

A Work Project, presented as part of the requirements for the Award of a Masters Degree in Management from the Faculdade de Economia da Universidade Nova de Lisboa.

The Dilution Effect: The Influence of Expertise and Abstraction on Consumers' Judgments of Products

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A Project carried out on the Consumer and Managerial Decision Making course, with the supervision of:

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June 7th 2010

Abstract

Social studies suggest that adding obviously irrelevant product information to diagnostic information mitigates consumers' judgments of products, a concept named dilution effect. This study shows that expert consumers are not only less subject to the dilution effect than novice consumers but it also suggests that experts are in fact shielded against the effects of irrelevant information. In addition, this project was also able to demonstrate that irrelevant information may be positive for brands to communicate when the target is not an expert in the product category and the irrelevant information is somewhat abstract and vague. As irrelevant information becomes more concrete, consumers with low expertise will be subject to the dilution effect whereas experts will remain unaffected.

Keywords: dilution, expertise, abstract, concrete

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1. Introduction

How can irrelevant information play a role in consumers' decision processes? If the information is irrelevant for a choice, should not it be discarded? Well, some studies have shown that irrelevant information may indeed influence the decision making process.

When consumers evaluate products or services, they often search for diagnostic information on specific product benefits; information that helps them classify if a product will deliver a desired benefit or not. Naturally, when searching for diagnostic information, consumers will also be exposed to irrelevant information; information that they perceive as clearly uninformative about the desired benefit they are looking for. Normatively, the presence of irrelevant information should not change consumers' assessment of the product's ability to deliver the desired benefit (Meyvis and Janiszewski 2002). However, consumers do not always behave rationally. Studies on social judgment have demonstrated that adding obviously irrelevant information to diagnostic information may lead to less extreme judgments (e.g., De Dreu, Yzerbyt, and Leyens 1995; Fein and Hilton 1992; Nisbett, Zukier, and Lemley 1981). This so-called dilution effect suggests that obviously irrelevant product information may weaken consumers' beliefs in a product's ability to deliver a desired benefit (Meyvis and Janiszewski 2002).

Contrarily, Carpenter, Glazer and Nakamoto (1994) argue that many brands also successfully differentiate on an attribute that *appears* valuable but, on closer examination, is irrelevant to creating the implied benefit. Despite not being obviously irrelevant, it is still irrelevant for the benefit it proposes. For example, Alberto Culver differentiates its Alberto Natural Silk Shampoo by including silk in the shampoo and

advertising it with the slogan "We put silk in a bottle" to suggest a user's hair will be silky. However, a company spokesman conceded that silk "doesn't really do anything for hair" (*Adweek* 1986). In the words of Carpenter, Glazer and Nakamoto (1994), "consumers apparently value these differentiating attributes even though they are, in one sense, irrelevant. Adding an irrelevant attribute to a brand changes the structure of the decision that consumers face, especially if the differentiating attribute is difficult to evaluate, such as silk in shampoo. As a result, consumers may infer the attribute's value and, in some cases, conclude that it is valuable".

Two examples have been shown in which irrelevant information has an influence in consumers' judgments regarding the ability of a certain product to deliver a desired benefit. But at this point two questions emerge: (1) does this happen to consumers with different levels of expertise? And (2) What about the type of information displayed, does it play a role?

To answer the first question, this study tries to assess if the level of expertise (or experience) may mitigate the effects of irrelevant information. The literature in psychology indicates that the dilution effect may diminish with experience, possibly because more-experienced decision makers have highly developed knowledge structures (organization of knowledge in memory) that enable them to focus on relevant evidence (Patel and Groen 1986; Lesgold et al. 1988).

In addition to expertise, this project also tries to evaluate whether the level of abstraction of a product attribute mitigates (or not) the impact of irrelevant information. Abstractness is typically defined as the inverse of how directly an attribute denotes particular objects or events (Johnson 1984). Conversely, concrete attributes are those that are inherent in the stimulus object (Slovic 1972). Thus, the abstract attributes of an

object need to be inferred or computed from concrete attribute information, whereas concrete attributes are directly associated with the object (Bettman and Sujan 1987). In the example of “Alberto Natural Silk Shampoo”, silk was an irrelevant product attribute but it was also difficult for consumers to evaluate. One of the propositions of this study is that abstract information may have similar consequences to the ones reported in the previous example.

Despite not being areas that have intensively been studied, there are already some conclusions of how the level of expertise relates to dilution and how the level of abstraction of product information may interact with trivial attributes. However, combining both variables (expertise and abstraction) has not yet been studied and that is the main objective of this project, to assess whether different levels of expertise combined with different levels of abstraction generate more or less dilution in consumers’ judgments of a product’s ability to deliver a desired benefit.

2. Literature Review: Dilution Effect, Expertise, and Abstraction

In this section of the project I will discuss the literature on the dilution effect, and discuss the effects of expertise and abstraction on dilution.

2.1. The Dilution Effect

When irrelevant information is added to diagnostic information, consumers generate less extreme judgments, a phenomenon also known as the dilution effect. Several studies in the consumer behavior literature have demonstrated that objectively irrelevant product information can influence consumer decisions (Meyvis and Janiszewski 2002). Zukier and Jennings (1983) reported a good example of this phenomenon in their study where they discovered that the jury in a trial was less likely

to find a man guilty of murdering his aunt when irrelevant information (e.g., “The defendant is of average height and vision”) was added to diagnostic information (e.g., “He was known to have argued with his aunt”).

In an attempt to explain why this phenomenon happens, four main theories have been used: averaging models, conversational norms, representativeness heuristic and biased hypothesis testing.

2.1.1. Averaging

The first explanation for the dilution effect is called averaging and it defends that by adding irrelevant information to supportive information, the impact of the latter is somehow reduced.

Averaging is the most popular account of the dilution effect within the nonsocial judgment literature and can be classified into two groups of models (Birnbbaum and Mellers 1983; Lichtenstein, Earle and Slovic 1975; Shanteau 1975; Troutman and Shanteau 1977). Defenders of the first group, (e.g., Anderson 1971, 1974; Birnbbaum and Mellers 1983) argue that if each piece of information added has a nonzero weight, and assuming that each message always accounts for 100%, the addition of irrelevant information will always have some weight that will force the reduction in the weight of already existing attributes. Researchers in favor of a different explanation (e.g., Lichtenstein et al. 1975; Lopes 1987; Shanteau 1975) assume that people make separate predictions regarding each piece of information and then average their predictions altogether.

2.1.2. Conversational Norms

A different explanation for the dilution effect comes from social judgment literature. It is argued by authors such as Schwarz et al. (1991); Slugoski and Wilson (1998); Tetlock, Lerner, and Boettger (1996) that the dilution effect is merely a result observed in experiments due to erroneous inferences made by people that rely on conversational norms. One of the conversational norms that is assumed to be respected in such experiments is that “all information is relevant for the goal of the conversation” (Grice 1975), also called the principle of relevance by Sperber and Wilson (1986). “If the experimenter provides this information it must be relevant” is the reason why the principle of relevance is violated, leading participants in dilution studies to wrong conclusions.

2.1.3. Representativeness

Still within the social judgment theory, the most popular explanation for the dilution effect for many years has been the representativeness heuristic (Fein and Hilton 1992; Hilton and Fein 1989; Locksley, Hepburn, and Ortiz 1982; Nisbett et al. 1981; Tetlock and Boettger 1989; Zukier 1982). According to Kahneman and Tversky (1972, 1973) “the representativeness heuristic is a strategy by which subjects use the similarity between the available information about the individual and the to-be-predicted behavior to estimate the probability that the individual will display the behavior”. In other words, consumers have in mind a product/brand they recognize as being representative (e.g., Gillette may be seen as representative of the razor blade category) and when they compare a new product against the one they know, if the new product has characteristics (irrelevant) that the other does not have, it will be seen as different, thus less representative, leading consumers to generate less extreme judgments. Another good

example of this explanation was given in a study carried by Nisbett et al. (1981) in which subjects considered a man with a drinking problem and two fingers missing on his left hand less representative of the stereotypical child abuser than a man with a drinking problem only. Therefore, even though the fingers missing on one of his hands was irrelevant, it made the subject less representative.

2.1.4. Biased Hypothesis Testing

One last and more recent explanation that helps understanding the dilution effect even when the other theories seem not to hold is called biased hypothesis testing. It argues that people often consider the implications of evidence for the focal hypothesis but ignore the implications of the evidence for the alternative hypothesis (e.g., Trope and Liberman 1996). Fischhoff and Beyth-Marom (1983) suggest that, “by selectively focusing on a single hypothesis, people may decrease their confidence in the hypothesis when encountering unlikely irrelevant information”.

Meyvis and Janiszewski (2002) argue that consumers will selectively search for information that suggests that the product will deliver the benefit, and that they will classify product information with respect to this goal search in two possible ways: (1) when information is classified as confirming, it strengthens consumers’ beliefs that the product will deliver the benefit; (2) when information is classified as not confirming, it weakens consumers’ beliefs that the product will deliver the benefit. In addition, when consumers encounter irrelevant information, they classify it as not confirming, thus weakening their belief in the product’s ability to deliver the desired benefit, without taking into account that the information does not confirm the alternative hypothesis either.

2.2. The Concept of Expertise and the Dilution Effect

As it was shown earlier in this project, several efforts have been made to explain the dilution effect and some studies have examined the interaction between expertise and dilution. Still, most of these studies do not include evaluations of products by consumers nor the interaction with different types of information, which are the main objectives of this project.

Intuitively, one would expect that as the level of expertise of a person in a certain area increases, the dilution effect decreases since experts will know what is relevant and irrelevant for taking a decision. This conclusion was supported by Shelton (1999) in a study regarding audit tasks. Shelton divided participants in her study into experts (3 or more years in an auditing function) and novices (less than 3 years in an auditing function) and provided the same material to both groups, in order for them to perform an audit task. The data provided was composed by relevant and irrelevant financial information. Participants in the high expertise condition were not only less subject to dilution than novices but they also seemed to be shielded against the effects of irrelevant information. The same researcher attempted possible explanations for this: “Findings in psychology indicate that highly developed knowledge structures are acquired through experience. Such knowledge structures could enable experienced decision makers to focus on relevant information. This implies that the dilution effects observed in prior studies may have been weaker had judgments been made by more-experienced subjects”. Similarly, Lesgold et al. (1988) argue that experts are able to tune their perceptions of critical areas to specific cases and discount irrelevant information which novices use in their decisions. The same authors and Shanteau (1993) go even further in their conclusions and provide evidence confirming that

experts tend to ignore irrelevant information while novices seem unable to do so even when the irrelevancy of the information is recognized prior to making the decision.

Despite being a topic somewhat studied, it is still of use to assess whether experts are in fact less subject than novices to the dilution effect when the category is product-related. Still, the major contribution that this study proposes is not the simple relationship of expertise and dilution but the interaction of expertise, the type of information (abstraction) and dilution, as it will be mentioned in the following section.

2.3. The Concept of Abstraction and the Dilution Effect

Following from the literature on the dilution effect, there is evidence that irrelevant information does in fact influence consumers' opinions. However, different types of irrelevant information may lead to different results. What is the impact of the level of abstraction of irrelevant information on consumers' judgments of products?

Many products have differentiating features with benefits that are unclear to consumers. Despite uncertainty surrounding the benefits of ambiguous features, several researchers observe that consumers may incorporate these features into their decision-making (e.g., Bronziarczyk and Gershoff 1997; Brown and Carpenter 2000; Carpenter, Glazer and Nakamoto 1994; Meyvis and Janiszewski 2002; Mukherjee and Hoyer 2001). As it was said earlier in this study, abstract attributes of an object derive from concrete attribute information. In other words, the concrete attributes are directly associated with an object and can be classified as a subcategory of abstract information. The abstract-concrete distinction is similar to the superordinate-basic level distinction drawn in the categorization literature (Mervis and Rosch 1981; Rosch et al. 1976). "Basic level attributes are those that are naturally associated with the stimulus object (e.g., taste and carbonation for soft drinks), whereas superordinate attributes are more

general or inconclusive attributes that subsume the basic level attribute (e.g., fun, enjoyment)” (Bettman and Sujan 1987). Following the same line of reasoning, “French-cut” green beans was used by Miljkovic, Gong and Lehrke (2009) as an example of food product related trivial attributes that do not reveal any useful information about the product. What I propose here is that abstract product attributes share a similar connotation with ambiguous/difficult to evaluate product attributes.

Marketing experts (e.g., Aaker 1991; Porter 1985) have extensively documented their opinions and studies about product differentiation and the major conclusion drawn is that only attributes that are relevant, meaningful and valuable generate successful product differentiation (Carpenter, Glazer and Nakamoto 1994). However, there is evidence that using trivial but ambiguous attributes may also generate successful product differentiation. For instance, Hoch and Ha (1986) observed that a nondiagnostic, ambiguous product experience can increase the perceived quality of an advertised brand. Similarly, Carpenter Glazer and Nakamoto (1994) reported that a brand with a distinguishing but irrelevant attribute received a higher preference rating than the same brand without the attribute. The same authors defend that trivial attributes affect choice through their uniqueness in the choice set. In other words, by having an attribute that is different from the ones used by competitors, it is argued that successful differentiation occurs since it makes a brand unique relatively to others. Studies of causal inference by Einhorn and Hogarth (1986) support the theory that the uniqueness of the irrelevant attributes can lead to positive valuations of the differentiated brand. In addition to these researchers, McGill (1989) also shows that causality is attributed more often to distinctive rather than common attributes, suggesting that buyers may infer that the irrelevant attribute actually causes the product to perform better.

This project proposes that despite being irrelevant, there will be a difference in consumers' judgments of products when the level of abstraction of the attributes changes. As it was stated earlier in this section, the prediction is that abstract irrelevant information, in the context of dilution studies, will have results consistent with the ones found in studies about ambiguous product attributes. The literature has shown that attributes that are abstract, ambiguous and vague (e.g., "Easy to use microwave", "Funny recorder", and so on) can strengthen consumers' judgments of products because the value that they bring is uncertain. Thus, they tend to believe it is actually better. Contrarily, as the irrelevant attributes become more concrete, consumers will be able to identify and classify the information as irrelevant but dilution will occur. In addition, as it was stated in the previous section, consumers with high levels of expertise are not expected to be as influenced by irrelevant information as consumers with low levels of expertise, regardless of the level of abstraction of the information displayed. As a result, I hypothesize that:

H1: *When evaluating a product's ability to deliver a desired benefit, expert consumers will be less influenced by irrelevant information than novice consumers, regardless of the level of abstraction of the information.*

H2: *If a brand adds irrelevant pieces of information or attributes to a product that are abstract and vague, novice consumers' beliefs that the product will deliver the benefit will be strengthened.*

H3: *Analogously, if a brand adds irrelevant pieces of information or attributes to a product that are concrete, novice consumers' beliefs of a product's ability to deliver a desired benefit will be diluted.*

3. Experiment

This experiment has two main objectives: (1) evaluate whether experts are less subject (or not) than novices to the influence of irrelevant information when judging products and (2) study how the level of abstractness relates to the dilution effect for novices and experts.

3.1. Method

Subjects and Design

Subjects were 60 randomly selected participants from both genders and various professional occupations that agreed to answer to some questions to help collecting data for a master thesis.

The design was a 3 (type of information) x 8 (product replicates) x 2 (expert/novice consumer) mixed design. Each subject was presented with descriptions of products from two categories: (1) snowboarding and (2) consumer goods for body care. In total, each subject received a description of eight products, four from each category. For each of the product replicates, subjects were randomly assigned to either the baseline condition or the other two treatment conditions. Finally, all subjects filled out an expertise scale for the two categories.

Procedure

The entire experiment was conducted online. Subjects were informed that they would receive information about eight different products and that they would have to indicate whether the product would deliver a particular benefit. Subjects were told that the information they would receive “may or may not be helpful for the decision that you have to make”. Subjects were then informed of the desired benefit for the first product

(e.g., “You are looking for toothpaste that fights cavities”). Below this sentence, there was the first piece of information, which was always the supportive attribute (e.g., “The majority of dentists recommend it”). In the baseline condition, subjects did not receive any additional product information. However, in the first treatment condition, the supportive information was presented simultaneously with three additional pieces of abstract irrelevant information (e.g., “Provides alpine freshness”, “Exotic flavor”, “Excellent durability”). Similarly, in the second treatment condition, the supportive information was presented simultaneously with three pieces of concrete irrelevant information (e.g., “Composed by 70% of mint leaves”, “Composed by 40% of Citrinus”, “Comes in 40cl tubes”). Afterwards, subjects were asked to indicate their belief that the product would deliver the benefit (e.g., “Does this toothpaste fight cavities?”). Responses were made on a nine-point scale anchored by 1 = “Definitely does NOT fight cavities” and 9 = “Definitely does fight cavities”. The subjects then received the remaining seven replicates.

To measure expertise, I followed a similar approach to the one used by Sujana (1985), in which he measured expertise about photographic cameras by having participants complete a 15-question multiple choice test to measure objective knowledge about cameras. Since it would be difficult to have a 15-question multiple choice test for each product, I selected eight products that belong to two categories: (1) four snowboarding products and (2) four consumer goods for body care.

Finally, when product evaluations were completed, subjects were asked to complete two 15-question multiple choice tests, one about the snowboarding sport (e.g., “A regular snowboarder is...”, “The main snowboarding styles are...”, “A grind 50/50 is...”) and the other about consumer goods for body care (e.g., “To avoid skin irritation

it is recommended to use lotions with...”, “Shea butter is especially useful for...”, “An exfoliating cream is...”), in order to assess who were the experts and novices in each product category. Participants whose score to each test was below and above the median were considered novices and experts, respectively. For a complete version of the two expertise tests, please see appendices 1 and 2.

Stimuli

I first selected eight products from two product categories and corresponding desired benefits. Snowboarding products and corresponding desired benefits: boots (comfortable), board (easy to maneuver), bindings (easy to strap), goggles (anti-fog). Consumer goods for body care and corresponding desired benefits: toothpaste (fights cavities), shower gel (anti skin irritation), shampoo (anti-dandruff), lotion (rejuvenates the skin). Following a similar approach to the one used by Meyvis and Janiszewski (2002), a pretest (n = 31) was conducted to select three irrelevant attributes and one supportive attribute for each replicate. The pretest listed a wide range of facts for each product. Subjects were asked to allocate these facts to one of three categories: “suggests [benefit]”, “suggests not [benefit]”, “is not helpful for my decision”. The 48 irrelevant facts selected for the experiment were classified as “not helpful” by an average of 88% of pretest subjects, as supportive of the benefit by 9% of the subjects, and as counterdiagnostic by 3% of the subjects. The irrelevant information included mainly package information (e.g., toothpaste that comes in 30cl tubes) and product attributes (e.g., snowboard goggles that can be ordered online). The eight supportive facts were classified as suggesting the benefit by an average of 92% of pretest subjects.

A second pretest was conducted to examine the possibility that the facts judged as irrelevant in isolation were judged as relevant in the context of the complete product

description. Thirty one subjects were presented with the full product descriptions and asked to indicate the relevance of each piece of information. The 48 irrelevant facts were classified as nondiagnostic by an average of 86% of the subjects, as diagnostic of the benefit by 9% of the subjects, and as counterdiagnostic by 5% of the subjects.

A third pretest examined the possibility that even though subjects indicated that the irrelevant facts are not diagnostic, they may still use these facts to make inferences about the desired benefit. For example, although a subject may classify a fact as irrelevant, the fact may still be informative because it is positively or negatively correlated with unstated facts that are relevant. To examine the possible direction of such an effect, 20 subjects were presented with the irrelevant facts and were asked to rate them on a six-point scale (ranging from 1 = “Will probably not [deliver the benefit]” to 6 = “Will probably [deliver the benefit]”), thus forcing them to classify the information as either diagnostic or counterdiagnostic. The abstract irrelevant facts were classified as diagnostic by an average of 41% of the subjects and as counterdiagnostic by an average of 59% of the subjects. The average rating for the abstract irrelevant facts was 3.05, which was significantly lower than 3.50, the midpoint of the scale ($t(480) = -4.23, p < 0.01$). Thus, if the abstract irrelevant information would indeed lead to inferences about the benefit, these inferences would not support subjects’ beliefs in the product benefit. The concrete irrelevant facts were classified as diagnostic of the benefit by an average of 50% of the subjects and as counterdiagnostic by an average of 50% of the subjects. The average rating for the concrete irrelevant facts was 3.29, which is slightly lower than 3.50 ($t(480) = -2.13, p = 0.033$). Thus, even though the difference is very small, if the concrete irrelevant information would indeed lead to inferences about

the benefit, there is a slight tendency not to support subjects' beliefs in the product benefit.

In a final pretest, thirty subjects were asked to state whether each of the selected 48 irrelevant facts were abstract or concrete. Subjects were presented with the attributes and classified them into to one of two categories: "This attribute is abstract" or "This attribute is concrete". The abstract irrelevant attributes were classified as abstract by an average of 89% of the subjects and as concrete by an average of 11% of the subjects. Similarly, the concrete irrelevant attributes were classified as concrete by an average of 87% of the subjects and as abstract by 13% of the subjects.

3.2. Results

It was expected that the addition of irrelevant information would generate stronger effects in the beliefs in the product benefit for novices (low expertise) than for experts (high expertise).

Table 1: Summary of the average rating per condition

	Relevant	Relevant + Abstract Irrelevant	Relevant + Concrete Irrelevant
Novice (low expertise)	5,61	6,38	4,93
Expert (high expertise)	5,78	5,69	5,95

The results confirmed what was predicted by H1, that experts are less influenced by irrelevant information than novices. Looking at the lower row in the table above, it is

possible to confirm that expert consumers showed small variations in both treatment conditions relatively to the “Relevant” condition ($\Delta -0.09$ in the “Relevant + Abstract Irrelevant” condition and $\Delta +0.34$ in the “Relevant + Concrete Irrelevant” condition). The average expert ratings in the 3 conditions are statistically non-significant ($t(160) = 0.34, p = 0.74$; $t(160) = 0.96, p = 0.34$; $t(160) = 0.68, p = 0.5$)¹. On the contrary, the upper row of the same table shows that there are differences in the average novice rating in the 3 conditions ($t(160) = -2.67, p < 0.01$; $t(160) = -5.12, p < 0.01$; $t(160) = -2.37, p = 0.02$).

Regarding H2, which predicted that novice consumers’ beliefs in product benefit would be strengthened when abstract product information was added to relevant information, results also confirmed what was proposed by the theory. The average variations for consumers with low expertise were significantly higher, with a variation of $\Delta +0.77$ in the “Relevant + Abstract Irrelevant” condition and average variations of $\Delta -0.68$ in the “Relevant + Concrete Irrelevant” condition. Supporting these results, the average rating from novice consumers in the “Relevant + Abstract Irrelevant” condition ($M_{Novice Abstract} = 6.38$) was higher than the average rating from novice consumers in the “Relevant” condition ($M_{Novice Relevant} = 5.61$), a difference that is statistically relevant ($t(160) = -2.67, p < 0.01$).

Finally, in what concerns H3, the results also confirmed what was proposed by the theory. It was suggested that concrete irrelevant information, when added to relevant information, would dilute novice consumers’ beliefs in the product benefit and this prediction was confirmed. The average rating in the “Relevant + Concrete Irrelevant” condition ($M_{Novice Concrete} = 4.93$) was lower than the average rating in the “Relevant”

¹ The first test corresponds to the comparison between the average rating in the “Relevant” and the “Relevant + Abstract Irrelevant” conditions. The subsequent tests correspond to all combinations of average ratings within the lower row of the table above.

condition ($M_{Novice\ Relevant} = 5.61$), which is statistically significant ($t(160) = -2.37$, $p = 0.02$).

Interestingly enough, there is also a statistically significant difference between the average rating from novice and expert consumers in both conditions when compared to one another ($t(160) = 2.42$, $p = 0.02$). In the “Relevant + Abstract Irrelevant” condition, consumers with low expertise are positively influenced when the abstraction level is higher ($M_{Novice\ Abstract} = 6.38$), compared to consumers with high levels of expertise receiving the same information ($M_{Expert\ Abstract} = 5.69$). Contrarily, in the “Relevant + Concrete Irrelevant” condition, the average rating from novice consumers ($M_{Novice\ Concrete} = 4.93$) is statistically lower ($t(160) = 2.14$, $p < 0.01$) than the average rating from expert consumers ($M_{Expert\ Concrete} = 5.95$).

3.3. Discussion

Research on social judgment suggests that irrelevant information does have an impact on consumers’ product perceptions. The main argument is that irrelevant information weakens consumers’ beliefs in the product benefit. This study examined the effects of abstraction and expertise on dilution.

This study suggests that irrelevant information does in fact influence consumers’ product perceptions when their knowledge of the product category is low, but not when it is high. When consumers are considered experts in a product category, are knowledgeable about it and/or have used this type of products in the past, irrelevant information does not appear to influence their opinion of products, they are not affected.

Contrarily, when consumers were not familiar with the product category, have never used a product before or knew very little about it, irrelevant information did play

a role in their perception of products. Even more interesting than the fact that the group of participants classified as novices was more influenced than the group of experts, is the direction of the effects. When irrelevant information with higher levels of abstraction was added to relevant product information, subjects' perception of products improved substantially. Contrarily, adding irrelevant information with lower levels of abstraction (concrete irrelevant product information) revealed the exact opposite effect on consumers with little knowledge of a product category.

One possible explanation for this is that consumers with no experience in a product category tend to be positively influenced when they do not know the true value of the information and as the attributes become easier for them to evaluate and understand, they are able to classify them as irrelevant. Still, they are not able to discard them; novice consumers fall in the "trap" called the dilution effect.

4. Conclusion

In this project I examined how the level of expertise in a product category and how the level of abstraction of irrelevant product information affect consumers' perception of products. I conclude that when a consumer is an expert in a certain area, he/she will not be influenced by irrelevant information of any type. Contrarily, when a consumer is not an expert in a certain area he/she will be affected by irrelevant information. What this study suggests is that the direction of the effects will depend on the level of abstraction of the irrelevant information. When irrelevant information is more abstract, it will positively influence consumers' perception of products but when the irrelevant information is more concrete, the products' ability to deliver the desired benefits will be considered less extreme by consumers, meaning that the "classic" dilution effect will occur.

It is common for brands to change their communication programs according to the type of target consumers they are trying to reach and this study draws conclusions that brands may adopt. If by any reason a brand is not certain of the amount or type of information to display when communicating a product, in a campaign or in the product packaging, this study suggests that more abstract and vague information will generate better perceptions by consumers, when their knowledge about the product category is little. *Ceteris paribus*, using information easy to evaluate and more concrete may produce the exact opposite effect to the one intended when setting up a communication program. In other words, instead of displaying more information in order that consumers generate more favorable judgments of a product or brand, consumers will show the opposite action, their judgments that a product will deliver a desired benefit will be mitigated.

5. Limitations and Future Research

There are some areas in this project that could be improved in the future. The difference between an expert and a novice consumer can be considered as non-rigorous since there is the possibility that some of the respondents that were classified as experts did “pass the test” by pure luck.

Only two product categories were used, leaving some uncertainty if the conclusions are still valid and hold in other product categories and services.

In addition to exploring other products and services, as the level of abstraction suggested some influence, there may be many more divisions that can be made in the type of information variable that may provide further insights and allow a better understanding of the effects of irrelevant information.

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7. Appendices

Appendix 1: Snowboarding Expertise Test

Em seguida estarão 15 perguntas de escolha múltipla sobre Snowboard e a ideia é responderes o melhor que souberes.

<p>1) Um “air to fakie” é...:</p> <p>a) Um tipo de prancha de Snowboard b) Um tipo de botas de Snowboard c) Uma manobra d) Andar com o pé contrário à frente</p>	<p>2) Os principais estilos de Snowboard são...:</p> <p>a) Freestyle, carving, switching e free ride b) Free ride e carving c) Freestyle, free ride e carving d) Freestyle and free ride, carving e splitboarding</p>
<p>3) Um Snowboarder Regular é geramlente usado para designar...:</p> <p>a) Alguém que prefere andar com o pé esquerdo à frente b) Alguém que faz Snowboard regularmente c) Alguém que prefere andar com o pé direito à frente d) Alguém que anda sem cometer praticamente nenhum erro ou que raramente cai</p>	<p>4) Um Grind 50/50 é...:</p> <p>a) O melhor capacete inventado até hoje e que cumpre todos os 50 parâmetros de segurança b) Um estilo de snowboard c) Um salto em que só se cumpre metade do obstáculo d) Uma manobra que se salta para cima numa caixa ou corrimão e se vai sempre em frente</p>
<p>5) Snowboarders inexperientes devem usar pranchas...:</p> <p>a) Menos flexíveis para fazerem movimentos mais correctos b) Mais flexíveis para ser mais fácil executar movimentos c) Mais flexíveis e compridas para obrigar a curvas mais largas e menos repentinas d) Mais flexíveis e mais curtas</p>	<p>6) Uma prancha para Freestyle é...:</p> <p>a) Composta por um Twin Tip b) Maior do que a de Freeride para maior controlo nos saltos c) Menos flexível que a de Freeride para aguentar o impacto nas caixas e corrimões d) Mais estreita que a de Freeride</p>
<p>7) O tipo de botas de snowboard mais utilizadas são as...:</p> <p>a) Soft Boots b) Hard boots c) Step-In Boots d) Maneuver Boots</p>	<p>8) Flow-In é um tipo de...:</p> <p>a) Fixações b) Manobra que se pode efectuar numa caixa c) Casaco que liga às calças para oferecer maior protecção da neve e frio d) Máscara para condições climáticas extremas</p>
<p>9) Na montanha, a prioridade é sempre de quem...:</p> <p>a) Vem da direita b) Vem da esquerda c) Vai atrás d) Vai à frente</p>	<p>10) A posição dos pés recomendada para um freestyler é...:</p> <p>a) Abertos como os ponteiros de um relógio às “10 para as duas” b) O pé da frente está mais aberto que o de trás c) O pé de trás está mais aberto que o da frente d) Os dois pés virados para a frente da prancha</p>
<p>11) Andar em Fakie é...:</p> <p>a) Andar sempre em frente b) Fazer curvas muito rápidas sem derrapar c) O mesmo que andar em switch d) Andar com o menor contacto possível da prancha com a neve</p>	<p>12) Quando se vai para o Snowpark, é recomendado levar as fixações...:</p> <p>a) Ligeiramente mais apertadas para a prancha responder aos pequenos movimentos b) Ligeiramente menos apertadas para maior liberdade dos pés c) Step In d) Lock In</p>

<p>13) Burton é...:</p> <ul style="list-style-type: none"> a) Uma marca de material de Snowboard b) Um forfait especial só para o Snowpark c) Uma manobra de Snowboard efectuada num corrimão d) Nenhuma das outras respostas 	<p>14) Para andar mais depressa é preciso...:</p> <ul style="list-style-type: none"> a) Usar botas mais leves b) Ter a prancha encerada c) Ter a prancha limpa com um detergente específico d) Ter um peso mais leve
<p>15) Andar apenas com o Nose ou Tail da prancha em contacto com a neve é um truque chamado...:</p> <ul style="list-style-type: none"> a) Ollie b) Air to Fakie c) 50/50 Grind d) Wheelies 	

Appendix 2: Consumer Goods Expertise Test

Em seguida estarão 15 perguntas de escolha múltipla sobre produtos para o corpo e a ideia é responderes o melhor que souberes.

<p>1) Pseudofoliculite é também conhecida por...: a) Vitamina que alisa o cabelo b) Vitamina que hidrata a pele c) Pêlos encravados d) Um tratamento para a pele</p>	<p>2) Para evitar irritação da pele é recomendado usar cremes...: a) Com extractos de Kiwi b) Com ph baixo c) Com um teor de álcool mais elevado d) Com ph neutro</p>
<p>3) Uma pele oleosa também significa que...: a) A pele está desidratada b) A pele está hidratada c) Há maior propensão a ter cabelo oleoso d) Nenhuma das restantes respostas está certa</p>	<p>4) Palmolive é uma marca que pertence à...: a) Unilever b) Procter & Gamble c) Colgate d) L’Oreal</p>
<p>5) Um creme esfoliante é...: a) Um creme que limpa as impurezas e células mortas da pele b) Um creme que, quando aplicado antes do Verão, permite um bronzado mais duradouro c) Um creme amaciador para o cabelo para aplicar após o banho d) Um creme que ajuda a eliminar a celulite</p>	<p>6) A manteiga de Karité é especialmente útil...: a) Em casos de queimaduras solares e alergias causadas pelo sol b) Para combater a caspa c) Quando se quer dar volume ao cabelo d) Para potenciar o bronzado</p>
<p>7) Para evitar cortes na pele, deve fazer-se a barba...: a) Antes do banho pois a pele está mais dura e menos susceptível a cortes b) Ao acordar pois a pele está relaxada do sono c) Antes de ir dormir para poder descansar durante o sono d) Depois do banho</p>	<p>8) O flúor de uma pasta de dentes...: a) Actua como agente branqueador b) Não pode ser ingerido em grandes quantidades pois pode matar c) Acumula-se nas gengivas, dando-lhes uma maior resistência d) Não tem qualquer efeito, é apenas uma invenção das marcas dentífricas</p>
<p>9) Usar um creme protector solar com SPF 50 significa que...: a) A pele só ficará queimada quando tiver sido exposta a uma quantidade de energia solar 50 vezes superior à quantidade de energia solar que normalmente a queimaria b) Temos de repor uma nova camada de creme a cada 50 minutos c) O creme tem quantidade suficiente para 50 pessoas de estatura média d) A pele começa a ficar queimada passados 50 minutos da sua aplicação</p>	<p>10) Em termos concretos, uma pele fica bronzeada...: a) Porque não temos cuidado suficiente com a pele b) Porque geralmente o gel de banho que usamos tem um químico que escurece a pele quando esta entra em contacto com a radiação ultravioleta c) Porque existe um aumento ou libertação do pigmento melanina (que é castanho) dentro das células da pele horas após a exposição à radiação ultravioleta d) Sempre que apanha radiações ultravioleta</p>
<p>11) O óleo de lavanda é conhecido pelas suas propriedades...: a) Energéticas b) Bronzeadoras c) Facilitadoras no desaparecimento de celulite d) Relaxantes</p>	<p>12) “Crest” é uma marca de: a) Shampoos e amaciadores b) Protectores solares c) Produtos de higiene dentária d) Produtos para a pele</p>

<p>13) “É importante que o creme protector solar não tenha álcool”...:</p> <p>a) Porque o álcool actua como factor atenuante do bronzeado</p> <p>b) Porque quando o álcool entre em contacto com a radiação ultravioleta, aumenta o perigo de sofrermos queimaduras graves na pele</p> <p>c) Porque o álcool dá um tom mais cinzento à pele</p> <p>d) Nenhuma das respostas anteriores está certa</p>	<p>14) “Um estado descamativo do couro cabeludo que ocorre como consequência de uma reprodução anormalmente acelerada das células do couro cabeludo”:</p> <p>a) É a definição de caspa</p> <p>b) Acontece quando lavamos o cabelo em demasiadas vezes por dia</p> <p>c) É a definição de piolhos</p> <p>d) Nenhuma das restantes respostas está certa</p>
<p>15) Para manter o cabelo no estado mais saudável possível, devemos lavá-lo...:</p> <p>a) 1 vez por semana</p> <p>b) 3 vezes por semana</p> <p>c) Todos os dias</p> <p>d) 5 vezes por semana</p>	