The Effects of LOGO Design Elements on Consumers' Immediate Emotional and Cognitive Reactions and Resulting Brand Attitudes and Perceptions

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ABSTRACT

The Effects of Logo Design Elements on Consumers' Immediate Emotional and Cognitive Reactions and Resulting Brand Perceptions and Attitudes

Stephanie Filteau

Consumers' emotional and cognitive responses to an unknown brand's logo are analyzed using Albert and Mehrabian's PAD emotional states model (1974) as well as by measuring thought count and valence at initial exposure. This research attempts to find out whether or not viewing an unknown logo for the first time affects brand attitude and perception depending on the design elements of the logo presented. The individual's need for cognition and aesthetic sensitivity levels are also included in the research to view their effects on the responses and ultimately perceptions of the brand at first exposure. The logos presented to consumers are created for the sole purpose of this research to insure non-familiarity of the brand. Experts also explain their involvement and thoughts in the creation process and how they believe consumer perceptions are crafted as a result of their work. The conclusions that arise from the consumer results and expert interviews help provide further clarity not only on concerns that are definitely interesting to pursue in future literary work; they also help professionals shed light on what should be done to help ensure that the brands created attract the right consumers at first exposure.

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1. INTRODUCTION

Human emotions are one of the most complex topics to ever be researched in fields such as psychology as they impact everyone in everything they do; emotional states can be powerful enough to make human beings behave in ways they normally would not. Because emotions can have such a strong power over behaviours, researchers predominantly in the field of psychology have been interested in what triggers emotions for centuries, starting with Charles Darwin's groundbreaking work dating back to 1872 titled "The Expression of Emotions in Man and Animals". Defined as a complex state of feeling that results in physical and psychological changes that influence thought and behaviour (Myers, 2004), emotions have elicited increased interest in many disciplines other than psychology and sociology such as business. Marketing for example is a commerce-related discipline that relies greatly on psychology literature (Bagozzi, Gopinath, & Nyer, 1999). With the goal to instil feelings that will perhaps persuade a consumer to value and ultimately choose one brand over another, strategists and branding professionals within the marketing industry continuously strive to evoke in potential consumers positive thoughts and perceptions towards their brand. As a result of the need to provide marketing professionals with clearer insights as to what happens when a consumer is initially faced with a product or a brand, researchers have shown a growing interest in marketing and branding more specifically. Its body of literature is as a result relatively recent when put in comparison against the body of literature one finds in the field of psychology, the latter dating as far back as the 1950s (Guilford & Smith, 1959; Wexner, 1954).

Researchers have begun studying the effects colour has on moods and emotions in general (Valdez & Mehrabian, 1994). As well, the effects of branding related elements (such as typography used on product packaging) on emotions and perceptions have elicited increased research interests lately (Franz, 2010; Grohmann, Giese & Parkland, 2013; Tsonos &

Kouroupetrolgou, 2011). Concerning company brand image more specifically, there have been several studies conducted on logos and their effect on corporate brand identity, resulting product perceptions and more (Hynes, 2009). In essence, to say that design elements in general tend to have an impact on people's perceptions and attitudes, whether a brand or a product packaging is discussed, is an agreed on factor.

When taking a step back and reading the literature, it is possible to realize that there seems to be a strong link between people's emotions and perceptions and the physical design element that they are faced with (Artacho, Ballester & Alcántara, 2010; Block, Brunel & Arnold, 2003; Sacharin, Gonzalez & Andersen, 2011). As a result the purpose of this research is to provide a better understanding of the effects of a brand logo's design elements precisely on emotional and cognitive responses, and on the attitudes and perceptions that result when being exposed to a logo for the first time. No research has yet observed the effect of a completely unknown brand logo's colour and font type on emotional and cognitive responses.

While some individuals need a lot of information to make up their mind about something, others are quick at making assumptions and developing attitudes and general evaluations about an element in question (Petty & Cacioppo, 1986). Furthermore, a study by Bloch, Brunel and Arnold (2003) on sensitivity to product aesthetics has shed light on interesting findings that are further studied in the present work. As a result, the following study includes the further analysis of two main personality characteristics, need for cognition (adapted from Petty and Cacioppo (1986)'s Elaboration Likelihood model) as well as aesthetic sensitivity (adapted from Bloch et al. (2003)'s Centrality of Visual Product Aesthetics model).

2. LITERATURE REVIEW

2.1. Emotional and Cognitive Responses

To better understand emotional states, a model that categorizes these into three main groups was developed by Albert Mehrabian and James A. Russell (1974) named the Pleasure-Arousal-Dominance (PAD) Emotional State Model. While other models helping define and categorize emotions have been developed such as Plutchik's (1980) eight emotional categories, the PAD Emotional State Model has been found to be superior in being able to properly represent emotions during consumption (Havlena & Holbrook, 1986). This is a strong reason why it is the model primarily used and recognized in the literature; it now enjoys fast growing application in today's marketing research.

What the authors define as emotional states are "transitory conditions of the organism" (Mehrabian, 1996, p. 261), and they provide such a definition in their work to distinct emotional state from emotional trait, the latter being non-transitory and more stable over long time periods. Pleasure (P), arousal (A) and dominance (D) are the three main emotional states categories. Scales were adopted for each of these emotional states, namely pleasure-displeasure, arousal-nonarousal and dominance-submissiveness. All scales are semantic differential scales and the responses are self-reported by the participants.

Pleasure is the extent to which an experience or object is enjoyable and feels good, therefore the scale measures whether the emotion is a positive or a negative affective emotion (Mehrabian & Russell, 1974). The corresponding emotional descriptors are happy-unhappy, pleased-annoyed, contended-melancholic, hopeful-despairing, relaxed-bored. These items, which all load on the Pleasure factor in Mehrabian and Russell's work (1974) account for 24.6 percent of the variance in their data, which means that this factor helps explain 24.6 percent of the emotional states indicated (Bradley & Lang, 1994).

Arousal is a state of being reactive to a stimuli; the extent to which an individual is mentally alert and active physically. Essentially, it is measured by analyzing whether the stimulus presented is high or low in activity. Arousal can be either pleasant or unpleasant, depending on the emotion felt (Mehrabian & Russell, 1974). For instance, euphoria is extremely high in arousal and so is rage, however one is pleasant and the other is not. The emotional descriptors are stimulated-relaxed, excited-calm, frenzied-sluggish, jittery-dull, wide awake-sleepy, and aroused-unaroused. This second dimension of emotional states explains 23.12 percent of the variance in the results, which is almost equal to that of the first factor; as a result both factors together explain almost 50 percent of the reported data (Bradley & Lang, 1994).

The last factor is dominance, defined as exerting power and influence over one's own environment and others' and by feeling controlled or influenced by situations or others (Mehrabian & Russell, 1974). In this context, it measures stimulus strength and includes the following emotional descriptors: controlling-controlled, influential-influenced, in control-cared for, important-awed, dominant-submissive, and autonomous-guided. This third and last dimension of the PAD model explains much less reported emotional states than the previous ones; only 12.18 percent of the variation is explained (Bradley & Lang, 1994).

Since this last dimension is less representative of emotional states (as the percentages in variations illustrate) (Bradley & Lang, 1994; Mehrabian & Russell, 1974), and also since the focus in this study is on arousal and affect induced by visual stimuli, dominance is not focused on and the focus remains on pleasure and arousal moving forward. Furthermore, the dominance factor has received mixed findings concerning its ability to measure emotions when using other methods than the semantic differential scale, such as the Self-Assessment Manikin format. On the other hand, pleasure and arousal factors were both found to have extremely strong correlations in

their ability to measure emotions no matter the administration technique used (Bradley & Lang, 1994).

2.2. Visual Elements in Logo Design – Colour and Font

Researchers studied also the effects of visual elements on consumers' perception of a product (Hirschman & Holbrook, 1982; Solomon, 2007). Such visual aspects include product shape and colour among other ones. Font is a visual cue that is not greatly researched in a marketing context even though it should be in order to help designers develop more creative brand identities that attract attention. This research focuses on three specific visual elements that make a logo – colour (hue and brightness level) as well as font type.

In order to better comprehend the literature concerning colour and font as visual cues, it is important to first define them and their dimensions and explain what the literature has found in terms of their independent effects on emotion.

2.2.1. Colour

Colour is basically defined as the quality of an object with respect to the light that is reflected by that object. People can see colour when the light reflected has wavelengths between 400 and 700 nanometers and colour has three main features: hue, brightness and saturation. Hue is essentially the colour that can be seen, brightness is the intensity of the colour (light blue versus bright blue) and saturation is the degree of purity of the colour (Valdez & Mehrabian, 1994). The focus for this study remains on hue and brightness level, as research shows that respondents have trouble differentiating between brightness and saturation, and as a result saturation might result in weaker effects on perceived emotions than the other two aspects (Guilford & Smith, 1959).

2.2.1.a. Hue

Studies have tested and confirmed that colours impact and elicit emotions (Aslam, 2006; Labrecque & Milne, 2011). For example, when individuals walk into a room filled with red walls they feel stimulated. When individuals walk into a room filled with blue walls, they feel more relaxed (Bellizzi, Crowley & Haley, 1983). When analyzing the body of literature on the subject, much of the research comes to the agreement that red is a colour strongly associated with excitement and stimulation. On the other hand, blue has been found to be strongly associated with security, comfort and calm (Wexner, 1954; Wright & Rainwater, 1962).

It is hypothesized that moving along the visual spectrum, colours low in wavelengths are more pleasant and colours high in wavelengths are more arousing. It is therefore hypothesized that:

H1a: A blue (compared to red) logo colour significantly increases pleasantness at initial exposure.

H1b: A red (compared to blue) logo colour significantly increases arousal at initial exposure.

2.2.1.b. Brightness

Brightness is a property of colour that makes the understanding of elicited emotions interesting. Work by Profusek and Rainey (1987) looked at the effect of lighter colours on anxiety levels. Red was used as a colour eliciting anxiety. It was found that lowering the brightness of red (thus making the colour lighter, pink) elicited less anxiety in the respondents than bright red. Other research has also found that brighter colours in general elicit greater pleasure only in low wavelengths levels, meaning the colder hues such as blue for example (Guilford & Smith, 1959). One especially interesting article by Babin, Hardesty and Suter (2003)

titled “Color and shopping intentions: The intervening effect of price fairness and perceived affect” that focuses on shopping experiences in retail settings brings interesting findings. They analyze colour and shopping intentions and examine the effects of colour on perceived price fairness and the associated cognitive and affective reactions. The authors look at the effects of two colours in particular: orange and blue, and find soft orange to be more pleasant than bright orange; but bright blue to be more pleasant than light blue.

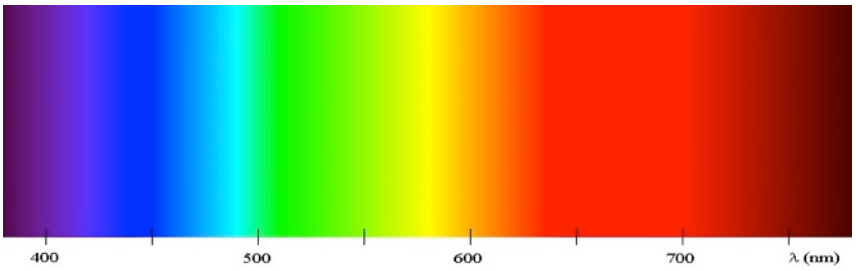
To recapitulate, brighter colours that are high in arousal are high in wavelength (such as red and orange) and decreasing the brightness of the colours generally elicits stronger pleasure, however brighter colours that are high in pleasure are low in wavelength levels (such as blue and violet) and therefore are usually more pleasant than their lighter equivalents (Babin et al., 2003; Guilford & Smith, 1959; Profusek & Rainey, 1987). Taking these findings and applying them in a branding context, it is hypothesized that:

H2a: Blue with a high brightness level (compared with a low brightness level) logo colour significantly increases pleasantness.

H2b: Red with a low brightness level (compared with a high brightness level) logo colour significantly decreases arousal.

See Figure 1 just below for a visual spectrum of colours (notice the nanometers and their respective colours).

Figure 1: Visual Spectrum in nanometers



2.2.2. Font

Typography is defined as "the art, or skill, of designing communication by means of the printed word" (Childers & Jass, 2002, p. 94) and it contains three main features: font type, font style and font size. Font type refers to the choice of character style, such as Times New Roman. Font style refers to whether the letters are bold, italicized or underlined and font size refers to character size. There really are not too many studies that examine the effect of font on emotions in a consumer behaviour related context as the interest in this phenomenon is fairly recent and should be developed further especially for marketing purposes. Still, there exists one interesting research in particular that attempts to understand the emotions elicited through combinations of colours and font types (Tsonos & Kouroupetroglou, 2011). However, the experiment is done to better understand document typography in itself, such as presentation format and document structure. What is interesting is that the emotional effects from their findings are measured using the PAD Model - the model used in this research to examine emotional responses.

The authors not only look at font type; they analyze other factors such as font size, font colour and font style. One issue that can be pointed out in this study is that the two levels of font types used (Times New Roman and Arial) are not that different from each other in their shape

and form. As a result it is not reflective of the concepts that this paper wants to address. Research by Bernard, Chaparro, Mills and Halcomb (2003) also supports this.

It is understood that the reason why these two font types were chosen specifically is because they were found to be the most widely used ones of the serif and sans serif font categories (Tsonos & Kouroupetroglou, 2011). The authors of this article also use many different colour combinations, such as yellow writing with a blue background for example.

It is worth mentioning that serif and sans serif are two main styles widely accepted in typology as traditional versus modern font types mainly because in the past, serif was the one type of handwriting that dominated handwritten documents (Franz, 2010). Today, there are so many different type fonts that an interesting avenue taken in this research is to look at cursive font types and compare with squared font types. There is not much research on those two categories specifically and much less on their take on emotions.

Tsonos and Kouroupetroglou (2011) arrive at the conclusion that only pleasure is affected by font type. Yet, they also found that font colour (which is not examined in this study) and background colour together affect both pleasure and arousal. This leaves for interpretation the relationship between font and colour and the responses that result.

Diving further into type font specifically and the resulting emotional responses, a very interesting study by Henderson, Giese and Cote (2004) found five dimensions that make up font type and each of these possess distinct characteristics. The dimensions are: harmony (level of symmetry and balance), naturalness (how organic the font seems), elaborateness (level of depth and complexity to the font), weight (the level of compression and how heavy the font seems) and finally how flourish it is (which distinguishes between serif and sans-serif fonts) (Henderson et al., 2004).

Henderson et al. (2004)'s research further found that highly organic fonts (natural type) are more engaging and that consumer responses to fonts that have high levels of symmetry (harmonious type) are more reassuring. Feeling reassured means feeling safe which is calming, and as a result should evoke a pleasant emotional response. On the other hand, increased engagement in consumers generally results from being stimulated, therefore excited, which should translate into arousal as an emotional response.

Therefore, taking into consideration this literature on font types and applying these assumptions on brand logo perceptions, it is hypothesized that:

H3a: The use of a harmonious (compared with a organic) type font within the logo significantly increases perceptions of pleasantness.

H3b: The use of an organic (compared with a harmonious) type font within the logo significantly increases perceptions of arousal.

Since it is hypothesized that the colour red significantly increases arousal and that an organic font type also significantly increases perceptions of arousal, it is hypothesized that a logo with both these elements, a red hue and organic type font, will have an even greater impact on perceptions of arousal. On the other hand, since it is hypothesized that the colour blue significantly increases perceptions of pleasantness and that a harmonious type font also significantly increases perceptions of pleasantness, it is hypothesized that a logo with both a blue hue and harmonious type font will have an even greater impact on perceptions of pleasantness. An interaction of logo colour and type font is predicted in H4a and H4b.

H4a: A blue (compared to red) logo colour with a harmonious type font significantly increases perceptions of pleasantness.

H4b: A red (compared to blue) logo colour with an organic type font significantly increases perceptions of arousal.

2.3. Elaboration Likelihood and Need for Cognition

Petty and Cacioppo's (1986) elaboration likelihood model is widely used in marketing literature and especially in studies related to message persuasion. The concepts provided by this model are insightful and help understand how cognitions and attitudes toward a product or brand develop.

The model describes two routes to information processing: the central route and the peripheral route to message persuasion. The model stresses on the main point that the central route to processing requires high motivation and involvement and triggers a cognitive response, whereas the peripheral route does not require such involvement. Instead, consumers will look for peripheral cues to make up their mind about a message. As a result, individuals with a high need for cognition (NFC) will tend to use the central route to process the information and individuals with a low need for cognition will tend to use the peripheral route to process information.

As companies view their logo as a means to transport their identity and values (Bloch et al., 2003), it is safe to assume that brand professionals ultimately rely on such brand identity elements such as the logo to communicate a message to potential consumers. Since the elaboration likelihood model of message persuasion has proven itself over time as a strong model for predicting the effects of marketing messages on consumer attitudes, it is the model used in this research to provide additional understanding on the effects of a brand's logo design elements on consumer attitudes and resulting global brand evaluations.

Petty and Cacioppo (1986) also mention that since individuals with a high need for cognition are more rational in their evaluative process, they take the time to think about functional benefits of a brand or product. On the other hand, individuals with a lower need for cognition focus more on hedonic benefits of the brand or product (Petty & Cacioppo, 1986).

In a branding context, Bottomley and Doyle (2006) found the colour red to have more impact with brands that provide hedonic benefits, whereas blue has been found to have a greater impact with brands that provide more functional benefits. It can thus be assumed that low need for cognition individuals are more likely to be impacted by physical attributes of a logo's design such as colour, and even more so when the colour is red.

Concerning font type and the elaboration likelihood model, interesting research by Childers and Jass (2002) provided clarity concerning the link between route to message persuasion and type font. They found that semantic associations can be formed with font type as an independent component and that meaning is conveyed as a result, which help shape brand perceptions.

To tie the NFC concept with the design elements of logos and resulting cognitive and emotional responses, it is hypothesized that:

H5a: Low (compared to high) NFC individuals have significantly more positive thoughts about the brand after initial exposure to logo design elements presented without additional information.

When there is less information available (only the logo with the brand name), low NFC individuals are expected to focus more on the design elements and be able to easily come up with more positive thoughts about the brand. On the other hand, the individuals with high NFC might

not have enough information to make up their mind about the brand logo and how they feel. This should result in less positive thoughts at initial exposure. Nevertheless, if we do not consider thought valence, perhaps the high NFC individuals will still have something to say with regards to the lack of information that is being presented. In usual circumstances, people with higher levels of NFC that go through rational and evaluative decision-making usually have more to mention than someone that is 'sold' at first exposure. The following competing hypothesis is still tested (while bearing in mind that the reverse effect would not be surprising either, where the low NFC individuals could have more to say than high NFC individuals since they don't need much to make an opinion):

H5b: High (compared to low) NFC individuals will have a significantly greater number of thoughts about the brand after initial exposure.

2.4. Emotional Brand Attachment and Attitude towards the Brand

More recently, such concepts as brand attitude and emotional brand attachment have gained the interest of many researchers (Park, MacInnis, Priester, Eisingerich & Iacobucci, 2010). The body of literature on the matter reveals that strong emotional attachment is generally developed over time and over a number of interactions with the subject in question, the brand being the subject in this study's context (Baldwin, Keelan, Fehr, Enns & Koh-Rangarajoo, 1996). The literature also states that the brand attitude construct is related to brand attachment but is different in that brand attachment is more emotional whereas brand attitude is more cognitive and evaluative in nature. What is interesting is that in their explanation of the differences between emotional attachment and brand attitude, Thomson, MacInnis, and Park (2005) state that attitudes can be seen as "evaluative reactions to an object and these reactions can develop without any

direct contact to it'' (p. 78). As a result, not only can emotions be reactions to a stimuli; the literature also leaves for interpretation the possibility that emotional brand attachment and brand attitude may also be affected when first exposed to a brand's logo. This is the reason why this study evaluates emotional responses to an unfamiliar logo and the attitudes that develop and observe the effects on brand attachment and brand attitude. As a result both emotional and cognitive forms of reactions are observed as well as the resulting responses on emotional brand attachment and brand attitude.

As previously mentioned, because we know that individuals with Low NFC generally base their perceptions on peripheral cues, and that the EBA model includes such a construct as '*passion*', which the authors define as "intense and aroused positive feelings towards the brand" (Thomson et al., 2005**,** p. 80) it is hypothesized that:

H6a: Low (compared to high) NFC individuals will score significantly higher on emotional brand attachment at initial exposure of a logo.

H6b: Within the low NFC sample, emotional brand attachment score will be significantly higher for the individuals exposed to the red logo versus the blue logo.

Compared to emotional brand attachment (an affective outcome of the emotional response), cognitive outcomes are assumed to occur more often times when exposed to a logo with colours of lower wavelength levels. It is therefore hypothesized that:

H7: A blue logo colour with a high brightness level (compared to red with high brightness level) increases brand attitude score when exposed for the first time.

2.5. Aesthetic Sensitivity

One interesting concept that this study includes is aesthetic sensitivity. Different individuals respond differently to aesthetics in general, whether product, packaging or brand is the element of interest. Csikszentmihalyi and Robinson (1990) explain aesthetic sensitivity as how some people connect more rapidly and display more sophisticated choices with art objects than others. Bloch et al. (2003) further define this concept in a marketing context. They not only conceptualized this idea of sensitivity to aesthetics but they also provided a valid and reliable measurement scale to assess individuals' sensitivity level to aesthetics and named their scale the Centrality of Visual Product Aesthetics (CVPA) scale (Bloch et al., 2003). While they mostly discuss visual aesthetics of a product, the findings and literature can definitely relate to brands by transfer of association. Visual aesthetics influence perceptions and that is found to be true whether a specific product or a brand is involved. Bloch et al. (2003) state that ''appearance […] is the first thing about a product that connects with its potential buyers'' (p.551). The same can be said about a brand's logo. Henderson and Cote (1998) as well as MacInnis, Shapiro and Mani (1999) stated in their respective research that a brand's logo indeed acts as the primary representation of a brand's image and meaning. Park, Eisingerich, Pol, and Park (2013) state that logos are important to convey key information about the brand they stand for.

Bloch et al. (2003) state in their research that CVPA should be considered as a personal character trait, and that the CVPA score has "the potential to affect the weight that visual aesthetics hold in a purchase decision as well as preferences for brands and products that satisfy aesthetic needs." (p. 552) While Bloch et al. (2003) evaluated the moderating effects of CVPA on product design evaluations; this study essentially evaluates the direct effects of CVPA on brand design evaluations, taking the logo as the primary visual brand element. An individual who scores high on the CVPA scale exhibits high aesthetic sensitivity, and as such should find product

aesthetics to be more important for them. The ones that are not as sensitive to aesthetics should by definition be more inclined to place importance on product functionality. In this research and from now on, the acronym CVPA is replaced by aesthetic sensitivity score.

Thus, it is expected in this study that an individual with a high aesthetic sensitivity score will be more concerned with the aesthetic properties of a brand's logo at first exposure. Another way to interpret this may be that individuals with a higher aesthetic sensitivity score will report stronger emotional affect and more positive attitude towards a product. It is therefore hypothesized that:

H8a: Individuals with high (compared to low) aesthetic sensitivity will have a significantly more positive attitude towards the brand when exposed to an unknown brand's logo.

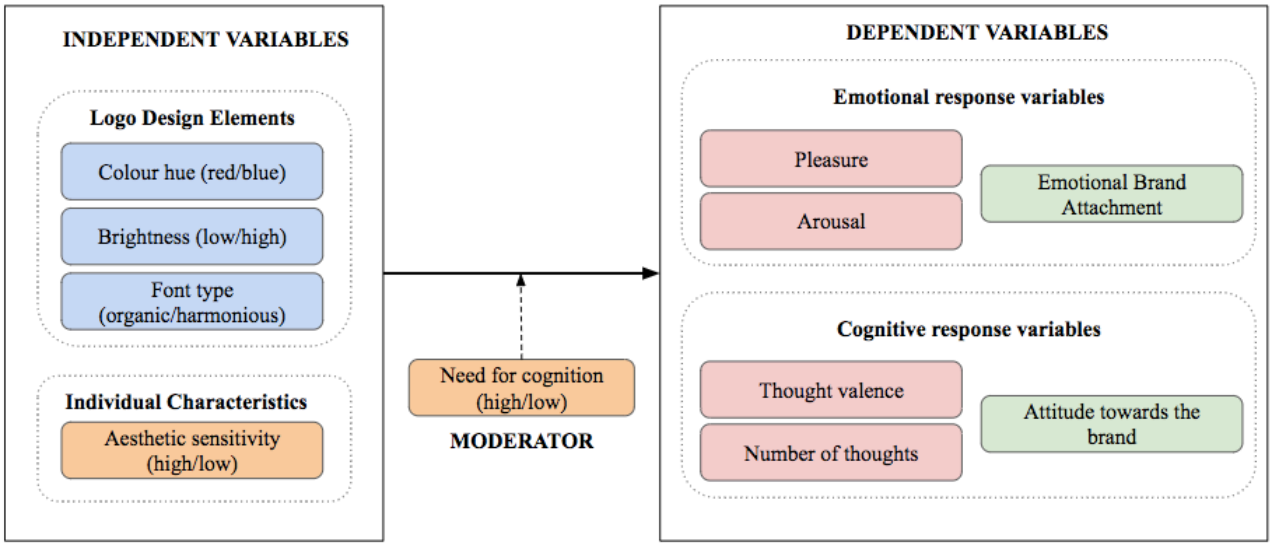
H8b: Individuals with high (compared to low) aesthetic sensitivity will have significantly greater emotional brand attachment score when exposed to an unknown brand's logo.

H9a: Individuals with high (compared to low) aesthetic sensitivity scores will report significantly higher pleasure and arousal scores when first exposed to an unknown brand's logo.

H9b: Individuals with high (compared to low) aesthetic sensitivity scores will report significantly more positive thoughts about an unknown brand's logo.

See below the final conceptual model researched in this study.

Figure 2: Conceptual model



3. METHOLODOGY

Two groups were questioned to help provide further reasoning to the results discussed: an online consumer sample (hereinafter referred to as study participants) was assigned a self-administered questionnaire and four branding experts (hereinafter referred to as experts) were also interviewed using a semi-structured interview process. The Experts portion of the research is discussed in the Additional Analysis section. First, here is the information related to the study participants.

3.1. Sample

Qualtrics was used to send the self-administered questionnaire to a random sample of online participants. The total number of participants was initially 396, however only 231 responses were retained for the analysis portion and remainder of this study. The other 165 respondents were asked the same questions but with different logo colours: greenish-yellow (middle of the colour spectrum) as well as black. These are not used here because of the primary interest for blue and red logo colours. As a result, from here on, sample size (n) equals 231.

Each respondent received $ 4.00 for participation in the study. Respondents are members of the online Qualtrics panel therefore Qualtrics was responsible to pay the respondents (with the proceeds from the CASA research grant) once the questionnaire was completed.

Out of the 231 respondents: 79.8% are female, 86.6% are of white/Caucasian background, 47% are between 30 and 49 years old, 45% are married and 39.9% of respondents have a high school education level. 30% of respondents receive less than $30k per year in household income. Limitations concerning this sample as well as explanations for sample size reduction are discussed in the Limitations section further below. To view the complete demographics of the respondents, including frequencies and cumulative percentages, view the Additional Tables section on p. 77.

Participants were asked to observe one of the twelve designed fictitious brand logo and answer questions related to their emotional and cognitive responses to the logo, perceptions as well as questions about their resulting attitudes and global evaluations. Participants were also asked demographic as well personality characteristics related questions.

3.2. Stimuli

3.2.1. Logo creation

Since the absolute initial exposure to a brand's visual identity is the point of focus in this research, it was decided to use the available literature and create the logos to be used here. The ideation and creation process of the logo began with the question of whether or not the one used in this study should be just a symbol with no brand name, a brand name only or a symbol with a brand name together. Since this study is analyzing font type, clearly the brand name had to be included. All that was left to decide, then, was if the logo was to be the brand name itself or integrated with a symbol. It was found in the literature that logos including symbol as well as the brand name generally evoke more responses (Park et al., 2013). More specifically, visual symbols better personalize the brand and better connect with consumers. Visuals also result in strong affective and behavioural responses and are best effective at breaking language barriers (Park et al., 2013). Another interesting research by Henderson and Cote (1998) analyzed the type of logo best suitable depending on the goals targeted by firms. Four different goals firms wish to achieve with their logos were found: correct recognition, false recognition, affect and finally familiar meaning.

The Summary of Design Guidelines resulting from Henderson and Cote's (1998) study helped create a logo based on the needs of this research. Since 'affect' is in this case the top objective (since the reaction at first exposure is studied) a high-image logo as defined by Henderson and Cote (1998) was found as best suited for this study, since it ranked highest in terms of affect. The corresponding design according to Henderson and Cote (1998) must be high in harmony, high in elaborateness and moderately high in naturalness. The authors define harmony as a "congruent pattern or arrangement of parts that combines symmetry and balance and captures good design from a Gestalt perspective" (p. 16); elaborateness as "not simply

intricacy, but appears to capture the concept of design richness and the ability to use simple lines to capture the essence of something" (p. 17); naturalness as "the degree to which the design depicts commonly experienced objects, […] representative and organic." (p. 16)

Taking this guideline into perspective, a high-image logo was designed by making the logo circular in shape and inserting the brand name inside the shape. By making the brand name touch the left and right sides of the circle, this created an effect of unity and depth. The goal was to have a logo with enough design to create affect without familiarity.

3.2.2. Brand Name

Since the logo had to be of a fictitious brand, a brand name was created after a careful read of the sound symbolism literature on the matter. The challenge was to create a neutral brand name that meant nothing and that brought no sense of recognition or familiarity to the participants since the name is not a factor studied here. Klink's (2000) article *Creating Brand Names with meaning – the use of Sound Symbolism* was a particularly helpful guide for the name creation process. As previously stated, the brand name must mean nothing, not sound familiar to anything else and refrain from giving the impression of being a large or small brand.

Klink (2000) used the word pair *kifave-kofave* in his research and asked if it was easy to distinguish which was smaller. Obviously *kifave* was chosen 215 times out of a possible 265 because of the 'i', which is attributed with smallness (minimum, micro, etc.). Klink (2000) later states that 'K' is a 'voiceless stop' and finds out that words including voiceless stops are usually perceived as smaller, faster, etc. However the sound that comes from the letter 'o' (back-end sound) does not create the perception of being small, to the contrary (Ohala, 1984). As a result of these findings, a word containing a mix of voiceless stops and back-end vowels suggesting largeness receives mixed signals. It doesn't necessarily feel big or small, feminine or masculine.

Kofave was finally chosen as a favorable brand name since it fits nicely with any type of product. Furthermore, after researching the word kofave on the web, nothing comes up remotely close to the name and nothing comes up with any url link either.

3.2.3. Logo Design

The fictitious brand logo was designed in numerous variations of color hue (high and low wavelength levels). The hues chosen for this study are blue and red, because of their proven literary support concerning their effects on pleasure and excitement levels respectively (Guilford & Smith, 1959; Hynes, 2011; Profusek & Rainey, 1987). Two levels of brightness (high/low) for each hue were also taken into account.

The fictitious logo was designed using three different font types to promote the brand name. As discussed in the literature review above, there exists some research that looks at font and emotions evoked. To easily see the distinction between organic and harmonious font, it was decided to take a step back and evaluate between squared and cursive font type. A neutral font type was also used as a control. The font type used for an organic feel is the cursive Smell Roundhand font, whereas Century Gothic was used to create the squared font type with a harmonious feel. Times New Roman is selected as a control type font not only because of its wide acceptance, but also because it is the common default type font used on the web and other electronic mediums of communication. It has also been found to be the easiest to read when compared against Arial (Bernard et al., 2003).

A highly respected creative designer designed the brand logos. See below the designed logos.

Figure 3: Logos designed for research

3.3. Measures

A quantitative research design method is used to test the above hypotheses. All of the scales and respective items used in this study have established validity in previous literature. Table 1 below lists the scales and the respective items used. See Table 2 for the reliability tests of the scales used in this study.

Table 1: Measurement scales and respective items

Familiarity – 5 point Likert Scale (1=Strongly Disagree; 5=Strongly Agree) 3 items (Kent & Allen, 1994) I feel very familiar with the brand. I feel very experienced with the brand. I know the products of the brand.
Pleasure – 9 anchor Semantic Differential Scale 6 items (Mehrabian & Russell, 1974) "How do you feel when exposed to the brand?" Unhappy-Happy Annoyed-Pleased Unsatisfied-Satisfied Melancholic-Contented Despairing-Hopeful Bored-Relaxed

Arousal – 9 anchor Semantic Differential Scale
6 items (Mehrabian & Russell, 1974)
"How do you feel when exposed to the brand?"

Relaxed-Stimulated
Calm-Excited
Sluggish-Frenzied
Dull-Jittery
Sleepy-Wide awake
Unaroused-Aroused

Cognitive Response – Open response
1 item:

'List any thoughts that came to mind when you saw this brand logo.'

Need for Cognition – 7 point Likert Scale (1=Not at all like me; 7=Just like me)
18 items with reversed items in italics (Cacioppo, Petty, & Kao 1984)

I would prefer complex to simple problems.
I like to have the responsibility of handling a situation that requires a lot of thinking
Thinking is not my idea of fun.
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something.
I find satisfaction in deliberating hard and for long hours.
I only think as hard as I have to.
I prefer to think about small, daily projects to long-term ones.
I like tasks that require little thought once I've learned them.
The idea of relying on thought to make my way to the top appeals to me.
I really enjoy a task that involves coming up with new solutions to problems.
Learning new ways to think doesn't excite me very much.
I prefer my life to be filled with puzzles that I must solve.
The notion of thinking abstractly is appealing to me.
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
It's enough for me that something gets the job done; I don't care how or why it works.
I usually end up deliberating about issues even when they do not affect me personally.

Aesthetic Sensitivity – 5 point Likert Scale (1=Strongly Disagree; 5=Strongly Agree)
11 items (Bloch, Brunel, & Arnold, 2003)

Owning products that have superior designs makes me feel good about myself
I enjoy seeing displays of products that have superior designs
A product's design is a source of pleasure for me.
Beautiful product designs make our world a better place to live.
Being able to see subtle differences in product de- signs is one skill that I have developed over time.
I see things in a product's design that other people tend to pass over.
I have the ability to imagine how a product will fit in with designs of other things I already own.
I have a pretty good idea of what makes one product look better than its competitors.
Sometimes the way a product looks seems to reach out and grab me.
If a product's design really "speaks" to me, I feel that I must buy it.
When I see a product that has a really great design, I feel a strong urge to buy it.

Emotional Brand Attachment – 5 point Likert Scale
(1=clearly does not describe my feelings; 5=clearly describes my feelings)
10 items (Thomson, MacInnis, & Park, 2005)
"How do these items describe your feelings about the brand?"

Affectionate
Friendly
Loved
Peaceful
Passionate
Delighted
Captivated
Connected
Bonded
Attached

Attitude towards the brand – 7 anchor Semantic Differential Scale
3 items (Grohmann, 2009)
"What is your global evaluation of the brand?"

Negative/Positive
Dislike/Like
Favorable/Unfavorable

Table 2 - Reliability tests of measurement scales used in consumer survey

Measurement Scales	Alpha
Familiarity (Kent & Allen, 1994)	.971
Pleasure-Arousal (Mehrabian & Russell, 1974)	
Pleasure	.927
Arousal	.852
Cognitive response	
'List any thoughts that came to mind when you saw this brand logo'	
Need For Cognition (Cacioppo, Petty, & Kao 1984)	.816
Aesthetic Sensitivity (Bloch, Brunel, & Arnold, 2003)	.941
Emotional Brand Attachment (Thomson, MacInnis, & Park, 2005)	.980
Attitude toward the brand (Grohmann, 2009)	.910

An important factor to be measured before moving forward with any other statistical analyses is the logo familiarity score. As previously stated, since the logos were created for the purpose of the study using the available literature and since the objective is to evaluate emotional responses at initial exposure of a brand's logo, an analysis must be conducted to ensure that the logos do not provide feelings of familiarity. The familiarity scale of Kent and Allen (1994) was used and the three items included in this measurement scale can be viewed in Table 1. Analyzed using a five-point Likert Scale, the three item scores were averaged and combined to provide an overall score per respondent. A score between 1 and 5 resulted (1= Strongly Disagree (SD); 2=Disagree (D); 3=Neither (N); 4=Agree (A); 5=Strongly Agree (SA). With a mean Familiarity Score of 1.69 with a minimum possible score of 1 and maximum possible score of 5, we can confidently assume that the respondents did not feel familiarity with the brand no matter the colour of the logo or the type font they were presented with. Table 3 below clearly depict this final observation. An ANOVA confirms there is no significant difference across logo condition ($F_{11,230}$=1.335, p=.207).

Table 3: Descriptive statistics of mean familiarity score

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Familiarity Score	231	4.00	1.00	5.00	1.6984	1.09056	1.189
Valid N (listwise)	231						

4. ANALYSIS AND RESULTS

Various MANOVAS were conducted to see if there is a difference in the type of response that results from viewing the logos. Responses are categorized as either emotional or cognitive, and more specifically emotional responses are split between pleasure and arousal, and the cognitive responses are analyzed by valence (1=positive valence, -1=negative valence, 0=neutral valence) as well as thought count (the number of thoughts respondents share). Examples of neutral valence thoughts are "I don't know the brand", "I never heard of the brand", "n\a".

MANOVAS were also performed to examine possible effects of the design elements (independent variables) on emotional brand attachment and brand attitude. View Table 4 below for a summary of the various regressions conducted.

Table 4: Summary table of MANOVAs conducted

MANOVA 1) n=231	Moderator: NFC IVs: colour, brightness, type font DVs: pleasure, arousal, valence, thought count
MANOVA 2) n=231	IVs: colour, brightness, type font, aesthetic sensitivity DVs: pleasure, arousal, valence, thought count
MANOVA 3) n=231	Moderator: NFC IVs: colour, brightness, type font DVs: EBA, brand attitude
MANOVA 4) n=231	IVs: colour, brightness, type font, aesthetic sensitivity DVs: EBA, brand attitude

4.1. MANOVA 1

When including NFC as a moderator of the relationship between the factors and emotional and cognitive responses, brightness turns up as a variable that significantly affects the model ($F_{4,204}$=2.72, p =.031) which can be viewed in table 5 below. The colour and NFC variables are not statistically significant when analyzed independently of each other.

When examining the between subjects effects, the colour x NFC interaction term significantly impacts the arousal score ($F_{1,207}$=6.518, p =.011) while colour on its own in the previous scenario did not have a significant impact. The brightness x font x NFC interaction term significantly impacts thought count ($F_{2,207}$=3.233, p =.041).

Table 5: MANOVA 1 – Multivariate tests table

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.948	936.550[b]	4.000	204.000	.000
	Wilks' Lambda	.052	936.550[b]	4.000	204.000	.000
	Hotelling's Trace	18.364	936.550[b]	4.000	204.000	.000
	Roy's Largest Root	18.364	936.550[b]	4.000	204.000	.000
IV1_Colour	Pillai's Trace	.004	.227[b]	4.000	204.000	.923
	Wilks' Lambda	.996	.227[b]	4.000	204.000	.923
	Hotelling's Trace	.004	.227[b]	4.000	204.000	.923
	Roy's Largest Root	.004	.227[b]	4.000	204.000	.923
IV2_Brightness	Pillai's Trace	.051	2.715[b]	4.000	204.000	.031
	Wilks' Lambda	.949	2.715[b]	4.000	204.000	.031
	Hotelling's Trace	.053	2.715[b]	4.000	204.000	.031
	Roy's Largest Root	.053	2.715[b]	4.000	204.000	.031
IV3_Font	Pillai's Trace	.042	1.094	8.000	410.000	.366
	Wilks' Lambda	.959	1.091[b]	8.000	408.000	.368
	Hotelling's Trace	.043	1.088	8.000	406.000	.370
	Roy's Largest Root	.031	1.600[c]	4.000	205.000	.176
NFC	Pillai's Trace	.029	1.544[b]	4.000	204.000	.191
	Wilks' Lambda	.971	1.544[b]	4.000	204.000	.191
	Hotelling's Trace	.030	1.544[b]	4.000	204.000	.191
	Roy's Largest Root	.030	1.544[b]	4.000	204.000	.191
IV1_Colour * IV2_Brightness	Pillai's Trace	.022	1.165[b]	4.000	204.000	.328
	Wilks' Lambda	.978	1.165[b]	4.000	204.000	.328
	Hotelling's Trace	.023	1.165[b]	4.000	204.000	.328
	Roy's Largest Root	.023	1.165[b]	4.000	204.000	.328
IV1_Colour * IV3_Font	Pillai's Trace	.047	1.241	8.000	410.000	.274
	Wilks' Lambda	.953	1.240[b]	8.000	408.000	.274
	Hotelling's Trace	.049	1.238	8.000	406.000	.275
	Roy's Largest Root	.039	1.979[c]	4.000	205.000	.099
IV1_Colour * NFC	Pillai's Trace	.043	2.281[b]	4.000	204.000	.062
	Wilks' Lambda	.957	2.281[b]	4.000	204.000	.062
	Hotelling's Trace	.045	2.281[b]	4.000	204.000	.062
	Roy's Largest Root	.045	2.281[b]	4.000	204.000	.062
IV2_Brightness * IV3_Font	Pillai's Trace	.025	.642	8.000	410.000	.742
	Wilks' Lambda	.975	.642[b]	8.000	408.000	.742
	Hotelling's Trace	.025	.642	8.000	406.000	.743
	Roy's Largest Root	.023	1.199[c]	4.000	205.000	.313
IV2_Brightness * NFC	Pillai's Trace	.023	1.189[b]	4.000	204.000	.317
	Wilks' Lambda	.977	1.189[b]	4.000	204.000	.317
	Hotelling's Trace	.023	1.189[b]	4.000	204.000	.317
	Roy's Largest Root	.023	1.189[b]	4.000	204.000	.317
IV3_Font * NFC	Pillai's Trace	.037	.973	8.000	410.000	.457
	Wilks' Lambda	.963	.969[b]	8.000	408.000	.460
	Hotelling's Trace	.038	.965	8.000	406.000	.463
	Roy's Largest Root	.025	1.300[c]	4.000	205.000	.271
IV1_Colour * IV2_Brightness * IV3_Font	Pillai's Trace	.031	.808	8.000	410.000	.595
	Wilks' Lambda	.969	.808[b]	8.000	408.000	.596
	Hotelling's Trace	.032	.807	8.000	406.000	.597
	Roy's Largest Root	.027	1.383[c]	4.000	205.000	.241
IV1_Colour * IV2_Brightness * NFC	Pillai's Trace	.012	.627[b]	4.000	204.000	.644
	Wilks' Lambda	.988	.627[b]	4.000	204.000	.644
	Hotelling's Trace	.012	.627[b]	4.000	204.000	.644
	Roy's Largest Root	.012	.627[b]	4.000	204.000	.644
IV1_Colour * IV3_Font * NFC	Pillai's Trace	.028	.736	8.000	410.000	.659
	Wilks' Lambda	.972	.736[b]	8.000	408.000	.660
	Hotelling's Trace	.029	.736	8.000	406.000	.660
	Roy's Largest Root	.026	1.336[c]	4.000	205.000	.258
IV2_Brightness * IV3_Font * NFC	Pillai's Trace	.043	1.123	8.000	410.000	.346
	Wilks' Lambda	.957	1.121[b]	8.000	408.000	.348
	Hotelling's Trace	.044	1.118	8.000	406.000	.350
	Roy's Largest Root	.033	1.683[c]	4.000	205.000	.155
IV1_Colour * IV2_Brightness * IV3_Font * NFC	Pillai's Trace	.035	.923	8.000	410.000	.497
	Wilks' Lambda	.965	.924[b]	8.000	408.000	.496
	Hotelling's Trace	.036	.924	8.000	406.000	.496
	Roy's Largest Root	.033	1.678[c]	4.000	205.000	.156

a. Design: Intercept + IV1_Colour + IV2_Brightness + IV3_Font + NFC + IV1_Colour * IV2_Brightness + IV1_Colour * IV3_Font + IV1_Colour * NFC + IV2_Brightness * IV3_Font + IV2_Brightness * NFC + IV3_Font * NFC + IV1_Colour * IV2_Brightness * IV3_Font + IV1_Colour * IV2_Brightness * NFC + IV1_Colour * IV3_Font * NFC + IV2_Brightness * IV3_Font * NFC + IV1_Colour * IV2_Brightness * IV3_Font * NFC

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Table 6: MANOVA 1 - Tests of between-subjects effects

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Pleasure Score	70.037[a]	23	3.045	.976	.498
	Arousal Score	45.211[b]	23	1.966	.821	.703
	No of thoughts	23.962[c]	23	1.042	1.084	.365
	VALENCE_recoded	8.100[d]	23	.352	.736	.805
Intercept	Pleasure Score	7011.510	1	7011.510	2247.708	.000
	Arousal Score	5392.529	1	5392.529	2252.229	.000
	No of thoughts	416.464	1	416.464	433.360	.000
	VALENCE_recoded	19.618	1	19.618	41.001	.000
IV1_Colour	Pleasure Score	2.399	1	2.399	.769	.382
	Arousal Score	1.607	1	1.607	.671	.414
	No of thoughts	.033	1	.033	.034	.854
	VALENCE_recoded	.051	1	.051	.107	.744
IV2_Brightness	Pleasure Score	.003	1	.003	.001	.973
	Arousal Score	4.797	1	4.797	2.003	.158
	No of thoughts	.153	1	.153	.160	.690
	VALENCE_recoded	1.586	1	1.586	3.315	.070
IV3_Font	Pleasure Score	11.032	2	5.516	1.768	.173
	Arousal Score	4.317	2	2.159	.902	.408
	No of thoughts	.902	2	.451	.469	.626
	VALENCE_recoded	1.273	2	.637	1.330	.267
NFC	Pleasure Score	4.749	1	4.749	1.522	.219
	Arousal Score	.022	1	.022	.009	.924
	No of thoughts	2.173	1	2.173	2.261	.134
	VALENCE_recoded	.002	1	.002	.004	.949
IV1_Colour * IV2_Brightness	Pleasure Score	5.456	1	5.456	1.749	.187
	Arousal Score	.013	1	.013	.005	.942
	No of thoughts	.129	1	.129	.135	.714
	VALENCE_recoded	.037	1	.037	.078	.780
IV1_Colour * IV3_Font	Pleasure Score	7.858	2	3.929	1.260	.286
	Arousal Score	1.037	2	.518	.216	.806
	No of thoughts	2.267	2	1.133	1.179	.310
	VALENCE_recoded	1.433	2	.716	1.497	.226
IV1_Colour * NFC	Pleasure Score	4.282	1	4.282	1.373	.243
	Arousal Score	15.605	1	15.605	6.518	.011
	No of thoughts	2.123	1	2.123	2.209	.139
	VALENCE_recoded	.138	1	.138	.289	.591
IV2_Brightness * IV3_Font	Pleasure Score	3.431	2	1.715	.550	.578
	Arousal Score	.215	2	.108	.045	.956
	No of thoughts	.724	2	.362	.377	.687
	VALENCE_recoded	.217	2	.109	.227	.797
IV2_Brightness * NFC	Pleasure Score	3.717	1	3.717	1.192	.276
	Arousal Score	3.931	1	3.931	1.642	.202
	No of thoughts	3.226	1	3.226	3.357	.068
	VALENCE_recoded	.284	1	.284	.594	.442
IV3_Font * NFC	Pleasure Score	4.195	2	2.097	.672	.512
	Arousal Score	.592	2	.296	.124	.884
	No of thoughts	2.688	2	1.344	1.398	.249
	VALENCE_recoded	1.055	2	.528	1.103	.334
IV1_Colour * IV2_Brightness * IV3_Font	Pleasure Score	1.558	2	.779	.250	.779
	Arousal Score	6.519	2	3.260	1.361	.259
	No of thoughts	1.121	2	.561	.583	.559
	VALENCE_recoded	.481	2	.240	.502	.606
IV1_Colour * IV2_Brightness * NFC	Pleasure Score	.410	1	.410	.131	.717
	Arousal Score	3.140	1	3.140	1.311	.253
	No of thoughts	.497	1	.497	.517	.473
	VALENCE_recoded	.269	1	.269	.562	.454
IV1_Colour * IV3_Font * NFC	Pleasure Score	2.063	2	1.032	.331	.719
	Arousal Score	1.043	2	.521	.218	.805
	No of thoughts	.997	2	.499	.519	.596
	VALENCE_recoded	.184	2	.092	.192	.825
IV2_Brightness * IV3_Font * NFC	Pleasure Score	5.057	2	2.528	.811	.446
	Arousal Score	1.047	2	.523	.219	.804
	No of thoughts	6.214	2	3.107	3.233	.041
	VALENCE_recoded	.449	2	.225	.469	.626
IV1_Colour * IV2_Brightness * IV3_Font * NFC	Pleasure Score	8.207	2	4.103	1.315	.271
	Arousal Score	1.269	2	.635	.265	.767
	No of thoughts	.184	2	.092	.096	.909
	VALENCE_recoded	1.055	2	.527	1.102	.334
Error	Pleasure Score	645.717	207	3.119		
	Arousal Score	495.622	207	2.394		
	No of thoughts	198.929	207	.961		
	VALENCE_recoded	99.043	207	.478		
Total	Pleasure Score	7825.028	231			
	Arousal Score	6076.694	231			
	No of thoughts	647.000	231			
	VALENCE_recoded	126.000	231			
Corrected Total	Pleasure Score	715.754	230			
	Arousal Score	540.833	230			
	No of thoughts	222.892	230			
	VALENCE_recoded	107.143	230			

a. R Squared = .098 (Adjusted R Squared = -.002)
b. R Squared = .084 (Adjusted R Squared = -.018)
c. R Squared = .108 (Adjusted R Squared = .008)
d. R Squared = .076 (Adjusted R Squared = -.027)

Table 7: Effect of logo colour x NFC interaction term on the emotional and cognitive dependent variables

8. Logo Colour * Final NFC Split						
					95% Confidence Interval	
Dependent Variable	Logo Colour	Final NFC Split	Mean	Std. Error	Lower Bound	Upper Bound
Pleasure Score	Blue	Low NFC	5.484	.227	5.037	5.932
		High NFC	5.499	.242	5.022	5.977
	Red	Low NFC	5.415	.228	4.966	5.864
		High NFC	5.983	.247	5.496	6.469
Arousal Score	Blue	Low NFC	5.096	.199	4.704	5.488
		High NFC	4.548	.212	4.130	4.967
	Red	Low NFC	4.738	.200	4.344	5.131
		High NFC	5.246	.216	4.819	5.672
No of thoughts	Blue	Low NFC	1.156	.126	.908	1.404
		High NFC	1.547	.134	1.282	1.812
	Red	Low NFC	1.375	.126	1.125	1.624
		High NFC	1.377	.137	1.107	1.647
VALENCE_recoded	Blue	Low NFC	.303	.089	.128	.478
		High NFC	.259	.095	.072	.446
	Red	Low NFC	.283	.089	.107	.459
		High NFC	.339	.097	.148	.529

When the blue logo is presented to individuals with a lower NFC, the arousal score is higher ($M_{blue\ x\ lowNFC}$=5.096) in comparison to high NFC individuals ($M_{blue\ x\ highNFC}$=4.548). On the other hand, when the red logo is presented, lower NFC individuals report lower arousal scores ($M_{red\ x\ lowNFC}$=4.738) compared to high NFC individuals ($M_{red\ x\ highNFC}$=5.246). This is interesting since the opposite was expected, where a red logo was expected to increase arousal scores in low NFC individuals and a blue logo was expected to decrease arousal scores in high NFC individuals. In this case, the opposite occurred.

Table 8: MANOVA 1 – Effect of brightness x Type font x NFC interaction term on the emotional and cognitive dependent variables

15. Brightness * Type font * Final NFC Split

Dependent Variable	Brightness	Type font	Final NFC Split	Mean	Std. Error	95% Confidence Interval	
						Lower Bound	Upper Bound
Pleasure Score	Bright	Harmonious Font	Low NFC	5.366	.389	4.598	6.133
			High NFC	6.033	.456	5.134	6.932
		Organic Font	Low NFC	5.881	.406	5.082	6.681
			High NFC	5.450	.419	4.624	6.276
		Neutral Font	Low NFC	5.500	.389	4.732	6.268
			High NFC	5.365	.419	4.539	6.190
	Light	Harmonious Font	Low NFC	5.729	.369	5.002	6.456
			High NFC	6.354	.429	5.508	7.200
		Organic Font	Low NFC	5.045	.377	4.303	5.788
			High NFC	5.969	.442	5.098	6.839
		Neutral Font	Low NFC	5.176	.429	4.330	6.022
			High NFC	5.274	.371	4.542	6.007
Arousal Score	Bright	Harmonious Font	Low NFC	5.299	.341	4.626	5.971
			High NFC	4.931	.400	4.143	5.718
		Organic Font	Low NFC	5.300	.355	4.599	6.001
			High NFC	5.000	.367	4.276	5.724
		Neutral Font	Low NFC	4.988	.341	4.316	5.661
			High NFC	4.802	.367	4.079	5.526
	Light	Harmonious Font	Low NFC	4.705	.323	4.068	5.341
			High NFC	4.888	.376	4.147	5.629
		Organic Font	Low NFC	4.667	.330	4.016	5.317
			High NFC	5.219	.387	4.456	5.981
		Neutral Font	Low NFC	4.543	.376	3.802	5.284
			High NFC	4.543	.325	3.901	5.185
No of thoughts	Bright	Harmonious Font	Low NFC	.861	.216	.435	1.287
			High NFC	1.700	.253	1.201	2.199
		Organic Font	Low NFC	1.167	.225	.723	1.611
			High NFC	1.950	.233	1.492	2.408
		Neutral Font	Low NFC	1.486	.216	1.060	1.912
			High NFC	1.175	.233	.717	1.633
	Light	Harmonious Font	Low NFC	1.481	.205	1.078	1.884
			High NFC	1.181	.238	.711	1.650
		Organic Font	Low NFC	1.318	.209	.906	1.730
			High NFC	1.375	.245	.892	1.858
		Neutral Font	Low NFC	1.278	.238	.808	1.747
			High NFC	1.392	.206	.986	1.799
VALENCE_recoded	Bright	Harmonious Font	Low NFC	.264	.153	-.037	.565
			High NFC	.450	.179	.098	.802
		Organic Font	Low NFC	.206	.159	-.108	.519
			High NFC	.113	.164	-.211	.436
		Neutral Font	Low NFC	.264	.153	-.037	.565
			High NFC	-.025	.164	-.348	.298
	Light	Harmonious Font	Low NFC	.398	.144	.113	.682
			High NFC	.479	.168	.148	.810
		Organic Font	Low NFC	.273	.147	-.018	.563
			High NFC	.500	.173	.159	.841
		Neutral Font	Low NFC	.354	.168	.023	.685
			High NFC	.277	.145	-.010	.564

In all instances except two, high NFC individuals report a higher number of thoughts no matter the font type or brightness level of the logo. The first exception is the high brightness version of a logo with a neutral font, which resulted in a higher number of thoughts within the low NFC individuals ($_{Mbright\ x\ neutral\ x\ lowNFC}$=1.486) when compared against its high NFC

equivalent ($M_{bright\ x\ neutral\ x\ highNFC}$=1.175). The second exception is the low brightness version of a logo with a harmonious font, which resulted in a higher number of thoughts within low NFC individuals ($M_{light\ x\ harmonious\ x\ lowNFC}$=1.481) in comparison to its high NFC equivalent ($M_{light\ x\ harmonious\ x\ highNFC}$=1.181). The results show a general higher number of thoughts when the high brightness level versions of the logos are presented (versus the low brightness versions) as can be found by the greater upper bound confidence intervals.

Since NFC on its own does not provide statistically significant results, **H5a** (*Low (compared to high) NFC individuals have significantly more positive thoughts about the brand after initial exposure to logo design elements presented without additional information.)* is thus not supported. **H5b** (*High (compared to low) NFC individuals will have a significantly greater number of thoughts about the brand after initial exposure)* is also not supported.

4.2. MANOVA 2

Including aesthetic sensitivity as an independent variable provides interesting results on the relationship between the factors (colour, brightness, type font, aesthetic sensitivity) and the dependent variables (pleasure, arousal, valence, thought count). The aesthetic sensitivity score is categorized as either high or low with a neutral scale mid-point as the cutoff criterion. The average scores that are smaller than or equal to 3 (neither agree nor disagree) are categorized as Low Aesthetic Sensitivity (n=53) while the scores above 3 are categorized as High Aesthetic Sensitivity (n=178). Clearly, many of the respondents care about the aesthetics of a product or brand since 77.1% of the scores are in the High Aesthetic Sensitivity category, which can be observed in Table 9.

Table 9: Frequency – Aesthetic sensitivity score (high vs. low)

AESTHETIC_SENS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low Aesthetic Sens.	53	22.9	22.9	22.9
	High Aesthetic Sens.	178	77.1	77.1	100.0
	Total	231	100.0	100.0	

Table 10: MANOVA 2 – Tests of between-subjects effects

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Pleasure Score	152.482[a]	23	6.630	2.436	.000
	Arousal Score	69.461[b]	23	3.020	1.326	.153
	No of thoughts	20.246[c]	23	.880	.899	.600
	VALENCE_recoded	12.132[d]	23	.527	1.149	.296
Intercept	Pleasure Score	3459.091	1	3459.091	1271.200	.000
	Arousal Score	2836.421	1	2836.421	1245.596	.000
	No of thoughts	198.226	1	198.226	202.486	.000
	VALENCE_recoded	3.295	1	3.295	7.179	.008
IV1_Colour	Pleasure Score	1.010	1	1.010	.371	.543
	Arousal Score	.001	1	.001	.000	.985
	No of thoughts	1.320	1	1.320	1.348	.247
	VALENCE_recoded	.704	1	.704	1.533	.217
IV2_Brightness	Pleasure Score	.069	1	.069	.025	.874
	Arousal Score	.988	1	.988	.434	.511
	No of thoughts	.390	1	.390	.398	.529
	VALENCE_recoded	1.978	1	1.978	4.310	.039
IV3_Font	Pleasure Score	3.819	2	1.909	.702	.497
	Arousal Score	2.901	2	1.451	.637	.530
	No of thoughts	.656	2	.328	.335	.716
	VALENCE_recoded	1.841	2	.921	2.006	.137
AESTHETIC_SENS	Pleasure Score	61.876	1	61.876	22.739	.000
	Arousal Score	21.269	1	21.269	9.340	.003
	No of thoughts	4.179	1	4.179	4.269	.040
	VALENCE_recoded	5.512	1	5.512	12.009	.001
IV1_Colour * IV2_Brightness	Pleasure Score	.188	1	.188	.069	.793
	Arousal Score	1.321	1	1.321	.580	.447
	No of thoughts	.000	1	.000	.000	.991
	VALENCE_recoded	.256	1	.256	.557	.456
IV1_Colour * IV3_Font	Pleasure Score	1.906	2	.953	.350	.705
	Arousal Score	.079	2	.040	.017	.983
	No of thoughts	2.238	2	1.119	1.143	.321
	VALENCE_recoded	1.838	2	.919	2.003	.138
IV1_Colour * AESTHETIC_SENS	Pleasure Score	3.520	1	3.520	1.294	.257
	Arousal Score	5.425	1	5.425	2.382	.124
	No of thoughts	3.046	1	3.046	3.111	.079
	VALENCE_recoded	.367	1	.367	.800	.372
IV2_Brightness * IV3_Font	Pleasure Score	11.035	2	5.518	2.028	.134
	Arousal Score	2.312	2	1.156	.508	.603
	No of thoughts	2.489	2	1.244	1.271	.283
	VALENCE_recoded	.400	2	.200	.436	.647
IV2_Brightness * AESTHETIC_SENS	Pleasure Score	3.449E-005	1	3.449E-005	.000	.997
	Arousal Score	.738	1	.738	.324	.570
	No of thoughts	1.116	1	1.116	1.140	.287
	VALENCE_recoded	.265	1	.265	.577	.448
IV3_Font * AESTHETIC_SENS	Pleasure Score	3.230	2	1.615	.594	.553
	Arousal Score	.091	2	.045	.020	.980
	No of thoughts	.398	2	.199	.203	.816
	VALENCE_recoded	.886	2	.443	.965	.383
IV1_Colour * IV2_Brightness * IV3_Font	Pleasure Score	.510	2	.255	.094	.911
	Arousal Score	3.875	2	1.937	.851	.429
	No of thoughts	.110	2	.055	.056	.945
	VALENCE_recoded	.916	2	.458	.998	.370
IV1_Colour * IV2_Brightness * AESTHETIC_SENS	Pleasure Score	9.731	1	9.731	3.576	.060
	Arousal Score	3.856	1	3.856	1.693	.195
	No of thoughts	.243	1	.243	.248	.619
	VALENCE_recoded	.396	1	.396	.862	.354
IV1_Colour * IV3_Font * AESTHETIC_SENS	Pleasure Score	3.721	2	1.861	.684	.506
	Arousal Score	3.963	2	1.982	.870	.420
	No of thoughts	.883	2	.441	.451	.638
	VALENCE_recoded	.718	2	.359	.783	.459
IV2_Brightness * IV3_Font * AESTHETIC_SENS	Pleasure Score	6.906	2	3.453	1.269	.283
	Arousal Score	3.771	2	1.886	.828	.438
	No of thoughts	1.684	2	.842	.860	.425
	VALENCE_recoded	.244	2	.122	.266	.767
IV1_Colour * IV2_Brightness * IV3_Font * AESTHETIC_SENS	Pleasure Score	.723	2	.362	.133	.876
	Arousal Score	.054	2	.027	.012	.988
	No of thoughts	1.249	2	.625	.638	.529
	VALENCE_recoded	.275	2	.137	.300	.741
Error	Pleasure Score	563.272	207	2.721		
	Arousal Score	471.372	207	2.277		
	No of thoughts	202.646	207	.979		
	VALENCE_recoded	95.011	207	.459		
Total	Pleasure Score	7825.028	231			
	Arousal Score	6076.694	231			
	No of thoughts	647.000	231			
	VALENCE_recoded	126.000	231			
Corrected Total	Pleasure Score	715.754	230			
	Arousal Score	540.833	230			
	No of thoughts	222.892	230			
	VALENCE_recoded	107.143	230			

a. R Squared = .213 (Adjusted R Squared = .126)
b. R Squared = .128 (Adjusted R Squared = .032)
c. R Squared = .091 (Adjusted R Squared = -.010)
d. R Squared = .113 (Adjusted R Squared = .015)

Table 11: MANOVA 2 – Brightness effect on thought valence

3. Brightness					
				95% Confidence Interval	
Dependent Variable	Brightness	Mean	Std. Error	Lower Bound	Upper Bound
Pleasure Score	Bright	5.170	.223	4.730	5.610
	Light	5.216	.187	4.848	5.585
Arousal Score	Bright	4.790	.204	4.388	5.193
	Light	4.615	.171	4.278	4.952
No of thoughts	Bright	1.298	.134	1.034	1.562
	Light	1.188	.112	.967	1.409
VALENCE_recoded	Bright	.036	.092	-.145	.217
	Light	.284	.077	.133	.436

The between subjects tests table (Table 10) reveals that brightness level of the logo significantly impacts thought valence ($F_{1,207}$=4.31, p=.039). Analyzing further, Table 11 depicts a higher (more positive) valence mean for the lighter versions of the logo ($M_{lightlogo}$=0.28) compared to the brighter versions ($M_{brightlogo}$=0.03).

The aesthetic sensitivity score on its own significantly impacts pleasure score ($F_{1,207}$=22.739, p <.001), arousal score ($F_{1,207}$=9.34, p=.003), thought valence ($F_{1,207}$=12.009, p =.001) as well as thought count ($F_{1,207}$=4.269, p =.04). The interaction of aesthetic sensitivity level with another variable doesn't provide significant results.

Table 12: MANOVA 2 – Aesthetic sensitivity split on emotional and cognitive response

9. AESTHETIC_SENS					
				95% Confidence Interval	
Dependent Variable	AESTHETIC_SENS	Mean	Std. Error	Lower Bound	Upper Bound
Pleasure Score	Low Aesthetic Sens.	4.499	.263	3.980	5.018
	High Aesthetic Sens.	5.888	.125	5.642	6.134
Arousal Score	Low Aesthetic Sens.	4.295	.241	3.821	4.770
	High Aesthetic Sens.	5.110	.114	4.885	5.335
No of thoughts	Low Aesthetic Sens.	1.063	.158	.751	1.374
	High Aesthetic Sens.	1.424	.075	1.276	1.571
VALENCE_recoded	Low Aesthetic Sens.	-.047	.108	-.260	.166
	High Aesthetic Sens.	.368	.051	.267	.469

From the table above it can be observed that individuals within the high aesthetic sensitivity category have higher pleasure scores ($M_{highaesthetic}$=5.88 compared to $M_{lowaesthetic}$=4.49) and higher arousal scores ($M_{highaesthetic}$= 5.11 compared to $M_{lowaesthetic}$=4.29). The people within the high aesthetic sensitivity category also reported thoughts that are more positively inclined ($M_{highaesthetic}$=0.36), whereas the low aesthetic sensitivity group reported thoughts that are generally on the negative side ($M_{lowaesthetic}$=-0.04).

This is in line with the assumptions discussed in this study since we expect that individuals within the high aesthetic sensitivity category should report higher levels of emotional responses (pleasure and arousal scores). We also expect that people that care and are impacted by aesthetics of a brand or product would report more positive thoughts about the logo presented. Finally, high aesthetic sensitivity individuals also reported a greater number of thoughts ($M_{highaesthetic}$=1.42) in comparison to the low aesthetic sensitivity individuals ($M_{lowaesthetic}$=1.06), which is an interesting finding.

As a result, **H9a** (*Individuals with high (compared to low) aesthetic sensitivity scores will report significantly higher pleasure and arousal scores at first exposure an unfamiliar brand's logo*) and **H9b** (*Individuals with high (compared to low) aesthetic sensitivity scores will report significantly more positive thoughts about an unfamiliar brand's logo at first exposure*) are both supported.

4.3. MANOVA 3

When conducting MANOVA 3 with the factors (colour, brightness, type font, NFC) and emotional brand attachment as well as brand attitude as dependent variables, no statistically significant results are found.

As a result, **H6a** *(Low (compared to high) NFC individuals will score significantly higher on emotional brand attachment at initial exposure of a logo)* and **H6b** *(Within the low NFC sample, emotional brand attachment score will be significantly higher for the individuals exposed to the red logo versus the blue logo)* are not supported. Table 13 depicts the Multivariate Tests with the non-significant p-values.

Table 13: MANOVA 3 – Multivariate tests table

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.900	930.627[b]	2.000	206.000	.000
	Wilks' Lambda	.100	930.627[b]	2.000	206.000	.000
	Hotelling's Trace	9.035	930.627[b]	2.000	206.000	.000
	Roy's Largest Root	9.035	930.627[b]	2.000	206.000	.000
IV1_Colour	Pillai's Trace	.021	2.249[b]	2.000	206.000	.108
	Wilks' Lambda	.979	2.249[b]	2.000	206.000	.108
	Hotelling's Trace	.022	2.249[b]	2.000	206.000	.108
	Roy's Largest Root	.022	2.249[b]	2.000	206.000	.108
IV2_Brightness	Pillai's Trace	.007	.682[b]	2.000	206.000	.507
	Wilks' Lambda	.993	.682[b]	2.000	206.000	.507
	Hotelling's Trace	.007	.682[b]	2.000	206.000	.507
	Roy's Largest Root	.007	.682[b]	2.000	206.000	.507
IV3_Font	Pillai's Trace	.026	1.341	4.000	414.000	.254
	Wilks' Lambda	.974	1.343[b]	4.000	412.000	.253
	Hotelling's Trace	.026	1.345	4.000	410.000	.253
	Roy's Largest Root	.026	2.708[c]	2.000	207.000	.069
NFC	Pillai's Trace	.009	.885[b]	2.000	206.000	.414
	Wilks' Lambda	.991	.885[b]	2.000	206.000	.414
	Hotelling's Trace	.009	.885[b]	2.000	206.000	.414
	Roy's Largest Root	.009	.885[b]	2.000	206.000	.414
IV1_Colour * IV2_Brightness	Pillai's Trace	.027	2.821[b]	2.000	206.000	.062
	Wilks' Lambda	.973	2.821[b]	2.000	206.000	.062
	Hotelling's Trace	.027	2.821[b]	2.000	206.000	.062
	Roy's Largest Root	.027	2.821[b]	2.000	206.000	.062
IV1_Colour * IV3_Font	Pillai's Trace	.011	.554	4.000	414.000	.696
	Wilks' Lambda	.989	.553[b]	4.000	412.000	.697
	Hotelling's Trace	.011	.552	4.000	410.000	.698
	Roy's Largest Root	.011	1.102[c]	2.000	207.000	.334
IV1_Colour * NFC	Pillai's Trace	.006	.587[b]	2.000	206.000	.557
	Wilks' Lambda	.994	.587[b]	2.000	206.000	.557
	Hotelling's Trace	.006	.587[b]	2.000	206.000	.557
	Roy's Largest Root	.006	.587[b]	2.000	206.000	.557
IV2_Brightness * IV3_Font	Pillai's Trace	.009	.489	4.000	414.000	.744
	Wilks' Lambda	.991	.487[b]	4.000	412.000	.745
	Hotelling's Trace	.009	.485	4.000	410.000	.747
	Roy's Largest Root	.008	.837[c]	2.000	207.000	.434
IV2_Brightness * NFC	Pillai's Trace	.012	1.280[b]	2.000	206.000	.280
	Wilks' Lambda	.988	1.280[b]	2.000	206.000	.280
	Hotelling's Trace	.012	1.280[b]	2.000	206.000	.280
	Roy's Largest Root	.012	1.280[b]	2.000	206.000	.280
IV3_Font * NFC	Pillai's Trace	.022	1.176	4.000	414.000	.321
	Wilks' Lambda	.978	1.177[b]	4.000	412.000	.320
	Hotelling's Trace	.023	1.177	4.000	410.000	.320
	Roy's Largest Root	.023	2.361[c]	2.000	207.000	.097
IV1_Colour * IV2_Brightness * IV3_Font	Pillai's Trace	.018	.958	4.000	414.000	.431
	Wilks' Lambda	.982	.957[b]	4.000	412.000	.431
	Hotelling's Trace	.019	.956	4.000	410.000	.432
	Roy's Largest Root	.018	1.831[c]	2.000	207.000	.163
IV1_Colour * IV2_Brightness * NFC	Pillai's Trace	.003	.271[b]	2.000	206.000	.763
	Wilks' Lambda	.997	.271[b]	2.000	206.000	.763
	Hotelling's Trace	.003	.271[b]	2.000	206.000	.763
	Roy's Largest Root	.003	.271[b]	2.000	206.000	.763
IV1_Colour * IV3_Font * NFC	Pillai's Trace	.007	.384	4.000	414.000	.820
	Wilks' Lambda	.993	.383[b]	4.000	412.000	.821
	Hotelling's Trace	.007	.381	4.000	410.000	.822
	Roy's Largest Root	.007	.700[c]	2.000	207.000	.498
IV2_Brightness * IV3_Font * NFC	Pillai's Trace	.017	.892	4.000	414.000	.469
	Wilks' Lambda	.983	.889[b]	4.000	412.000	.470
	Hotelling's Trace	.017	.886	4.000	410.000	.472
	Roy's Largest Root	.014	1.415[c]	2.000	207.000	.245
IV1_Colour * IV2_Brightness * IV3_Font * NFC	Pillai's Trace	.016	.850	4.000	414.000	.494
	Wilks' Lambda	.984	.848[b]	4.000	412.000	.496
	Hotelling's Trace	.016	.845	4.000	410.000	.497
	Roy's Largest Root	.014	1.410[c]	2.000	207.000	.246

a. Design: Intercept + IV1_Colour + IV2_Brightness + IV3_Font + NFC + IV1_Colour * IV2_Brightness + IV1_Colour * IV3_Font + IV1_Colour * NFC + IV2_Brightness * IV3_Font + IV2_Brightness * NFC + IV3_Font * NFC + IV1_Colour * IV2_Brightness * IV3_Font + IV1_Colour * IV2_Brightness * NFC + IV1_Colour * IV3_Font * NFC + IV2_Brightness * IV3_Font * NFC + IV1_Colour * IV2_Brightness * IV3_Font * NFC

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

4.4. MANOVA 4

When conducting MANOVA 4 with the factors (colour, brightness, type font, aesthetic sensitivity) and emotional brand attachment as well as brand attitude as dependent variables, the Test of Between-Subjects Effects table reveals that the aesthetic sensitivity level significantly affects both emotional brand attachment ($F_{1,207}$=22.766) and brand attitude ($F_{1,207}$=30.133) variables at alpha levels <.001. The colour x brightness x aesthetic sensitivity interaction is statistically significant on emotional brand attachment scores ($F_{1,207}$=6.611, p =.011). See Table 14 for the full Multivariate tests table.

Table 14: MANOVA 4 – Multivariate tests table

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.830	501.919[b]	2.000	206.000	.000
	Wilks' Lambda	.170	501.919[b]	2.000	206.000	.000
	Hotelling's Trace	4.873	501.919[b]	2.000	206.000	.000
	Roy's Largest Root	4.873	501.919[b]	2.000	206.000	.000
IV1_Colour	Pillai's Trace	.019	1.964[b]	2.000	206.000	.143
	Wilks' Lambda	.981	1.964[b]	2.000	206.000	.143
	Hotelling's Trace	.019	1.964[b]	2.000	206.000	.143
	Roy's Largest Root	.019	1.964[b]	2.000	206.000	.143
IV2_Brightness	Pillai's Trace	.009	.912[b]	2.000	206.000	.403
	Wilks' Lambda	.991	.912[b]	2.000	206.000	.403
	Hotelling's Trace	.009	.912[b]	2.000	206.000	.403
	Roy's Largest Root	.009	.912[b]	2.000	206.000	.403
IV3_Font	Pillai's Trace	.031	1.631	4.000	414.000	.166
	Wilks' Lambda	.969	1.635[b]	4.000	412.000	.164
	Hotelling's Trace	.032	1.639	4.000	410.000	.163
	Roy's Largest Root	.031	3.251[c]	2.000	207.000	.041
AESTHETIC_SENS	Pillai's Trace	.135	16.040[b]	2.000	206.000	.000
	Wilks' Lambda	.865	16.040[b]	2.000	206.000	.000
	Hotelling's Trace	.156	16.040[b]	2.000	206.000	.000
	Roy's Largest Root	.156	16.040[b]	2.000	206.000	.000
IV1_Colour * IV2_Brightness	Pillai's Trace	.027	2.893[b]	2.000	206.000	.058
	Wilks' Lambda	.973	2.893[b]	2.000	206.000	.058
	Hotelling's Trace	.028	2.893[b]	2.000	206.000	.058
	Roy's Largest Root	.028	2.893[b]	2.000	206.000	.058
IV1_Colour * IV3_Font	Pillai's Trace	.003	.144	4.000	414.000	.965
	Wilks' Lambda	.997	.144[b]	4.000	412.000	.966
	Hotelling's Trace	.003	.143	4.000	410.000	.966
	Roy's Largest Root	.003	.288[c]	2.000	207.000	.750
IV1_Colour * AESTHETIC_SENS	Pillai's Trace	.002	.159[b]	2.000	206.000	.853
	Wilks' Lambda	.998	.159[b]	2.000	206.000	.853
	Hotelling's Trace	.002	.159[b]	2.000	206.000	.853
	Roy's Largest Root	.002	.159[b]	2.000	206.000	.853
IV2_Brightness * IV3_Font	Pillai's Trace	.013	.663	4.000	414.000	.618
	Wilks' Lambda	.987	.662[b]	4.000	412.000	.619
	Hotelling's Trace	.013	.660	4.000	410.000	.620
	Roy's Largest Root	.012	1.246[c]	2.000	207.000	.290
IV2_Brightness * AESTHETIC_SENS	Pillai's Trace	.000	.018[b]	2.000	206.000	.982
	Wilks' Lambda	1.000	.018[b]	2.000	206.000	.982
	Hotelling's Trace	.000	.018[b]	2.000	206.000	.982
	Roy's Largest Root	.000	.018[b]	2.000	206.000	.982
IV3_Font * AESTHETIC_SENS	Pillai's Trace	.015	.797	4.000	414.000	.528
	Wilks' Lambda	.985	.796[b]	4.000	412.000	.528
	Hotelling's Trace	.016	.795	4.000	410.000	.529
	Roy's Largest Root	.016	1.606[c]	2.000	207.000	.203
IV1_Colour * IV2_Brightness * IV3_Font	Pillai's Trace	.009	.466	4.000	414.000	.761
	Wilks' Lambda	.991	.464[b]	4.000	412.000	.762
	Hotelling's Trace	.009	.462	4.000	410.000	.764
	Roy's Largest Root	.006	.650[c]	2.000	207.000	.523
IV1_Colour * IV2_Brightness * AESTHETIC_SENS	Pillai's Trace	.031	3.299[b]	2.000	206.000	.039
	Wilks' Lambda	.969	3.299[b]	2.000	206.000	.039
	Hotelling's Trace	.032	3.299[b]	2.000	206.000	.039
	Roy's Largest Root	.032	3.299[b]	2.000	206.000	.039
IV1_Colour * IV3_Font * AESTHETIC_SENS	Pillai's Trace	.000	.013	4.000	414.000	1.000
	Wilks' Lambda	1.000	.013[b]	4.000	412.000	1.000
	Hotelling's Trace	.000	.013	4.000	410.000	1.000
	Roy's Largest Root	.000	.023[c]	2.000	207.000	.977
IV2_Brightness * IV3_Font * AESTHETIC_SENS	Pillai's Trace	.005	.271	4.000	414.000	.897
	Wilks' Lambda	.995	.270[b]	4.000	412.000	.897
	Hotelling's Trace	.005	.269	4.000	410.000	.898
	Roy's Largest Root	.005	.499[c]	2.000	207.000	.608
IV1_Colour * IV2_Brightness * IV3_Font * AESTHETIC_SENS	Pillai's Trace	.003	.140	4.000	414.000	.967
	Wilks' Lambda	.997	.140[b]	4.000	412.000	.967
	Hotelling's Trace	.003	.139	4.000	410.000	.968
	Roy's Largest Root	.003	.276[c]	2.000	207.000	.759

a. Design: Intercept + IV1_Colour + IV2_Brightness + IV3_Font + AESTHETIC_SENS + IV1_Colour * IV2_Brightness + IV1_Colour * IV3_Font + IV1_Colour * AESTHETIC_SENS + IV2_Brightness * IV3_Font + IV2_Brightness * AESTHETIC_SENS + IV3_Font * AESTHETIC_SENS + IV1_Colour * IV2_Brightness * IV3_Font + IV1_Colour * IV2_Brightness * AESTHETIC_SENS + IV1_Colour * IV3_Font * AESTHETIC_SENS + IV2_Brightness * IV3_Font * AESTHETIC_SENS + IV1_Colour * IV2_Brightness * IV3_Font * AESTHETIC_SENS

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Table 15: MANOVA 4 – Tests of between-subjects effects

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	EBA_Score	65.136[a]	23	2.832	2.049	.005
	ATT_SCORE	132.946[b]	23	5.780	2.620	.000
Intercept	EBA_Score	691.927	1	691.927	500.634	.000
	ATT_SCORE	2221.474	1	2221.474	1006.928	.000
IV1_Colour	EBA_Score	.007	1	.007	.005	.944
	ATT_SCORE	5.059	1	5.059	2.293	.131
IV2_Brightness	EBA_Score	2.490	1	2.490	1.801	.181
	ATT_SCORE	2.376	1	2.376	1.077	.301
IV3_Font	EBA_Score	8.011	2	4.005	2.898	.057
	ATT_SCORE	11.198	2	5.599	2.538	.081
AESTHETIC_SENS	EBA_Score	31.466	1	31.466	22.766	.000
	ATT_SCORE	66.478	1	66.478	30.133	.000
IV1_Colour * IV2_Brightness	EBA_Score	2.632	1	2.632	1.904	.169
	ATT_SCORE	.621	1	.621	.282	.596
IV1_Colour * IV3_Font	EBA_Score	.038	2	.019	.014	.986
	ATT_SCORE	.955	2	.477	.216	.806
IV1_Colour * AESTHETIC_SENS	EBA_Score	.441	1	.441	.319	.573
	ATT_SCORE	.312	1	.312	.142	.707
IV2_Brightness * IV3_Font	EBA_Score	.418	2	.209	.151	.860
	ATT_SCORE	4.310	2	2.155	.977	.378
IV2_Brightness * AESTHETIC_SENS	EBA_Score	.042	1	.042	.030	.862
	ATT_SCORE	.064	1	.064	.029	.864
IV3_Font * AESTHETIC_SENS	EBA_Score	1.419	2	.709	.513	.599
	ATT_SCORE	6.951	2	3.475	1.575	.209
IV1_Colour * IV2_Brightness * IV3_Font	EBA_Score	1.470	2	.735	.532	.588
	ATT_SCORE	1.274	2	.637	.289	.750
IV1_Colour * IV2_Brightness * AESTHETIC_SENS	EBA_Score	9.137	1	9.137	6.611	.011
	ATT_SCORE	7.430	1	7.430	3.368	.068
IV1_Colour * IV3_Font * AESTHETIC_SENS	EBA_Score	.007	2	.003	.002	.998
	ATT_SCORE	.065	2	.032	.015	.985
IV2_Brightness * IV3_Font * AESTHETIC_SENS	EBA_Score	.530	2	.265	.192	.826
	ATT_SCORE	2.167	2	1.083	.491	.613
IV1_Colour * IV2_Brightness * IV3_Font * AESTHETIC_SENS	EBA_Score	.022	2	.011	.008	.992
	ATT_SCORE	.800	2	.400	.181	.834
Error	EBA_Score	286.095	207	1.382		
	ATT_SCORE	456.681	207	2.206		
Total	EBA_Score	1920.080	231			
	ATT_SCORE	5389.667	231			
Corrected Total	EBA_Score	351.232	230			
	ATT_SCORE	589.628	230			

a. R Squared = .185 (Adjusted R Squared = .095)

b. R Squared = .225 (Adjusted R Squared = .139)

Aesthetic sensitivity on its own has an impact on emotional brand attitude ($F_{1,207}$=22.766, p<.001) and brand attitude score as well ($F_{1,207}$=30.133, p<.001).

Table 16: MANOVA 4 – Effect of aesthetic sensitivity on emotional brand attachment and brand attitude

5. AESTHETIC_SENS					
				95% Confidence Interval	
Dependent Variable	AESTHETIC_SENS	Mean	Std. Error	Lower Bound	Upper Bound
EBA_Score	Low Aesthetic Sens.	1.827	.188	1.457	2.197
	High Aesthetic Sens.	2.818	.089	2.643	2.993
ATT_SCORE	Low Aesthetic Sens.	3.442	.237	2.974	3.909
	High Aesthetic Sens.	4.882	.112	4.661	5.103

Individuals within the high aesthetic sensitivity category report stronger emotional brand attachment ($M_{highaesthetic}$=2.818 versus $M_{lowaesthetic}$=1.827) as well as more positive global evaluations of the brand ($M_{highaesthetic}$=4.882 versus $M_{lowaesthetic}$=3.442) at first exposure. As a result, **H8a** (*Individuals with high (compared to low) aesthetic sensitivity will have a more positive attitude towards the brand when exposed to an unknown brand's logo)* and **H8b** (*Individuals with high (compared to low) aesthetic sensitivity will have greater emotional brand attachment score when exposed to an unknown brand's logo*) are both supported hypotheses.

Table 17: MANOVA 4 – Effect of logo colour x brightness x aesthetic sensitivity interaction term on emotional brand attachment

13. Logo Colour * Brightness * AESTHETIC_SENS							
						95% Confidence Interval	
Dependent Variable	Logo Colour	Brightness	AESTHETIC_SENS	Mean	Std. Error	Lower Bound	Upper Bound
EBA_Score	Blue	Bright	Low Aesthetic Sens.	1.311	.506	.314	2.309
			High Aesthetic Sens.	2.754	.167	2.425	3.084
		Light	Low Aesthetic Sens.	2.446	.360	1.737	3.155
			High Aesthetic Sens.	2.750	.174	2.406	3.094
	Red	Bright	Low Aesthetic Sens.	2.029	.295	1.447	2.610
			High Aesthetic Sens.	2.639	.186	2.272	3.006
		Light	Low Aesthetic Sens.	1.523	.302	.928	2.118
			High Aesthetic Sens.	3.129	.182	2.769	3.489
ATT_SCORE	Blue	Bright	Low Aesthetic Sens.	2.963	.639	1.703	4.223
			High Aesthetic Sens.	4.830	.211	4.414	5.247
		Light	Low Aesthetic Sens.	3.622	.455	2.726	4.518
			High Aesthetic Sens.	4.437	.220	4.003	4.872
	Red	Bright	Low Aesthetic Sens.	3.604	.373	2.869	4.338
			High Aesthetic Sens.	4.706	.235	4.242	5.169
		Light	Low Aesthetic Sens.	3.579	.381	2.827	4.330
			High Aesthetic Sens.	5.554	.230	5.099	6.008

The emotional brand attachment scores are impacted by colour x brightness when it interacts with aesthetic sensitivity (p=.011). When analyzing the means it can be concluded that high aesthetic sensitivity individuals report stronger levels of emotional brand attachment at first exposure. We can also observe that EBA score means for the high aesthetic sensitivity category are almost the same within the blue logo condition ($M_{blue\ x\ bright\ x\ highaesthetic}$= 2.754 versus $M_{blue\ x\ light\ x\ highaesthetic}$=2.750). Whether the logo is bright or light blue does not affect the EBA scores within high aesthetic sensitivity group. We can definitely see a difference in means amongst the low aesthetic sensitivity individuals within the bright and light blue logo conditions. People that are less sensitive to product or brand aesthetics seem more emotionally attached to the light blue logo than bright blue at first exposure ($M_{blue\ x\ light\ x\ lowaesthetic}$=2.446 versus $M_{blue\ x\ bright\ x\ lowaesthetic}$=1.311).

As for the red logo conditions and the resulting emotional brand attachment, individuals characterized as highly sensitive to aesthetics reported stronger EBA levels when presented the light red version of the logo ($M_{red\ x\ light\ x\ highaesthetic}$=3.129) versus the bright red version ($M_{red\ x\ bright\ x\ highaesthetic}$=2.639). Low aesthetic sensitivity individuals reported stronger EBA scores when presented the bright red logo compared to the light red one ($M_{red\ x\ bright\ x\ lowaesthetic}$=2.029 versus $M_{red\ x\ light\ x\ lowaesthetic}$=1.523). The results with the red logo conditions are interesting since according to the literature we would expect to find stronger emotional brand attachment within the bright red logo conditions because of the affective and passionate characteristics provided by the colour bright red.

5. SUMMARY OF FINDINGS

Even though many of the hypotheses were not supported, additional analyses including NFC and aesthetic sensitivity provided more insight on the effects of colour hues and font types as well as brightness on pleasure, arousal, thought valence and number of thoughts when exposed to a logo for the first time.

It is interesting to discover that aesthetic sensitivity strongly affects the model. On its own, the aesthetic sensitivity variable affects all dependent variables tested in this research. It also significantly affects the relationship between colour x brightness and EBA. In MANOVA 4, the effect of colour x brightness on EBA is not significant (p=.169). However colour x brightness x aesthetic sensitivity reports a statistically significant effect on EBA (p=.011).

NFC was expected to affect cognitive dependent variables. On its own, NFC did not affect any dependent variable. However, NFC did moderate the relationship between colour and arousal. Also, when NFC interacted with brightness and font type, it had an effect on the number of thoughts respondents expressed. Another interesting finding includes logo brightness level's effect on thought valence.

See Tables 18 and 19 below for a summary of the findings, F and significant p-values.

Table 18: Summary of statistically significant relationships

Dependent Variables / Independent Variables	Pleasure	Arousal	Thought Valence	Thought Count	Emotional Brand Attachment	Brand Attitude
Colour	ns	ns	ns	ns	ns	ns
Brightness	ns	ns	$F(1,207)= 4.310$*	ns	ns	ns
Font Type	ns	ns	ns	ns	ns	ns
NFC (High/Low)	ns	ns	ns	ns	ns	ns
Aesthetic Sensitivity (High/Low)	$F(1,207)= 22.739^{***}$	$F(1,207)= 9.34^{**}$	$F(1,207)= 12.009^{*}$	$F(1,207)= 4.269^{*}$	$F(1,207)= 22.766^{***}$	$F(1,207)= 30.133^{***}$
Colour x NFC	ns	$F(1,207)= 6.518^{*}$	ns	ns	ns	ns
Brightness x Font x NFC	ns	ns	ns	$F(2,207)= 3.233^{*}$	ns	ns
Colour x Brightness x Aesthetic Sensitivity	ns	ns	ns	ns	$F(1,207)= 6.611^{*}$	ns

*p-value< .05
**p-value< .01
***p-value< .001
NS = not significant (p-values are above .05)

Table 19: Summary of findings (supported vs. not supported hypotheses)

HYPOTHESES	CONCLUSION
H1a: A blue (compared to red) logo colour significantly increases perceptions of pleasantness at initial exposure **H1b**: A red (compared to blue) logo colour significantly increases perceptions of arousal at initial exposure	Not supported
H2a: Blue with a high brightness level (compared with a low brightness level) logo colour significantly increases pleasantness. **H2b**: Red with a low brightness level (compared with a high brightness level) logo colour significantly decreases arousal.	Not supported

H3a: The use of a harmonious (compared with a organic) type font within the logo significantly increases perceptions of pleasantness **H3b**: The use of an organic (compared with a harmonious) type font within the logo significantly increases perceptions of arousal	Not supported
H4b: A red (compared to blue) logo colour with an organic type font significantly increases perceptions of arousal **H4a**: A blue (compared to red) logo colour with a harmonious type font significantly increases perceptions of pleasantness	Not supported
H5a: Low (compared to high) NFC individuals have significantly more positive thoughts about the brand after initial exposure to logo design elements presented without additional information. **H5b**: High (compared to low) NFC individuals will have a significantly greater number of thoughts about the brand after initial exposure	Not supported
H6a: Low (compared to high) NFC individuals will score significantly higher on emotional brand attachment at initial exposure of a logo **H6b**: Within the low NFC sample, emotional brand attachment score will be significantly higher for the individuals exposed to the red logo versus the blue logo	Not supported
H7: A blue logo colour with a high brightness level (compared to red with high brightness level) increases brand attitude score when exposed to an unknown brand's logo	Not supported
H8a: Individuals with high (compared to low) aesthetic sensitivity will have a significantly more positive attitude towards the brand when exposed to an unknown brand's logo **H8b**: Individuals with high (compared to low) aesthetic sensitivity will have significantly greater emotional brand attachment scores when exposed to an unknown brand's logo	Supported

H9a: Individuals with high (compared to low) aesthetic sensitivity scores will report significantly higher pleasure and arousal scores when first exposed to an unknown brand's logo **H9b**: Individuals with high (compared to low) aesthetic sensitivity scores will report significantly more positive thoughts about an unknown brand's logo	Supported

6. ADDITIONAL OBSERVATIONS – RESULTS

Even though H1a, H1b, H2a and H2b were not supported, Figures 4 and 5 demonstrate that the relationships move in the expected direction. The plots not only compare blue against red logos, but also compare bright against light logos for both hues. While the means were not significantly different enough to support these hypotheses, it can be observed that red does evoke more arousal than blue, no matter the brightness level. It can also be observed that bright blue is more pleasurable than light blue, which is in accordance with the literature discussed above. When we observe the results for the red logo only, we can see that light red is more pleasurable than bright red, which is also in line with the literature.

The one quite interesting and unexpected discovery here is that light red scores higher in terms of pleasantness than bright and light blue. This implies that perhaps brightness level weighs a lot on perceptions of pleasantness. Perhaps light red as depicted in the logo is simply processed as the colour 'light pink', which as a result affects perceptions.

Figure 4

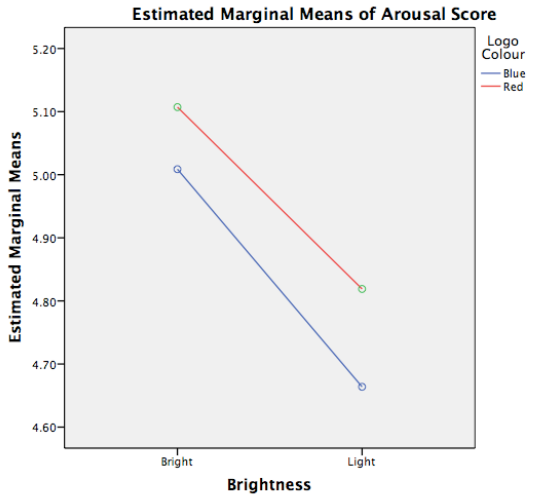


Figure 5

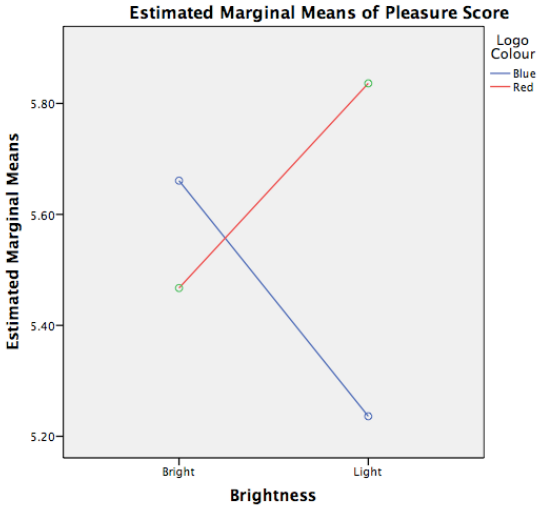


Table 20: Effects of logo colour x brightness interaction on pleasure and arousal scores

4. Logo Colour * Brightness

Dependent Variable	Logo Colour	Brightness	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Pleasure Score	Blue	Bright	5.673	.233	5.214	6.133
		Light	5.248	.227	4.801	5.696
	Red	Bright	5.464	.235	5.001	5.927
		Light	5.826	.231	5.371	6.281
Arousal Score	Blue	Bright	5.010	.205	4.607	5.413
		Light	4.673	.200	4.280	5.066
	Red	Bright	5.101	.206	4.694	5.508
		Light	4.816	.203	4.416	5.216

An interesting finding is that font type on its own does not impact any dependent variables. When interacting with brightness and NFC it impacts thought count (cognitive response variable) as discussed above. It is still worth mentioning that type font on its own revealed a statistically significant Roy's Largest Root ($F_{2,207}$=3.251, p =.041) when aesthetic sensitivity was included as an independent variable and the dependent variables were EBA and brand attitude score. Unfortunately the Test of between subjects effects table revealed p-values

slightly above 0.05 on emotional brand attachment (p =.057 for its effect on EBA), and as a result was ruled as not significant.

The role of type font on pleasure and arousal, even though not statistically significant, follows the expected direction. When viewing the means, we observe that the pleasure score is increased when the font is harmonious ($M_{harmonious}$ = 5.781) whereas it is the arousal score that is increased when exposed to a logo with an organic font ($M_{organic}$= 5.038). This was assumed in H3a and H3b, and unfortunately the differences in means are not significant enough for this to be statistically significant.

Table 21: Effects of type font on pleasure and arousal scores

Dependent Variable	Type font	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Pleasure Score	Harmonious Font	5.781	.201	5.385	6.176
	Organic Font	5.554	.203	5.154	5.954
	Neutral Font	5.325	.198	4.934	5.715
Arousal Score	Harmonious Font	4.917	.176	4.570	5.264
	Organic Font	5.038	.178	4.687	5.390
	Neutral Font	4.745	.174	4.403	5.088

Figure 6

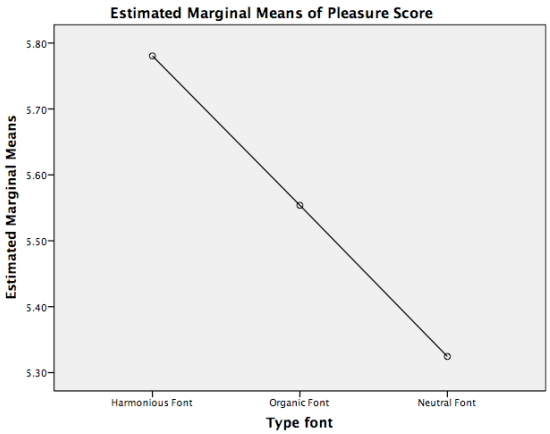
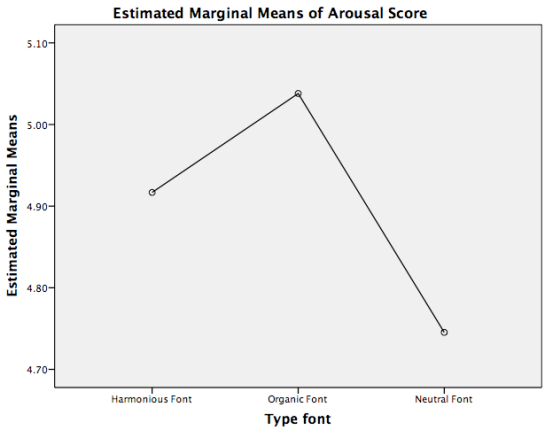


Figure 7



After reading many of the thoughts respondents had on the logo they were presented with, High NFC individuals often stated that they didn't know the brand, and had not enough information to make up their mind or have anything to say about the brand. As a result, the rejection of H5b (*High (compared to low) NFC individuals will have a significantly greater number of thoughts about the brand after initial exposure)* comes to no surprise. It is true that the participants were not given much information about the brand besides it being a soap brand, and as the literature indicates, individuals with a high NFC need more information to make up their minds about the brand. Since they had no way of taking more information about the logo and evaluate accordingly, they probably had less thoughts. As a result, high NFC individuals might have less cognitive reactions when exposed to a logo they never encountered before.

7. ADDITIONAL ANALYSIS – EXPERTS

The additional analysis begins with a short introduction of each expert profile, followed by the essentials of the discussions that took place, the key points during discussions as well as the links that can be made between the interesting content that was revealed during the interviews and the consumer results discussed above.

7.1. Sample

To provide additional reasoning to the results gathered from the consumer responses to the self-administered questionnaire, four experts (50% female, mean age = 43) in the marketing strategy and branding industry were also interviewed using a semi-structured interview guide. These experts are professional contacts and therefore were not randomly selected. They however all meet strict selection criteria. Each expert possess over 10 years of professional experience in the field and hold careers either as self-employed or in renowned marketing agencies that are

member of the Association of Quebec Advertising Agencies.

7.2. Procedure

The experts' data was gathered using a semi-structured interview process. The interviews were taped and then scripted. The voice records are kept on the primary researcher's server only. The duration of each of the four interviews was approximately one hour.

7.3. Expert profiles

The first expert interviewed holds the VP Branding Strategy position in her place of work, holds a bachelor's degree in graphics and has been working in the marketing industry for over 30 years. Before filling the VP Branding position, this accomplished professional worked as Creative Director for 15 years.

The second expert interviewed also has a Creative Director background and has been working in the advertising industry for over 25 years. He currently runs his own marketing agency based in Montreal.

The third expert interviewed is a Senior Strategist with a Creative Director background as well with 12 years of experience in the field.

The fourth expert interviewed is a Creative Director and partner at his agency. He holds certificates in psychology, sociology as well as advertising and a BBA in design. He was a leading Art Director at only 26 years old and initially started his career as a copywriter for a world-renowned marketing company.

7.4. Results and Discussion

When creating a new brand, the logo is indeed very important since it is the littlest meaningful design element that embodies the values of the organization. However, it is not always the most important element, especially since it is mostly never presented in a vacuum; exceptions exist such as in the case where the logo is presented on clothing. Nevertheless, when a potential consumer experiences a brand for the first time, a careful launching strategy should be adopted where the brand is consumed in an experiential manner. The marketing managers' short-term goals are association and memorability. Medium-term goals are connection and recall. Finally, long-term goals are attachment and loyalty. This is in line with professional practices and strategies adopted in marketing agencies. The complete picture of the logo (the shapes used, the font, the colours) will have an impact, and it is important to do a proper competitor analysis of the brands and map them to find out whether or not there is an opportunity to differentiate the brand from all others.

As one of the experts points out, the best way to differentiate a brand from all others is to stray true to the company, instead of trying to please consumers. Staying true to the company means staying true to the values that made the brand what it is, and individuals like the brand because the company values are a reflection of their own. View below a summary of the responses as well as sample questions and interesting responses.

Table 22: Summary of interview responses

Top brand design elements to maximize brand attention (prioritized)	• Colour – shape • Superficial before cognitive • Tone more than colour or font: soul of company • Name – logo – font – mark – colour • Colour – shape – pattern
Level of impact of brand logo at initial exposure	• Logo never does 100% of the job • It depends on context, characteristics of individuals, capacity of designer • It usually is not presented in vacuum
Outcomes desired when building brand identity	• Brand association • Memorability • Connection – awareness – recall – familiarity • Brand love • Attachment, likeability and loyalty
Colour hues and font types used to create pleasurable or arousing responses	• We try to stay away from 'pre-made' recipes • If explored in an experiential way where the whole room makes the brand comes to life then yes. • That a logo on its own creates emotions – skeptical. • Most of it is intuitive – it feels right

Table 23: Sample questionnaire responses

1 - What do you consider are top brand design elements that must be taken into account to maximize brand attention when compared to other brands of the same category?
Expert 1. Colour then shape then content: superficial before cognitive sequence "Consumers are bombarded with brand identities all the time. Between 3500 and 7500 brands are exposed to consumers daily; the brain has the capacity to identify around 100 and of those will recall approximately 10 brand images daily. Our work is to make sure that our clients' brands are within the 10 memorized brands."

Expert 2.

Tone more than colour or font: soul of company

"Colours have a lot to do with tone. But they often have nothing to do with the colour scheme of the logo. Design elements trigger a realm, a universe around a company and its products and helps us like the company."

"The first things that define the brand: soul of the company, company and its actions and values and after that comes tone and matter that generate communications that have a common look (unique selling language) and after that you have a logo part visual, part type."

"A logo is a stain"

Expert 3.

Brand name, then design of the logo: name – logo – font – mark – colour

"The brand name and then the design of the logo. Inside the design one of them is the font, the brand mark (symbol) is last because a lot of times it's more subtle but in the long the little subtlety can have a big impact especially in today's digital age when you're thinking of an app or an app where a little mark (a little avatar) if you have well thought out that mark, and let's say on the outside packaging it's not a big deal, in other activations it's a big deal. So product – name – logo – font – mark - colours."

Expert 4.

Colour – shape – pattern

"Does the colour fit the tone and brand? Then, shape – so logo mainly but also the expression of the shapes around the logo. So the expression of the brand outside of the logotype. Sometimes you create the logotype and you need to express the brand in lots of various way so there is a

pattern generally, a pattern could be made of lines shapes rounds, etc."

"There is also the notion of brand archetype, so as soon as you develop the identity of a brand, the identity constitutes generally of 1,2, or 3 typographies, one for the logo and generally 2 or 3 for the rest of the communications. And then as soon as you develop the archetype, then you need to stick to the archetype and you do not want to change it over time. You want to evolve it, but when you literally spin it on a Z, generally people react very badly."

2- How much impact do you believe a brand's logo has when the consumer is initially exposed to the brand? Why?

Expert 1.

Alone it will never do 100% of the job.

" Le logo ne fera jamais 100% du travail. Le logo n'existera pas dans un vacuum à l'extérieur d'une pièce de communication a moins que ca soit un vêtement, quelqu'un va porter FCUK – tu vas être exposé à FCUK et te demander « mais pourquoi c'est écrit FCUK au lieu de FU** » puis à se moment là la marque va avoir une exposition qui est première et par la suite ce logo la va avoir une importance parce qu'il n'y a pas d'autres contexte à observer. "

"A logo of a company is the littlest thing that embodies the meaning of that organization."

Expert 2.

Not much impact. It helps remember.

"Not that much… it's a doorway. It helps me remember. It's linked to the other commercial, the other packaging, that specific company. The role it has to create links with other expressions of the company."

"It's more about what does it say and *how does it feel* and a lot of that is *highly intuitive*."

Expert 3.

Big subconscious impact.

“I think it has a big impact subconsciously. I don’t think a lot of people are standing there and thinking ‘I’m going to purchase a brand because I don’t like Sans Serif font.’ ”

“I think when it’s launched the name has to really speak a lot on an emotional level and be as aspirational or already demonstrating shared values with the consumers.”

“Generally the name would speak to a consumer first. And then the execution of the name (the logo). Font color, thickness, expressions.”

Expert 4.

Logo can have a big impact if well executed.

It all comes down to the capacity of the designer or capacity of brand manager to create a logo that really conveys the why of the company. At a certain point, you need to answer a question in the logo, you need to give it a good perception of what you are, what you do and what you are here for. Are you a design company? Are you a minimalist, are you a small PME, are you a big global company – there is a lot of things that the logo can say and I think that if the message and the why is well addressed in the logo, yes I feel that the logo can have a big impact.

“For me the proper way to introduce a logo is to associate it with a product. Otherwise a logo for a logo, it’s the purest form of communication of an idea – so it’s sometimes symbolic, sometimes it’s just an expression that communicates strength, fragility, which are the archetype.”

“So first you need to ask yourself, what is the archetype of my brand, and then if you say it’s strength, you need to have a logo which demonstrates strength in the typography, icons, colour”

3 - As a marketing expert, what are the outcomes you wish to achieve when building a brand's visual identity?
Expert 1. Brand association "Every marketing mandate has a different objective so there's not one answer. But brand identity is going to be really to do brand association and it's going to be one element. If I show you the ad of a brand and hide the logo and you are still able to tell me what brand it is - that's strong branding. Doesn't only rely on the logo: tone of voice, colour, font."
Expert 2. Memorability, loyalty "I like the word identity because the core idea is building something from nothing. It's replacing the generic avatar by your picture. To be memorable." "I want to be loyal to the company"
Expert 3. Connection, then brand awareness, recall, familiarity, brand love "We want a connection right off the bat. Then we move into brand awareness, recall, and brand familiarity. *We want them to love it.* And by connection I mean it needs to speak to their beliefs and value system or aspirations to become…"
Expert 4. Brand attachment, likeability, loyalty

"I don't feel you can go into design and begin with the idea that you are going to create a logo that will result in high emotional attachment. I really don't believe in that. I feel that you can express something, and then the expression of that is going to be liked or not, by the people that can relate or not to this idea." "You can't relate with everyone, so what you do is create a logo that is true to the brand, and or a branding true to the brand."
Do you use certain colour hues or font types to evoke certain emotions?
Expert 1. Not really – we try our best to differentiate from competition "On essaie d'éviter les recettes toutes faites. Pour nous c'est pas la que ca se joue. Chaque marque doit avoir sa recette à elle. Nous on est à propos de trouver la différenciation et comment la marque va se démarquer de sa concurrence. On veut s'assurer que les clients ne soient pas confus."
Expert 2. "It's true if I put you in a room with walls filled with the red walls or blue walls. To conclude that if I put a dot over the i blue you will feel calmer, it's stupid." "I may not need an exposé not to use flashy colours if I'm talking about earthy mothers! I wouldn't go into brownish and beiges because it's a bit boring but my starting reflex would be brown and green. Soon enough though I would go into a dark blue and not because it's night time, but simple because it feels soothing and I don't know, *it feels right*."

Expert 3.

"Intuition as a marketer comes out and that's probably why there's not a lot of literature on the subject. Sometimes you think it as one way and when you see it executed it's completely different."

"The depth of the colour (dark hue and the pastel) changes everything."

Expert 4.

"There is the obvious association of "script" being more human, and "font serif" being noble, "sans-serif" more modern and stable and strong. So of course typography is crucial in explaining who the brand is. That goes for colour as well. Example, yellow sometimes stresses appetite appeal, and it's seen as a joyful colour."

"Colours do mean something and we try to be sensible to that. We don't use the colours uniquely because of what they are supposed to express, because sometimes it's true (the color psychology literature) but sometimes you need to break the pattern."

"Sometimes it works to create contrast. Let's say you want to communicate strength, the obvious choice in typography would be sans serif, however sometimes you can express that with slab or script typography. Another type that is not an obvious choice but that when played with it could create a strength impression is script but made with claws."

"We need to be careful of not falling within the obvious representations of branding. (fast food = red and yellow's McDonalds for example)"

"I feel if you really want to transfer your identity into a real emotion, you need to explore the use of brand identity in an experiential way. So if you just put a logo on a wall and you say "Oh would you feel more aroused by this logo?" – obviously not. But if you create a room where the

expression of your brand is coming to life, with an animation and the colours play a big role in the way you are living the experience, then yes. We have been doing stuff that transported people into a dimension that was very emotional. But in order to do that you need to really submerge them with an expression of the brand that comes to life."

How much impact do you believe a brand logo has on consumers' attitude / emotional attachment about the brand when first exposed to the brand?

Expert 1.

"Il y a une dimension émotionnelle – la couleur qui te plait est importante, la forme de la chaussure mais tu es prêtes à payer pour une marque qui t'apporte une valeur fonctionnelle. "

"Ce dont tu parles, je décrirais ça comme des codes visuels. Depuis qu'on est tout petit, on grandis et on fait des associations dans notre tête – bleu = fonctionnel, écriture scripte = sophistiqué. C'est comme le code de la route. "

"Pour faciliter la compréhension (schéma qu'on a déjà dans notre tête) d'aller a l'envers des associations qui sont déjà dans la tête des gens, c'est inhabituel. Par contre il y a quand même des exceptions, des marques qui veulent être disruptives. "

Expert 2.

"A high-tech startup would expect a glossy logo because he wants to be a me-too and wants a lookalike or be considered as good. From time to time someone redefines a category – makes colours for chips, creates black pasta packages."

"When you build visuals of the brand – you want to be credible enough (and credibility comes from similarity) – and different enough. The credibility sometimes comes from creating a brand that is a lookalike of another brand."

Expert 3.

"Emotional brand attachment to me means that person respects the brand, connects with the brand would probably advocate for the brand. When people fight over a brand, they really are fighting over what it represents. And that is because what the brand represents is their values, parallel to the person's values."

"The Net Promoter Score shows where are your detracting factors (don't connect to the brand and they won't buy again) and your brand advocates (someone who loves, defends it, vouches and tells friends about the brand – example: iPhone vs. Samsung)."

Expert 4.

"The emotional attachment will come from, I feel, the real action that the brand is going to take in our society, example the swoosh of Nike; I'm pretty sure that when Nike arrived and created that swoosh, nobody came and said, "Oh my god what a great logo, I can relate to that". So what people like about Nike is not the logo, it's what the brand has done to them."

Concluding Remarks
Expert 1. "We are emotional animals first. Example: you have done your analysis and the two answers are identical in the end. Decisive moment: emotional takes over. Finding new names for new companies is very hard. The emotional dimension is so strong – rational side is there but in the end the decision will be based on the emotions. A reason why it just doesn't "feel" right will always be found."
Expert 2. "Because the role of the brand is creating an identity, therefore making it unique in the market, building a brand often goes through investigating the category – I want to fit in but not too much. It's like existing as a human being and saying I want to be different than other people – you really just want to be yourself."
Expert 3. "The key to create emotional brand attachment is to really understanding the needs and wants of the consumer and clearly identifying what the brand delivers and what it could represent to them in their lives."
Expert 4. "I feel the vast majority of people when they are looking at the logo, they are not trying to understand something, they are just *feeling* something, *they have impressions*. It's another way to register who you are. 'You tell me your name' vs. 'you tell me your name and I see your face'. It'll be much easier to have an impression of you when I see your face, how you speak, move…"

8. CONTRIBUTIONS

This study contributes toward better understanding and assessing emotional and cognitive responses to a logo at first exposure. More precisely, it contributes to the current literature by analyzing emotional and cognitive responses that result from logos of not only different color hues but also while adding two levels of brightness and including two main categories of type fonts as well.

Studies that analyze type font and their effects on responses usually focus their analysis on dozens of font types; this study looks at a simple distinction: cursive (handwritten) versus squared fonts. Even though font did not come out as having a statistically significant impact on emotional or cognitive responses, a trend can be observed where harmonious font types are generally found to be more pleasant than organic font types and organic font types are generally more arousing than harmonious font types. This is in line with current literature.

Including NFC level as a moderator of the consumer responses contributes towards the marketing literature by applying the NFC concept in a different way. While NFC is usually used to better comprehend information processing and message persuasion within advertising material with more content (TV ad or newspaper ad) this research uses NFC as an individual characteristic of the consumer. A standalone logo is used as a medium to communicate the brand message. As the additional experts analysis reveals, the logo is in fact the first and littlest thing that embodies the meaning of an organization.

While colour on its own did not provide statistically significant results on the emotional or cognitive responses, the interaction of colour with NFC revealed arousal to be a significant emotional response. Like the experts mentioned in their interviews, there is more to look at than just the colours of a logo; individual characteristics make a difference. NFC had an impact on responses at a cognitive level. Emotional brand attachment and attitude towards the brand (global

brand evaluations), both brand outcomes, were not affected by NFC level in this research. As a result, another contribution provided by this research is that NFC should not be ignored; rather it should be included early in the brand perception process.

This study also contributes to the marketing literature by providing clear thoughts and expert opinions on concepts that researcher might sometimes take for granted when studying branding. Psychologists have been stating for a very long time that red elicits excitement and stimulation and as the experts mention, it might be true when someone is put in a room with red walls; however this does not seem to always be the case when an individual is analyzing a logo on its own. While the colour red seems to instil various responses, sometimes arousal other times not so much, it is found through the consumer survey that blue does create this general feeling of being calming, pleasant, soothing. Although the blue logo condition did not provide significant results on pleasure, the thoughts stated by respondents concerning the blue logos are in accordance with the literature (see Table 24 below).

Table 24: Summary of thoughts – Blue logo with high and low brightness level conditions

Blue high brightness level (all fonts mixed)	• Bright • Captivating • It looked easy to use • Logo looks too plain • Professional, useable, relevant, clean • Simple • Great • Individuality! Uniqueness! And be strong!! • Looks like they are trying to look like a simple, minimal brand. Yet have a unique name
Blue low brightness level (all fonts mixed)	• Calm, simple, relaxing • Coffee • High end, good product label • I love the shade of blue – blue is my favorite color, very calming • Interesting helpful • Simple • Soft and smooth • Soothing

Aesthetic sensitivity is an individual characteristic that turns out to be quite significant when evaluating emotional and cognitive responses. When evaluating a brand's logo for the first time, all the consumers see are the physical cues of the logo. How sensitive an individual is to product or brand aesthetics seemed as a result somewhat logical to include in the model, and with reason. On its own, the sensitivity level to aesthetic properties of a brand impacted emotional response variables (pleasure, arousal) as well as the cognitive response variables and the final brand outcomes (emotional brand attachment and brand attitude) at first exposure. Very few

branding studies have included aesthetic sensitivity; therefore this is another contribution to literature that this study provides.

9. MANAGERIAL IMPLICATIONS

One important factor that needs to be remembered is that a brand logo is part of a greater brand sphere. When discussing brand identity, the logo is the littlest thing that embodies the brand therefore it makes sense for academic studies to use logos when studying branding. Indeed, when an individual is placed in a room with four red walls they might feel arousal, however the same cannot be assumed about the littlest thing that embodies an organization – the logo. This study did not find significant statistical evidence that a standalone red or blue logo at initial exposure creates arousing or calm and pleasant responses. While it is generally known that red is stimulating and blue a calming colour, results and expert opinions reveal that it is less likely for a standalone logo to have this effect on individuals at first exposure. Nevertheless, trends from the data still indicated that cursive fonts made individuals feel more aroused and squared fonts made individuals feel more pleasant. This should be taken into consideration when designing new brand identities. It is found that aesthetic sensitivity plays a big role in eliciting emotional brand attachment and this is a finding that should speak to professionals when they are in the creative process because it means that superior design and aesthetics impacts perceptions instantaneously. Finally, when a brand is put on the market for the first time and potential consumers are initially exposed to it, the best way to have a strong and definitive impact is to create an experience around the brand. The brand essence, which includes the combination of such elements as colour palette and typography styles, creates an atmosphere that consumers can feel.

10. LIMITATIONS

This study faces several limitations. 79.2% of the participants are females. An ideal population would have consisted of 50% males and 50% females, since perhaps logo and brand perceptions are different between genders. The low brightness versions of the logo were sometimes perceived as more feminine, especially within the red condition, and as a result this could have affected the results. When asked thoughts about the brand, six responses within the red logo with low brightness level condition included the word 'feminine' and the word feminine was only used within this low brightness level condition. 85.3% of respondents are Caucasian, therefore making the sample not ideal in terms of ethnic diversity. Since the brand logos were presented on the web, the font within the logo was presented in white and this could have had an effect on the participants' responses. Kofave as a brand name was not pre-tested to ensure non-familiarity even though it ended up scoring extremely low on the familiarity scale. The sub-samples within the various logo conditions included an average of 19.25 individuals per condition. This ratio is acceptable however a higher number of respondents per condition would be ideal. The dependent variable 'thought count' is a range variable found by simply adding the number of thoughts per participant. Thus, the variable is a range and not categorical, and therefore might be Poisson distributed. Thus a MANOVA is usually not recommended with Poisson distributions with low ranges (the maximum number of thoughts confirmed is 7) and this might explain why the means were so low. Finally, more than 75% of participants were coded as being highly sensitive to aesthetic properties of products/brands, which as result limits the generalizability of the findings.

11. FUTURE RESEARCH

Future research should look at more colour hues within the visual spectrum, such as the middle yellowish-green colour and replicate the research with low/high brightness levels. There exists a trend today where brands use multiple vibrant colour schemes to create brand atmospheres that easily attract the eyes of potential consumers. Nike and Spotify are examples of successful brands that are able to differentiate themselves from the competition by exploiting such colours. It can be hypothesized that these vibrant (high brightness) colours elicit excitement and passion, however testing this would be interesting because bright colours are generally found to be more pleasant compared to their low brightness equivalents. This provides interesting research questions for the high/low brightness levels of yellowish-green hues.

Including the 'Dominance' aspect of Albert and Mehrabian's (1974) model along with different type fonts (display, all capital letters) would also be interesting in order to view the effects on the brand perceptions and outcomes. It would be interesting especially since there exists growing interest in font size effects on such responses (Bayer, Sommer and Schacht, 2012). It could be hypothesized that brands with display fonts will be perceived as more stable and assertive, however the logo on its own might not reflect dominance. It would be interesting to evaluate how many respondents actually mention dominance as a brand perception. Branding experts use more and more such fonts to create perceptions of stability and confidence when designing new brand identities, and this is especially the case with young companies, startups that are part of extremely competitive industries.

Future research also could instigate on the effect of brand values (hedonic versus utilitarian) perceived at first exposure and see if there is an impact on the responses and brand outcomes. It could be hypothesized that the hedonic aspects of the brand might stand out more when presented with a logo composed of higher wavelength hues. Perhaps the hedonic dimension

of the brand value further impacts the emotional brand outcomes while the utilitarian brand values impact the cognitive brand outcomes. Introducing ways of processing information as an individual characteristic might also provide interesting results; some individuals might be more into the perceived functionality of the brand while others really value the perceived hedonic value.

Conducting this research with a group of greater ethnically diverse origins and culture would be interesting to better understand the role of ethnic diversity in the emotional and cognitive responses.

Aesthetic sensitivity is a construct made up of three dimensions (value facet, acumen, response intensity) therefore it would be interesting to analyze responses by dimension and see if any further investigations help explain the emotional or cognitive responses at initial exposure of a brand's logo. Since an immediate type of response is studied, perhaps the response intensity dimension directly impacts the emotional brand attachment variable since it is an emotional, affective brand outcome.

A similar analysis could be performed to further understand the effect of logo design elements on emotional brand attachment since the latter is made up of three first order constructs: affection, passion and connection. Digging deeper within the constructs could provide insight on the brand perception process. A hypothesis could be that the passion construct is most heightened when a passionate colour (red) is used, while connection might be enhanced when a safe and pleasant (blue) colour is used.

Replicating this study with a control logo (black and white) would be interesting. It is tricky to create a black and white logo and not make it seem luxurious with today's trends that use black to promote premium, higher quality and even luxury products and brands. Researchers will need to be careful and pretest the control logo conditions. Replicating the study with a black

font colour instead of white would also be interesting. White font might make a logo softer, which in general might increase perceptions of pleasantness, while black might make the logo seem more aggressive which according to the literature would increase the excitement level. Testing this would be interesting indeed; the emotional or cognitive responses could differ.

Another interesting brand outcome that should be researched is brand preference within this specific context, where the user is exposed to the brand for the first time. Brand preference is usually tested with a focal and a referent brand therefore conducting the research while adding a referent brand of the same product category would be ideal.

Including the respondents' style of processing (verbal versus visual) as a moderating variable would be interesting to see if there is an impact on the findings. Since the study discussed in this paper addresses emotional and cognitive responses at initial exposure of a standalone, unknown brand's logo, it can be hypothesized that individuals who possess a more visual style of processing will experience more emotional responses compared against the individuals who possess a more verbal style of processing. Since the logo is presented in a vacuum (meaning as a standalone piece of information with no other message or information to further understand the brand) it would be fair to test and clarify if this is the case right after immediate exposure.

Much more research that marries academic findings with expert interviews on the matter should be lead. While research conclusions might sometimes seem either black or white, expert opinions help better understand the grey areas. This study includes opinions from 4 experts, and qualitative research with many more interviews as such should be conducted. More research should elaborate on the opinions and intuitions of creative designers while they are dived in the creative process. Every designer has a different way of expressing in design the brand values that are communicated by brand strategists. A look in the mind of a designer in action would help

better understand what is meant by designer intuition and provide even more interesting findings to share with marketing professionals. There exists one particularly interesting study on the subject (Phillips, McQuarrie & Griffin, 2014) however there really isn't another research like it. The body of literature is extremely recent, however it will surely expand and spark further research interest in the coming years.

12. ADDITIONAL TABLES

Table 25: Gender frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	48	20.8	20.8	20.8
	Female	183	79.2	79.2	100.0
	Total	231	100.0	100.0	

Table 26: Age frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-29	59	25.5	25.5	25.5
	30-49	109	47.2	47.2	72.7
	50-64	41	17.7	17.7	90.5
	65 years and over	22	9.5	9.5	100.0
	Total	231	100.0	100.0	

Table 27: Ethnicity frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White/Caucasian	197	85.3	85.3	85.3
	African American	14	6.1	6.1	91.3
	Hispanic	6	2.6	2.6	93.9
	Asian	11	4.8	4.8	98.7
	Native American	2	.9	.9	99.6
	Other	1	.4	.4	100.0
	Total	231	100.0	100.0	

Table 28: Marital status frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	109	47.2	47.2	47.2
	Divorced	23	10.0	10.0	57.1
	Widowed	11	4.8	4.8	61.9
	Separated	3	1.3	1.3	63.2
	Single	74	32.0	32.0	95.2
	Common Law	11	4.8	4.8	100.0
	Total	231	100.0	100.0	

Table 29: Education level frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<High School	6	2.6	2.6	2.6
	High School	89	38.5	38.5	41.1
	College	50	21.6	21.6	62.8
	Undergraduate	68	29.4	29.4	92.2
	Graduate	16	6.9	6.9	99.1
	Professional Degree	2	.9	.9	100.0
	Total	231	100.0	100.0	

Table 30: Household income frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<30,000	70	30.3	30.4	30.4
	30,000-39,999	40	17.3	17.4	47.8
	40,000-49,999	32	13.9	13.9	61.7
	50,000-59,999	33	14.3	14.3	76.1
	60,000-69,999	14	6.1	6.1	82.2
	70,000-79,999	11	4.8	4.8	87.0
	80,000-89,999	9	3.9	3.9	90.9
	90,000-99,999	4	1.7	1.7	92.6
	>100,000	17	7.4	7.4	100.0
	Total	230	99.6	100.0	
Missing	System	1	.4		
Total		231	100.0		

Colour Codes (https://color.adobe.com)

- Bright Red: DB0300
- Light Red: DB91A0
- Bright Blue: 400CE8
- Light Blue: 7BB3FF

Used font types:

- Snell Roundhand – cursive:

  Kofave

- Century Gothic regular – squared:

  Kofave

- Times New Roman – control neutral:

  Kofave

13. REFERENCES

Argo, J. J., Popa, M., & Smith, M. C. (2010). The Sound of Brands. *Journal of Marketing*, *74*(4), 97–109.

Artacho, M. A., Ballester, A., & Alcántara, E. (2010). Analysis of the impact of slight changes in product formal attributes on user's emotions and configuration of an emotional space for successful design. *Journal of Engineering Design*, *21*(6), 693-705.

Aslam, M.M (2006). Are You Selling the Right Colour? A Cross-cultural Review of Colour as a Marketing Cue. *Journal of Marketing Communications*, *12*(1), 15-30.

Babin, B. J., Hardesty, D. M., & Suter, T. A. (2003). Color and shopping intentions: the intervening effect of price fairness and perceived affect. *Journal of Business Research*, *56*(7), 541-551.

Baldwin, M.W., Keelan, J. P. R., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social- cognitive conceptualization of attachment working models: Availability and accessibility effects. *Journal of Personality and Social Psychology, 71*(1), 94–109.

Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, *27*(2), 184-206.

Bayer, M., Sommer, W., & Schacht, A. (2012). Font size matters – Emotions and attention in cortical responses to written words. Plos ONE, 7 (5), doi:10.1371/journal.pone.0036042

Bellizzi, J. A., Crowley, A. E. & Hasty, R. W. (1983). The effects of color in store design. *Journal of Retailing*, *59*(1), 21–45.

Bernard, M. L., Chaparro, B. S., Mills, M. M., & Halcomb, C. G. (2003). Comparing the effects of text size and format on the readibility of computer-displayed Times New Roman and arial text. *International Journal of Human Computer Studies*, *59*(6), 823–835.

Bloch, P. H. (1995). Seeking the Ideal Form: Product Design and Consumer Response. *Journal of Marketing, 59*(July), 16–29.

Bloch, P. H., Brunel, F. F., & Arnold, T. J. (2003). Individual Differences in the Centrality of Visual Product Aesthetics: Concept and Measurement. *Journal of Consumer Research, 29*(March), 551–65.

Bottomley, P. A., & Doyle, J. R. (2006). The interactive effects of colors and products on perceptions of brand logo appropriateness. *Marketing Theory, 6*(1), 63-83.

Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: the self-assessment manikin and the semantic differential. *Journal of behavior therapy and experimental psychiatry*, *25*(1), 49-59.

Cacioppo, J. T., Petty, R. E., & Chuan Feng, K. (1984). The Efficient Assessment of Need for Cognition. *Journal Of Personality Assessment, 48*(3), 306.

Childers, T. L., & Jass, J. (2002). All dressed up with something to say: Effects of typeface semantic associations on brand perceptions and consumer memory. *Journal of Consumer Psychology, 12*(2), 93 – 106.

Csikszentmihalyi, M., & Robinson, R. E. (1990). The Art of Seeing: An Interpretation of the Aesthetic Experience*. Los Angeles, CA: J. Paul Getty Museum & Getty Foundation Institute for the Arts.*

Darwin, Charles (1872). *The Expression of Emotions in Man and Animals*.

Franz, L. (2010). Chapter 2: Does the Font Convey the Right Message? Aesthetics and Emotions. *Typographic Web Design*, 7-24.

Grohmann, B. (2009). Gender dimensions of brand personality. *Journal of Marketing Research*, *46*(1), 105-119.

Grohmann, B., Giese, J. L., & Parkman, I. D. (2013). Using type font characteristics to communicate brand personality of new brands. *Journal of Brand Management, 20*(5), 389-403.

Guilford, J. P., & Smith, P. C. (1959). A system of color-preferences. *The American Journal of Psychology*, *72*(4), 487-502.

Havlena, W. J., & Holbrook, M. B. (1986). The varieties of consumption experience: comparing two typologies of emotion in consumer behaviour. *Journal of Consumer Research*, *13*(3), 394-404.

Henderson, P. W., & Cote, A. (1998). Guidelines for selecting or modifying logos. *Journal of Marketing, 62*, 14–30.

Henderson, P. W., Giese, J. L., & Cote, J. A. (2004). Impression management using typeface design. *Journal of Marketing, 68*(4), 60 – 83.

Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic consumption: Emerging concepts, methods and propositions. *Journal of marketing*, *46*(3), 92-101.

Hynes, N. (2009). Colour and meaning in corporate logos: An empirical study. *Journal of Brand Management*, *16*(8), 545-555.

Kent, R. J., & Allen, C. T. (1994). Competitive interference effects in consumer memory for advertising: The role of brand familiarity. *Journal of Marketing, 58*(July), 97-105.

Klink, R. R. (2000). Creating Brand Names With Meaning: The Use of Sound Symbolism. *Marketing Letters, 11*(1), 5-20.

Labrecque, L.I. & Milne, G.R. (2011). Exciting red and competent blue: the importance of color in marketing. *Journal of the Academy of Marketing Science*, *40*(5), 711–727.

MacInnis, D. J., Shapiro, S., & Mani, G. (1999). Enhancing brand awareness through brand symbols. *Advances in Consumer Research, 26*, 601–608.

Mehrabian, A. (1996). Pleasure-arousal-dominance: A general framework for describing and measuring individual differences in temperament. *Current Psychology*, *14*(4), 261-292.

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. The MIT Press.

Myers, D. G. (2004). Theories of Emotion. *Psychology: Seventh Edition*, New York, *NY: Worth Publishers*, 500.

Ohala, J. (1984). An Ethological Perspective on Common Cross-Language Utilization of FO of Voice. *Phonetica, 41*(1), 1-16.

Park, C. W., Eisingerich, A. B., Pol, G., & Park, J. W. (2013). The role of brand logos in firm performance. *Journal Of Business Research, 66*(2), 180-187.

Park, C. W., MacInnis, D. J., Priester, J., Eisingerich, A. B., & Iacobucci, D. (2010). Brand attachment and brand attitude strength: Conceptual and empirical differentiation of two critical brand equity drivers. *Journal of Marketing, 74*(6), 1–18.

Petty, R, E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in experimental social psychology*, *19*, 123-205.

Phillips, B. J., McQuarrie, E. F., & Griffin, W. G. (2014). The face of the brand: how art directors understand visual brand identity. *Journal of advertising, 43*(4), 318-332.

Plutchik, R. (1980). Emotion: A psychoevolutionary synthesis. *New York7 Harper and Row*.

Profusek, P. J., & Rainey, D. W. (1987). Effects of Baker-Miller pink and red on state anxiety, grip strength, and motor precision. *Perceptual and Motor Skills, 65*(3), 941-942.

Sacharin, V., Gonzalez, R., & Andersen, J. (2011). Object and user levels of analyses in design: the impact of emotion on implicit and explicit preference for 'green' products. *Journal Of Engineering Design, 22*(4), 217-234.

Solomon, M. R. (2007). *Consumer Behavior: Buying, Having, and Being*, *(Vol. 7)*. Upper Saddle River, NJ: Prentice Hall.

Thomson, M., MacInnis, D. J., & Park, C. W. (2005). The ties that bind: Measuring the strength of customers' emotional attachment to brands. *Journal of Consumer Psychology, 15*(1), 77–91.

Tsonos, D., & Kouroupetroglou, G. (2011). Modeling reader's emotional state response on document's typographic elements. *Advances in Human-Computer Interaction*, *2011,* 1-18.

Valdez, P., & Mehrabian, A. (1994). Effects of color on emotions. *Journal of Experimental Psychology: General, 123*(4)*,* 394-409.

Wexner, L. B. (1954). The degree to which colors (hues) are associated with mood-tone. *Journal of Applied Psychology*, *38*(6), 432.

Wright, B., & Rainwater, L. (1962). The meaning of color. *Journal of General Psychology*, *67*, 89-99.