest empirical research on the subject, into which category this study fits, is quite recent, dating from the late 80’s (Kardes, 1988). This enables to the present study to provide some theoretical contributions that aim to enrich the debate on the phenomenon.

For example, previous studies have shown that individuals try to form extreme assessments when little information is available (Sanbonmatsu, Kardes, & Sansone, 1991; Sanbonmatsu, Kardes, & Herr, 1992; Sanbonmatsu, et al., 1997). In this application, the moderating power of the brand was identified, which enhanced the insensitivity of individuals with a high contextual cognitive level in relation to missing information.

Also on the theoretical level, it is noteworthy that, although other studies have analyzed the phenomenon of omission neglect, this is the first one to examine its effects in conjunction with brand and brand extension.

Finally, from a methodological standpoint, the use of experiments can be recognized as a contribution of this thesis. Although it is a well-established practice in other fields, only a few national studies in marketing have used this technique.

4.2 Marketing implications

The seminal managerial implications in the literature on omission neglect result from the general insensitivity of consumers to missing information. Whereas the identification of omission varies depending on context and motivation, marketing managers might take advantage of this insensitivity by developing strategies to selectively present information in various situations.

In the opposite direction, using a recognized brand proved to be effective in reducing the recognition of omission. Given this, in times of scarcity of space or of resources - in which the cost of placements in the specialized media needs to be reduced - marketing managers can increase their emphasis on brand over other attributes of consumer goods. Similarly, the experiments have shown that, although important, the number of attributes is not a decisive factor in the evaluation process on a product for the public and that, in these situations, a good "image" for the brand takes on crucial role.

The results also suggest that the way consumers process the available information is associated with both individual characteristics and situational factors. Given this, marketing managers may make efforts to increase the contextual cognitive level of prospective buyers through courses, lectures and demonstrations, in order to reduce the effect of omission neglect, when this attitude is in line with their sales strategies.

The brand extension of high similarity obtained a very positive evaluation compared to the results of other manipulations performed, which confirms previous studies on this branding strategy. However, there was also indication that a brand extension of low similarity is best evaluated when there is a large repertoire of positive attributes available to the
consumer. This indication might inform managers’ choices in the development of advertising, websites and displays for points of sale.

Prior research has identified stages of the buying decision that are influenced by omission, as well as several ways to mitigate their negligence. By better understanding the processes associated with the neglect of latent omission, marketing practitioners can make better strategic decisions. This paper joins the growing body of research on omission neglect, helping to enhance our understanding of the mechanisms underlying the formation of judgments on declared and omitted attributes.

4.3 Limitations and possible extensions to the theme

The limitations of this research should be made evident, allowing future studies to carry lesser probability of sloping.

First, the characteristic of the sample used in various experiments has to be mentioned. Great care was adopted to mitigate biases, including the complete randomization, but still the use of students, common in academic research because they are a "captive sample" (Gillham, 2000), has some limitations that prevent the generalization of results. Peterson (2001), warning of the homogeneity of the responses of this group, focused on the importance of replication studies based on samples of college students with others randomly chosen. Given this warning, this is the first suggestion for continuing this line of research: that, in future studies, efforts are made to culminate in the use of random samples.

Various stimuli were used in the development of the experiments: recognized brands, unrecognized brands, brand extensions of both high and low similarity, and all were applied to the same object. It is recommended that, in future, other objects are used to confirm the effect of brand on omission neglect.

Another methodological limitation, which can be revisited in future studies, would be the use of "scenarios" in the experiments. In the taxonomy of Malhotra (2006), “scenarios” are classified as designs of experiments. The artificiality that this method confers to data collection instruments can be minimized with the use of platforms that use more modern research, for example, a simulated website.

The manipulation of attributes used only features of relevance to assist in the decision-making process on the acquisition of the object. However, as the market does not always operate in this way, studies that associate irrelevant attributes and brand could contribute to new theoretical perspectives.

Finally, new experiments that explore the relationship between the evaluation of negative cognitive load and unrecognized brand could be an interesting possibility for further studies on brand and omission neglect.

References


