

## **Implicit understanding of services logo meaning**

### **Abstract**

Service intangibility increases the level of uncertainty faced by consumers when choosing between competing services and cultivating strong brands is a way to increase customer's trust in the invisible offering of services companies. Strong brands are characterized by strong brand equity, *i.e.* a combination of brand awareness and brand associations that have a differential effect on consumers' responses to the brand offering. In services, strong equity can be built by making the invisible more tangible, *i.e.* by using as many physical elements (*e.g.* logo, staff uniform, ...) as possible. Indeed, consistent use of specific design features increases brand awareness and conveys brand meaning. Design features convey brand meaning because, through a semantic transformation process, designers transform intangible brand descriptions into value-based design features. Part of marketing management involves checking whether these value-based design features convey the intended meaning. However, although consumers' responses to design features involve both conscious and unconscious information processing, investigation of consumer understanding of design features mostly involves direct methods based on self-report. Based here upon, a method for implicitly measuring consumer automatic understanding of a service brand meaning conveyed by its logo is provided.

**Key words:** logo design, semantic transformation, Semantic Priming Task

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## 1. Introduction

Service characteristics of intangibility increase the level of uncertainty that a consumer faces when choosing between competing services (Berry, 2000; Lovelock and Gummesson, 2004). In the realm of services, building strong brands reduce uncertainty because strong brands increase customer's trust of the intangible purchase (Berry, 2000). A strong brand is characterized by strong brand equity, *i.e.* the differential effect of brand awareness and brand image on customer response to the marketing of the brand (Keller, 1993). An effective way to increase services brands equity is to make the invisible more tangible by using as many physical elements (e.g. logo, staff uniform, store atmosphere) as possible (Berry, 2000). Among the different brand physical elements, logos play a critical role in the sense that 1/ they are a critical recognition aid speeding selection of the preferred brands, and 2/ appear on online and offline advertisements, as well as on letterhead, business cards, annual reports and even on corporate giveaways that often carry nothing more than the brand logo (Klink, 2003). Research on product design has indeed demonstrated that consistent use of some specific design features will not only increase brand awareness, but also convey brand meaning (Karjalainen and Snelders, 2010). Brand meaning is conveyed by design features as the result of a process of semantic transformation, in which designers transform qualitative brand descriptions into value-based design features conveying the meaning of the brand (Karjalainen and Snelders, 2010). However, these value-based design features may fail to deliver the appropriate meaning if 1/ designers fail to embed proper meaning into the design features and 2/ consumers fail to correctly decode the meaning embedded in these design features (Karjalainen, 2007). This is why marketing management involves checking consumer understanding of the brand meaning conveyed by these design features.

However, although past research has suggested that consumers' responses to design features involve conscious and unconscious information processing (Veryzer, 1999), most methods traditionally used to evaluate logo design are direct methods based on self-report (Henderson and Cote, 1998; Klink, 2003; Klink and Athaide, 2014). Like all explicit measures, these direct measures require respondents to deliberately engage in a reflection process. However, recent research has suggested the existence of dual evaluative processes by which two cognitive systems interact to produce evaluations: one system is automatic, associative, fast and nonconscious, and the other is controlled, deliberative, slow and conscious (Van Bavel et al., 2012).

Thus, we believe that the use of explicit measures to control whether services brands logos successfully communicate brand meaning is problematic because it only involves controlled reflection processes and disregards substantial nonconscious and automatic processes. We therefore suggest that controlling for such automatic understanding requires the use of implicit measures, *i.e.* indirect measures that don't inform the subject of what is being assessed and that tap memory associations in an automatic manner (Ackermann and Mathieu, 2015).

The purpose of this article is to shed light on the relevance of an existing implicit method, the Semantic Priming Task, to the study of the understanding of service brand logos. First, we briefly review the literature on design semantics and we build on the Human Associative Model from cognitive psychology to suggest that understanding of brand logo involves conscious and unconscious information processing. Second, we analyse the limitations of self-report measures, we discuss the advantages of the use of implicit measures and we argue that a Semantic Priming Task may be highly suitable in the context of measuring implicit understanding of brand logos. We conclude with a discussion of the extent to which implicit

and explicit measures in the context of measuring service brand meaning conveyed by its logo offer complementary or contradictory results, recommendations for practitioners.

## **2. How brand meaning may be conveyed by brand logo**

### *Design and services brand*

In the context of packaged goods, brands are said to be subsequent to the product, in the sense that brands abstract themselves from the first products that made them known (Borja de Mozota, 2007). This is why product design is linked to the early stages of the history of any brand. In this context, the *product is the primary brand*, and consumers can use the product to understand the meaning of the brand (Berry, 2000).

This may be less the case with services because of services characteristic of intangibility. Services have four major characteristics: intangibility, inseparability, variability and perishability (Kotler, 2003), intangibility being the critical distinction from which other differences emerge (Bateson, 1979). Tangibility refers to the “degree to which a product can be visualized and provides a clear and concrete image before purchase” (McDougall and Snetsinger, 1990). Because of their intangibility, *i.e.* the difficulty to evaluate services prior purchase, the *company is said to be the primary brand* in the context of services (Berry, 2000). Therefore, consumers use the image of the company such as to evaluate the service offer prior purchase.

Unlike physical goods, services cannot be seen, tasted or felt before purchase, thus their intangibility increases the perception of monetary, social, or safety risks (Kotler, 2003; Lovelock and Gummesson 2004). This is why branding plays a special role in service companies. Strong brands enable customers to better visualize and understand intangible products, and thus increase customers' trust of the invisible purchase (Berry, 2000). Strong brands are the surrogates when the company offers no physical goods to touch, try on or scrutinize (Berry, 2000).

However, most services require physical goods, implying that there are few pure services (Shostack, 1977). Tangibles (appearance of physical facilities, equipment, personnel, and communication materials) have been identified as one of the key dimensions of service quality (Zeithaml, Parasuraman and Berry, 1990) and the concept of servicescape recognizes that service experiences are shaped by a built environment incorporating ambiance and design (Bitner, 1992). When it comes to services brands, the role of designers is therefore to help making the intangible tangible by being involved in developing physical facilities, staff uniforms, leaflets, visual identity systems, etc. An effective brand logo should not only be recognizable, familiar and evoking positive affect, it should also elicit brand meaning (Klink, 2003).

### *Design semantics*

Design semantics refer to how meaning is mediated by the physical features chosen by designers so the physical features will be recognized and interpreted by consumers (Henderson and Cote, 1998; Karjalainen and Snelders, 2010; Krippendorff and Butter, 1984). This is occurring through a process of semantic transformation by which designers transform qualitative attributes into design features (Karjalainen, 2007; Karjalainen and Snelders, 2010). The ability of design features to convey specific brand meaning has been demonstrated for products (Karjalainen and Snelders, 2010; Orth and Malkewitz, 2008) as well as for brand visual identity elements such as logos (Henderson and Cote, 1998; Klink, 2003; Klink and Athaide, 2014).

Through a process of semantic transformation, designers choose design characteristics (e.g. form, size, color, etc.) to convey brand meaning. It is at this stage that a first distortion, *i.e.* a

failure to encode proper brand meaning, may occur (Karjalainen, 2007). When exposed to a product or a logo, consumers have the opportunity to perceive it, *i.e.* to attribute an interpretation to the formal attributes the designers embedded in it to convey brand meaning. It is at this point that the second distortion, *i.e.* a failure to attribute meaning to design features in the way expected by the designer, may occur (Karjalainen, 2007).

#### *Towards an implicit understanding of logo meaning*

Logo design enables designers to deliver brand meaning that consumers are able to understand only if they embed features that easily evoke consensually held meaning within a culture or subculture (Henderson and Cote, 1998). Belboula et al. (in press) suggest that design of an object has a clear meaning, *i.e.* can be easily perceived and interpreted, if consumers have associations between specific design feature (*e.g.* font, form, color) and qualitative attributes stored in memory. For example, when exposed to the logo of an unknown beer brand, consumers are more able to perceive the beer as being dark, heavy and strong (in terms of taste) if the logo is large, rounded and dark (in terms of color) than if it is small, angular and light (in terms of color) (Klink, 2003). According to Belboula et al. (in press), this is because consumers have learned to associate these specific logo design features with those attributes in the category of beer. Belboula et al. (in press) build on the Human Associative Memory model (HAM, Anderson, 1983) to suggest that consumers have developed a network of memory associations between design features and attributes as the result of a learning process.

The HAM model describes human memory as a network of interconnected memory nodes. These memory nodes are basic elements that constitute a piece of information stored in a person's mind and are traces of previous learning episodes, and that activate each other in relevant contexts (Anderson, 1983). A key characteristic of the HAM model is spreading activation (Anderson and Pirolli, 1984), which refers to the flow of node activation originating from the activation of a specific node. The activation of a specific memory node primes the activation of the network of nodes to which it is connected, this priming effect occurring without the individual being aware of it. In line with the HAM model, Belboula et al. (in press) suggest that the perception of a design feature automatically activates the conceptual attributes to which it is associated in memory. This activation occurs implicitly, *i.e.* in an unintentional manner and outside of conscious awareness. As stressed by Veryzer (1999), "just as people may implicitly learn the rules of an artificial grammar and then apply them without conscious awareness, rules governing the processing...of product designs may be nonconsciously acquired and applied" (p. 503–504). Thus, market researchers should be aware of the fact that implicit mind is something consumers are not aware of although it influences their decision making, including product design evaluation (Penn, 2016). For this reason, specific protocols should be used to assess implicit semantic associations automatically activated by being visually exposed to a logo.

### **3. A method to measure implicit understanding of brand logo**

#### *Explicit versus implicit measures*

In light of the importance of consumers' correct understanding of brand meaning in the realm of services (Berry, 2000), it is critical that brand managers control whether a logo, in isolation of any other information about the services brand, enables consumers to develop an initial understanding of the brand meaning that is consistent with the brand identity. Different types of measures are available to marketers to control for the effectiveness of a logo to convey brand meaning, and include qualitative techniques (*e.g.* free elicitation, Henderson and Cote, 1998) and quantitative techniques (*e.g.* semantic differential scales, Klink, 2003; Klink and Athaide, 2014). Like all explicit measures, these qualitative and quantitative methods are

direct measures that share the typical features of self-reported measures: awareness of evaluating the product design, intention to evaluate, control over the evaluation, and deliberation in making the evaluation (Smith and Nosek, 2011). Thus, they put emphasis on cognitive processes that are accessible (automatic processes are not accessible) and are vulnerable to verbalization biases, such as positivity bias, socially desirable responding, or contextual cueing (Cunningham and Zelazo, 2007; Fazio and Olson, 2003; Gregg et al., 2013). In other words, we argue that explicit measures cannot tap whether a semantic attribute has been automatically activated in memory by exposure to a brand logo and we suggest that implicit measures may provide a more proximal estimate of how a logo automatically activates meaning than explicit measures. Implicit measures typically require participants to classify stimuli into categories, and the strength of memory associations is assessed by categorization speed. Thus, the control loop (Cunningham and Zelazo, 2007) that “prompts respondents to over-validate their responses” (Rivière et al., 2012, p. 377) in an explicit questionnaire is blocked and implicit measures thereby gain access to automatic associations in memory.

#### *Semantic priming paradigm and the lexical decision task*

A Semantic Priming Task is a lexical decision task associated with a semantic priming paradigm: participants are first primed with a stimulus and then exposed to a target, word, or pseudo-word about which they have to make a lexical decision (Meyer and Schvaneveldt, 1971). A priming effect is observed if the time needed to categorize the target stimuli is shorter when primes and target stimuli are semantically related than when they are not. The use of Semantic Priming Tasks in business research remains scarce. However, they are commonly used in research on memory as a means to explore automatic relations among concepts and their extensive use in other research fields provides support for their validity (Belboula et al., in press; Rivière et al., 2012).

We suggest, the Semantic Priming Task is highly suitable to measure the extent to which exposure to a logo conveys meaning (i.e., the extent to which exposure to a logo activates semantic nodes in memory) because it may investigate the extent to which exposure to a prime (i.e., the logo) facilitates the lexical decision, *i.e.* the categorization of attributes as words or pseudo-words. The ease with which an attribute will be recognized as a word depends on how strongly it is semantically associated in memory with some of the design features of the logo. Figure 1 illustrates the underlying mechanism, which is as follows: exposure to the logo of the brand (*i.e.*, the prime) automatically activates in memory conceptual nodes to which some specific design features of the logo are semantically associated; the activation level of these conceptual nodes is temporarily increased; the activation of these conceptual nodes facilitates the categorization as words or pseudo-words of attributes (*i.e.*, the target) that are associated with them; and the degree of facilitation induced by the initial exposure to the brand logo is the measure of the associative strength between the product design and the attributes.

A semantic Priming Task consists of distractive sequences and test sequences. The aim of the distractive sequences is to prevent participants from understanding the real purpose of the test whereas the aim of the test sequences is to measure the strength of the association between a focal stimulus and focal targets. Each sequence starts with the presentation of a stimulus (the prime), followed by the presentation of a target about which participants have to make a lexical decision.

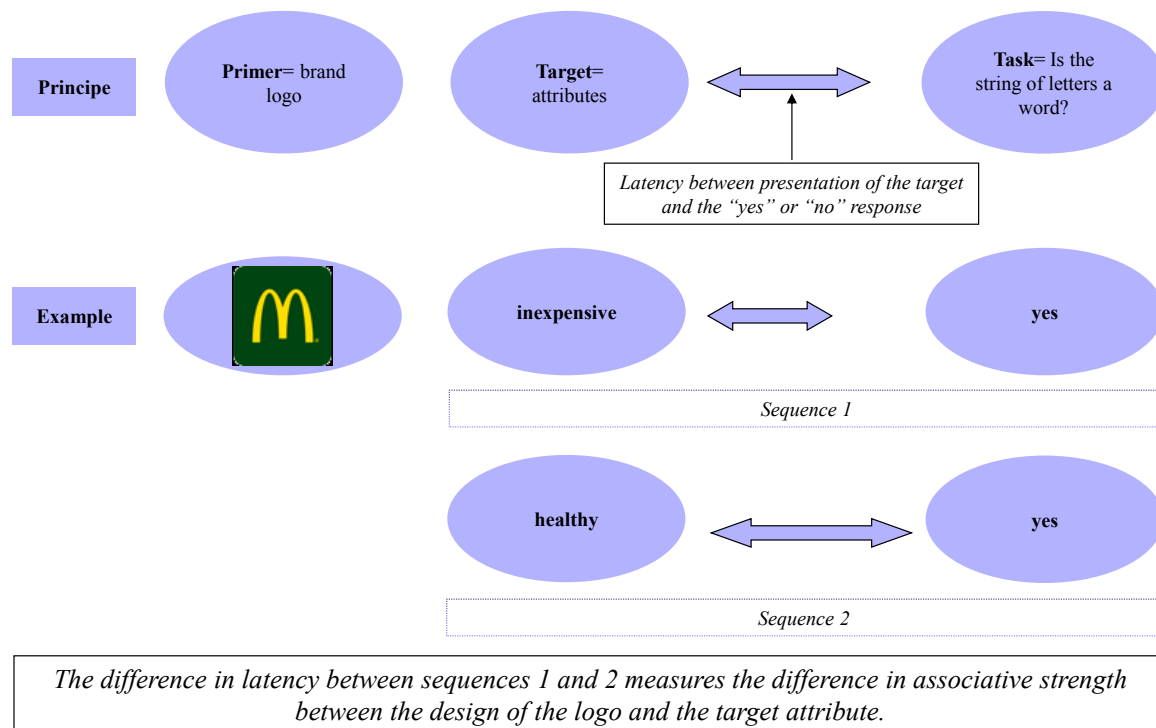


Figure 1. Response Times as a way to measure the strength of association between design features of a logo and brand attributes

Source: Adapted from Ackermann and Mathieu (2015)

*Example: A semantic priming task to assess the effectiveness of a logo to convey brand personality*

In the following section, we provide an example by describing a semantic priming task assessing the effectiveness of four different service brand logos to convey brand personality.

The primes are four different service brand logos. The pictures are of the same size and quality. Stimuli are presented on a neutral white background. The targets are 15 words and 15 pseudo-words. The 15 words are the items of the reduced Brand Personality Inventory (Aaker, 1997; Orth and Malkewitz, 2008). The 30 targets (*i.e.*, letter strings corresponding to words or pseudo-words) and the four primes (*i.e.*, service brand logos) are combined to form 120 couples (prime-targets), which combined in 60 distractive sequences (using target pseudo-words) and 60 test sequences (using target words). Each respondent reviews 120 sequences, with the presentation orders of distractive and test sequences being randomized for each participant.

Each sequence (1) starts with the presentation of a fixation point in the centre of the screen for a duration of 500 ms, (2) immediately followed by a 200 ms presentation of a service brand logo, then, (3) a 100 ms presentation of a mask composed of a row of five hash-masks (#####) is presented, and this is followed by (4) the presentation of a target letters-string that represented a word or pseudo-word. Participants have to answer as quickly as possible by pressing the "1" key if the string of letters is a real word or the "2" key if it is not. The target disappeared as soon as the participant answers. The inter-sequence interval is set to 1500 ms. Response Time (RT) is measured from the target onset until the participant's response. Figure 2 shows how a sequence is organized.

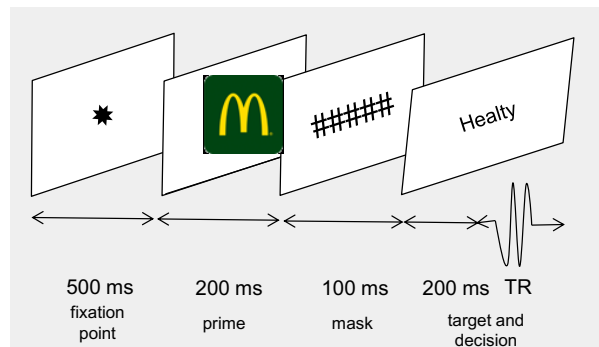


Figure 2. Semantic Priming Task: Organization of a sequence

*Source:* Adapted from Belboula et al. (in press)

Mean RT is calculated for each prime-target couple when the target is one of the 15 Brand Personality Inventory items. RT captures the logo-attribute associative strength; a shorter RT indicated stronger associations between the prime (i.e., the logo) and the target (i.e., the attribute). An attribute is suggested to be part of the service implicit brand personality if a significantly shorter RT occurs in the logo test sequence (i.e., when the respondent indicates that an brand personality item is a real word after seeing the logo) compared with the other logo test sequences (test sequence with other logos).

#### 4. Conclusion

In this paper, we argue that a Semantic Priming Task could be used in the context of building brand meaning and its materialization into a logo. We propose that (1) designers use formal codes to translate brand meaning, and (2) consumers can automatically understand brand meaning because these formal codes are associated in memory with qualitative attributes. We suggest that the results of the explicit measures traditionally used to control for consumers' understanding of brand meaning conveyed by brand logo are biased by reflection and verbalization processes. Thus, explicit measures cannot tap the associations between some specific design features and qualitative attributes that have been automatically activated by the exposure to the logo, and the sole utilization of explicit measures overlooks consumers' nonconscious processing of logos.

Our aim is not to establish the superiority of one type of measure, implicit or explicit, over the other but to show that they offer different results that are complementary. A divergence between implicit and explicit results should not be understood as contradictory, which would question the validity of one of the two measures; rather, they should be seen as complementary. Differences between explicit and implicit measures suggest that the reflection process leads respondents to "review" their automatic interpretation of product design, the "revision" process being nonconscious. As highlighted by Rivière et al. (2012), this is because the radically different structures of implicit measures versus explicit self-reported measures enable the collecting of different data related to the same topic.

Our proposition has clear implications for practitioners. We cannot but acknowledge that implementing a Semantic Priming Task, although relatively easy, remains more time consuming than developing and administering an explicit questionnaire. Some practitioners are already using adaptations of implicit tests for commercial purposes (e.g. investigation of semantic networks, Rivière et al., 2012; understanding of consumers' emotional engagement with brands, Calvert et al., 2014; exploration of brand attitudes, Gregg et al., 2013; barriers to brand usage, Penn, 2016). However, implementation of a Semantic Priming Task requires a specific expertise in the protocol development. In addition, there may be additional costs if

implicit and explicit testing have been both chosen to be used to provide complementary results. These financial and time constraints may make marketers reluctant to use implicit methods. However, we suggest that a combination of implicit and explicit measures offers a better measure of understanding of brand meaning than the measure provided by the sole use of an explicit measure. Combining implicit and explicit measures may help practitioners make decisions during the logo development process because controlling understanding brand meaning implicitly and explicitly may identify attributes that are explicitly, but not implicitly, associated to the logo and vice versa. Qualitative techniques may be used to further investigate the nature of this apparent “conflict”. We believe this is all the more so important in the realm of services brand as service characteristics of intangibility increases the level of uncertainty faced by consumers when evaluating and choosing between different service alternatives.



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