

# **Design and Marketing Positioning: The Contribution of Implicit Cognition**

Imène Belboula, Claire-Lise Ackermann, Jean-Pierre Mathieu (University of Blida 2, Algeria)

**Abstract:** One of the main problems faced by marketers is the divergence between desired positioning and perceived positioning. While the former is based on the objectives of the company, the second is partly dependent on the perception of design by consumers. Positioning perception induced by product design is most of the time *implicit*; i.e., stemming from an automatic and unconscious cognitive process. We use implicit social cognition as a theoretical and methodological framework to measure the impact of product design on perceived positioning. Research implication and managerial applications are discussed.

**Key words:** design; positioning; implicit cognition; semantic priming **JEL code:** M3

# **1. Introduction**

A poorly perceived positioning is the main cause of failure of marketing strategies (Windal, 1990). The current competitive environment is cluttered, it creates a confusion and difficulties for practitioners and consumers to take good decisions. In this context, product positioning through the design is a strategic response to the clutter that offers a credible, attractive and different position to the product in the consumers' minds (Ries & Trout, 1986). Design as a creative vector incorporates many elements (functional, aesthetic, ergonomic, cultural, etc ...) to build a semantically coherent form (Pierce, 1978) in the environment, and allows the company to stand in a cluttered environment (Kreuzbauer & Malter, 2005). We define the positioning through design as the selection of attributes to guide consumer perception in the sense intended by the marketer.

In addition, we are now witnessing a reconsideration of traditional measurement methods in marketing (Trendelenburg & Warlop, 2005). Thus, the perception of positioning is mostly measured using direct and explicit measures, ignoring the implicit impact of design. However, studies have shown that consumer choices are not all deliberate, and that their response to a survey question is sometimes opposites to their behavior (Trendel & Warlop, 2005; Ackermann, Mathieu & Fort Rioche, 2012; Ackermann & Mathieu, 2013). The explicit methods have shown their limitations including the inability to fully understand consumer behavior. In particular, they do not include the implicit contribution of design. The evaluation process is not always conscious and controlled; it is iterative, based on two processing loops. The first concerns the automatic processing loop, the second concerns the controlled treatment (Cunningham & Zelazo, 2007). In this perspective, the perception of product positioning

**Corresponding Author:** Imène Belboula, Ph.D. Student in Marketing, University Teaching Assistant, ESC Algiers, Faculty of Economic Sciences and Management, University of Blida 2; research areas/interests: design, innovation, consumer behavior, implicit cognition. E-mail: imenebel@yahoo.fr.

Claire-Lise Ackermann, Assistant Professor, ESC Rennes School of Business; E-mail: claire-lise.ackermann@esc-rennes.fr. Jean-Pierre Mathieu, Professor, CEPN-CNRS Paris13 University; E-mail: jean-pierre.mathieu@univ-paris13.fr.

in the consumer design should be considered as the result of an automatic evaluative processing (default position) and controlled (explicit positioning). Implicit cognition allows an assessment of wider than explicit measures perceptions and helps practitioners to determine the unconscious aspects of the evaluative process (Nosek, 2007). Fazio and Olson (2003) define these implicit measures as indirect measures, which do not require self-reported response, nor inform the topics being measured.

Our research will be focused on demonstrating how the use of implicit methods expands our understanding of consumer perception of the product design. In the first part, we show the theoretical framework-product design and implicit social cognition-and introduce our research hypotheses. We will present in the second part the experiment conducted in the laboratory on a consumer product and results. We conclude with a discussion of results and academic and managerial implications of our research.

## 2. Conceptual Framework, Literature Review and Research Hypotheses

### 2.1 Product Design

Product design contributes in the strategy to differentiate the offer (Kotler & Rath, 1984; Olson, Slater & Cooper, 1998; Verganti, 2006) and as factor of anticipation and innovation (Talke et al., 2009; Verganti, 2008; Veryzer, 2005). It permits to create a competitive advantage in the market (Bloch, 1995), it attracts the attention of consumers, including the form (Bloch, 1995; Mathieu, 2006), it produces more or less positive emotions (Veryzer 1993; Bloch, 1995; Desmet, 2002), and it reinforces the perceived quality of a product. It is an element of product identification, that facilitates in this manner its categorization, it allows you to edit and enhance an existing belief, or create a new belief. Thus, the product design can be an element that enriches the positioning of a product or a brand in a market (Kreuzbauer & Malter, 2005).

In this sense, the attractiveness of a product is also a result of harmonizing the elements of design (shape, color), and the interaction between the product and the user (consumer) to improve the perception of beliefs or benefits particularly functional (Mugge & Schoormans, 2012). Moreover, the experiential paradigm is taking an increasing importance (Evrard & Benavent, 2002). Thus, the value of a product surpasses the utilitarian aspect to take into account the aesthetic and symbolic dimensions (Mathwick, Milhotr & Rigdon, 2001), which comes from the harmonization of its attributes.

### 2.2 Implicit Cognition

Up to know a little known by researchers in consumer behavior, the implicit cognition is a current major research in social psychology: in response to the fact that the human mind cannot be reduced to a set of conscious processes, Greenwald and Banaji (1995) developed a theory that there is a conceptual distinction between assessments from an introspective effort called explicit attitudes, and automatic evaluations, where the individual may not be aware, and it is called implicit attitudes; in parallel tools were also developed-new implicit measures–permitting to measure associative and automatic evaluations without the individual need to provide an introspective effort (Nosek & Smyth, 2007), brought new perspectives marketing research.

Among the implicit measures, the Implicit Association Test or IAT (Greenwald, McGhee & Schwartz, 1998) and the test of semantic priming are the most widely used (Petty, Fazio & Briñol, 2009). If the IAT has already been used by marketing research (Trendel & Warlop, 2005, Ackermann, 2010, Ackermann, Mathieu & Fort Rioche, 2012; Ackermann & Mathieu, 2013), the priming test is little known in marketing. It was used for the first time in psychology by Meyer and Schvaneveldt (1971), it is an implicit assessment of semantic memory. The used

model is of the memory as of that of Collins and Loftus network (1975), it pretends that knowledge is organized in memory in the form of a network of nodes association (concepts) and arcs (relationships).

One of the most used tests to evaluate the effects of semantic priming is the lexical decision task: the subject must decide quickly whether strings of the presented letters form a word or a non-word (Neely, 1976; McNamara, 1994). The semantic priming effect occurs when the presentation of the primer has an effect on the presentation of the target: The spreading activation is based on automatic processes independent of any conscious process, the activation of a node will be spread to all the concepts that are semantically associated with it (Colins & loftus, 1975; Anderson, 1983).

#### 2.3 Research Hypotheses

The positioning through the design is a persuasive statement (Marion, 1996) which results in objective and intrinsic characteristics as well as symbolic beliefs that the consumer associates to the product. This leads us to think that beliefs are associations between design and product attributes. Thus, the perception of design is likely to make a stronger association between a belief developed by consumers and selected by the marketer design feature.

Subjectivity and selectivity of perception have the immediate consequence that the consumer will retain only some features of the product and will organize them on a comprehensive built. The School of Gestalt, including cognitivists, analyzed the processes that lead to organizational attributes (characteristics) of the product including the significant and meaningful to the consumer receiving the form.

According to the process of semantic priming introduced in cognitive psychology (Meyer & Schvaneveldt, 1971; Neely, 1976; McNamara, 1994), the perception of design should act on the evaluation process of the product and automatically activate the concepts semantically related. Therefore, this activation should lead to a shorter response in the case of a strong association between the prime stimulus (the design) and the target (attributes) in the case of a weak association. We therefore formulate the following hypothesis:

H1: There are significant differences between the response times in relation to the believes associated implicitly to the product design.

As demonstrated by previous research, the use of implicit social cognition (Trendelenburg & Warlop, 2005; Ackermann, 2013) permits to identify different associates from those identified by the explicit methods. In this way, the associations highlighted by a semantic priming test should be different from explicit associations that result from the response to a direct question. Then, we propose the following hypothesis:

H2: There are significant differences between explicit and implicit beliefs generated by the product design.

## 3. Design and Procedure

#### 3.1 Sample and the Choice of Stimuli

Taking into account the nature of the hypotheses to be tested, our research is based on a study conducted in the laboratory and a questionnaire proposed to 255 students.

For the implicit test, three photos of electric toothbrushes were selected: a picture of the electric toothbrush TriZone of the Oral B brand and two distractor pictures of other electric toothbrush with a rotating and dual head.

#### **3.2 Measuring Believes**

Eleven attributes corresponding to the functional and symbolic beliefs about the electric toothbrush were selected. The selection was made after realizing technological and semantic watch on the website of the brand Oral B, and a content analysis of the communication on the toothbrush TriZone. We retained the semantic

adjectives that are most often used to describe the toothbrush TriZone. These adjectives refer to the desired position of the company.

A total of eleven qualifiers were collected seven referring to the functional beliefs (performance, effectiveness, softeness, dynamic, reliable, simple, and good quality), and four that refer to symbolic beliefs (elegant, design, aesthetics, and sophisticated). These terms were used as words for the lexical decision task, and integrated as Likert scale on five points in the questionnaire.

### 3.3 Test Protocol Semantic Priming with Lexical Decision Task

Firstly, a fixing point appears at the center of the screen. The primer is then presented for (500 ms), then it is followed by a mask (100 ms). The mask is the target of monitoring (200 ms). The target is displayed until the participant gives his answer. The delay between the appearance of the primer and the answer is 300 ms. Figure 1 illustrates the course of a trial. Participants perform a lexical decision task of determining as quickly as possible, using two keys (1 and 2), if a series of letters presented on the screen as a word or a non-word of the French language.

The priming test consists of two blocks with 88 trials in total, including 66 sequences for the first block and 22 for the second test sequences:

(1) Distractor sequences: containing images distractive of other electric toothbrushes followed by real words and images TriZone electric toothbrush followed by a pseudo-word.

(2) Sequences tests: containing an image of the electronic toothbrush TriZone, followed by real words.



Figure 1 The Sequence of Semantic Priming

## 4. Results

# **4.1 Preliminary Treatments**

After data collection, exploratory factor analysis was implemented (Churchill, 1979), both for the beliefs (functional, symbolic) levied for the involvement and innovativeness. Finally, a confirmatory analysis (AMOS/SPSS) was used to check the structure of the scales used, they have been subject to control their reliability and convergent validity. The questionnaire consists of 5 items for purely functional beliefs, and 3 items for a symbolic dimension.

We note that the scales have good internal consistency, as Rho Jöreskog are greater than 0.8. The convergent value validity has satisfactory: in fact, the shared variance between the items and its built is greater than 50% (Rho<sub>VC</sub> (Pvc) > 0.5) according to the method of Fornell and Larcker (1981). Finally, the discriminant validity is

satisfactory because the average variance is greater than the extracted greater shared variance. Exploratory and confirmatory analyzes have validity indices and satisfactory reliability (see Table "Reliability and validity of the scales" in the appendix).

	Table 1 Means and				
Beliefs D	Design1 Means	TriZone Means	Design2 Means	F	Р
		410, 1070		5.010	0.050
Effectiveness 4	60,8364	419,1273	425,4364	5,019	0,059
Aesthetics 4	84,2182	516,4182	482,7455	0,493	0,612
Design 4	29,4545	438,4000	497,2000	1,547	0,263
Softness 5	05,8909	408,4000	398,2182	4,340	0,015
Elegant 4	28,9818	485,0000	466,3091	1,051	0,612
Performance 1	87,8909	468,4364	448,1455	20,45	0,001
Dynamic 5	38,4364	425,4182	420,1818	6,007	0,003
Quality 5	09,0727	444,4182	417,6182	4,011	0,020

## 4.2 The Results of TriZone Implicit Test

In the Table 1, we introduce the averages and standard deviations of response time (TR) of the TriZone toothbrush design, the response time is faster for the answers "Softness" (408 ms), and "effectiveness" (419 ms) than for the answers "Aesthetics" (516 ms) and "Elegant" (485 ms). We then conducted an analysis of variance of the dependent variable TR for each concept (word) with a design of electric toothbrushes with three inter-subject modalities.

Significant differences were found for the concepts of "Effectiveness" F(2,52) = 5.019, P < .05, "Softness" F(2,52) = 4.30, P < .05, "Dynamic" F(2, 52) = 6.007, P < .05, "Performance" F(2,52) = 20.45, P < .05, and "Quality" F(2,52) = 4.011, P < .05. For other concepts, we do not observe significant differences.

The results of the test showed that implicit design TriZone enhances the formation of distinct functional beliefs. More specifically, it appears that the shape of the three-zone design, unlike other forms of electric toothbrushes, appeared "softer" and "effective."Moreover, no design is significantly associated with symbolic beliefs. The H1 hypothesis is then validated.

#### 4.3 The Results of TriZone Explicit Test

Explicit test results, which reflect the controlled treatment showed that "performance", "effective", "quality" and "dynamic" are most associated with the design TriZone attributes. These results confirm the desired positioning of TriZone except "softness" concept. In this manner, only the characteristic "effective" is explicitly and implicitly associated with the design TriZone.

The explicit test results allow us to highlight four concepts explicitly associated with the TriZone toothbrush: Performance F(2,252) = 3.201, P < .05, effectiveness F(2,252) = 1.139, P < .05, quality F(2,252) = 4.011, P < .05 and Dynamic F(2,252) = 6.007, P < .05. We notice through the analysis of the results that there is a difference between implicit and explicit perception of the design of the toothbrush TriZone. This is confirmed by the two graphs below.

The graph of the implicit perception of TriZone allows us to study the semantic network that consumers associate implicitly to the design of the electric toothbrush TriZone, and quantify the strength of these associations. More specifically, only the attribute (effective) above the eleven that we tested was significantly associated with the design of the Trizone toothbrush. However, it is less associated when consumers had more time to think.

The "performance" attributes, "quality" and "dynamic" are explicitly associated, but not implicitly. Moreover, the characteristic "smooth" is implicitly associated, but could not be verbalized. Thus, implicit measures, as well as explicit measures used to highlight an inconsistency between the desired position and perceived position, and the nature of this discrepancy depends on whether the measure is explicitly or implicitly made. The H2 hypothesis is then validated.



Figure 2 Implicit vs Explicit Perception of TriZone Design

# 5. Discussion of Results, Academic and Managerial Implications

The validation of our hypotheses confirms the interest of implicit measures, especially the semantic priming lexical decision test, in evaluating the marketing positioning. They suggest that the use of a double standard, explicit and implicit, of the perception of the product design would reduce the risks associated with the poor perception of positioning.

Design, as information vector, persuasive element and interpretive key for the consumer participates in the perceptual process to collect the proceeds in the direction desired by the marketer. Therefore, the choice of design must be consistent with the desired position, so it is possible to review the form of the design of TriZone by working on other attributes in order to optimize the desired positioning.

# 6. Conclusion

By using the theoretical and methodological foundations of implicit cognition, this research demonstrates that the semantic priming test reveals associations generated by the product design not reported explicitly. Thus, the use of a double standard, implicit and explicit, allows a better assessment of the impact of design on the perception of product positioning.

From a theoretical point of view, our research complements the literature on the concept of marketing positioning and allows enrichment of the latter. In this sense, the implicit cognition can add substantial value to the position, including materializing memorial associations that consumers cannot express explicitly. Therefore, the semantic priming test lexical decision task can be used to build a semantic network around a product design.

From a managerial point of view, our results allow a better understanding by practitioners attributes based on positioning. Thus, this highlighting of key attributes should limit the risks associated with poor perception of product positioning. This research provides a better understanding of the contribution of design to product policy

and, by reducing the risks inherent in the positioning strategy.

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