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Hot or cold? The impact of color temperature on product choice amongst empathizers and systemizers

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1.0 Introduction

Human senses (vision, taste, smell, touch and hearing) are fundamental factors that help us understand the world (Lindstrom, 2005), and it is through these we become aware of companies, their brands and their products (Hultén, Broweus, & Van Dijk, 2009). As such, sensory marketing engages the consumers' senses and affects their behavior, judgement and perception (Krishna, 2012) of brands, products and companies. Vision has shown to be the most important and influential of our five senses (Hultén et. al., 2009; Lindstrom, 2005), even from an early age. Furthermore, while vision remains the most influencing sense to human beings, color is shown to be the most influencing factor in vision (Kauppinen-Räsänen & Luomala, 2010).

Colors carry with them different associations, social and cultural meanings, and can through this have psychological effects on consumers (Caivano & López, 2007; Da Pos & Green-Armytage, 2007; Hultén et al., 2009; Minah, 2008; Pogacar, 2012; Takahashi, 2012). Hess & Melnyk (2016) suggests that warm colors are associated with warm personalities (i.e., kindness, friendliness and empathy) while cold colors are associated with competence (i.e., technological skills, understanding and problem solving).

Similarly, in psychology, Baron-Cohen (2010) developed the empathizing-systemizing theory measuring a person's empathy (warmth) and systemizing (competence) using an empathy quotient and a systemizing quotient. In this preliminary thesis report, we wish to investigate if a potential link can be drawn between consumers' personalities (i.e., as systemizers or empathizers) and their respective color preference (i.e., cold or warm).

We begin by presenting the background of our research. Then, we present our research question followed by a literature review of relevant constructs and previous research. Following this, we present our working hypotheses and research methodology. Finally, we present a timeline for thesis progression and data collection.

2.0 Background

In order to gain notice and consideration at the point of purchase, brands must be able to break through the clutter of competitor brands. Package color is a critical tool to gain such notice (Garber, Burke, & Jones, 2000). However, the use of colors as an aesthetic tool is relatively recent, as it historically has been thought to serve a functional role (Labrecque, Patrick, & Milne, 2013). For instance, rare and expensive indigo pigments were previously reserved for royalty, and thus associated with power. Similarly, marketers use colors in logos, store atmospherics, advertisements, product design, and package design, to grab consumers' attention, signify product attributes, and differentiate brands (Labrecque et al., 2013).

Despite the importance of colors in marketing, research pertaining to color is scarce over the last decade. Labrecque et al. (2013) report that marketing practitioners often hesitates to explore using different colors, and lack updated theoretical knowledge upon which to base such decisions. Given the recent advances in color research in both related and unrelated fields (e.g., biology, neuroscience, psychophysics and psychology), as well as advances in color technology, a renewed interest in color research within marketing is necessary. The scarce color literature leaves many gaps and opportunities for research. Garber et al. (2000) report that there has been very little research on the effects of package color on consumer choice, specifically the impact of cool versus warm colors (Singh, 2006). As a consumer's choice is affected by his/her personality, this must be taken into consideration.

Fiske, Cuddy, & Glick (2006) have thoroughly established that people differentiate each other on two dimensions: warmth (e.g., friendliness and sincerity) and competence (e.g., skill and intelligence). Hess & Melnyk (2016) adds to this literature by finding evidence that a warm color (pink) on product packaging is associated with warmth, and a cold color (blue) on product packaging is associated with competence, which spills over to the brand. This is in line with the fact that information concerning temperature is often provided by means of color, e.g., red with warm and blue with cold temperatures (Morgan,

Goodson, & Jones, 1975). The warmth and competence aspect is clearly linked to the empathizing-systemizing theory within the field of psychology. Empathizing refers to social information processing, while systemizing includes abilities to understand the causal rules governing lawful, inanimate systems. Thus, we assume that empathizers puts importance on warmth, while systemizers puts more importance on competence, when choosing a product.

3.0 Research question

Based on the arguments presented above, we want to investigate if it is possible to use color temperature on product packaging to appeal to consumers with specific personality traits. By doing this, we draw a link between empathizing-systemizing theory and color temperature preference. This leads to the following research question:

Does a consumer's personality (i.e., as systemizer or empathizer) influence his/her preference of warm and cold color nuances on product packaging?

By answering this research question, we contribute by closing gaps in color literature within the field of psychology and marketing, and enhancing the understanding of color temperature. Empirical evidence of the possible link would provide researchers with new directions for future research.

4.0 Literature Review

In this section we will explore existing literature regarding the constructs that are relevant for our research question. We begin by examining research on color and color temperature. Secondly, we examine product packaging research in relation to colors. Finally, we look into certain personality traits and how they interact with product preference.

4.1 Color and color temperature

Research show that people make up their minds within 90 seconds of their initial interactions with a product, and that as much as 90 percent of the assessment is based on colors alone (Singh, 2006). In addition, research show that color is found

to be the first package cue noticed by consumers (Danger, 1987a), implying that it is the most essential and attention-grabbing visual cue (Danger, 1987b). Thus, careful color selection is an inevitable part when it comes to branding (Kauppinen-Räsänen & Luomala, 2010).

Technically, different colors are different distributions of wavelengths of light. The color appearance of light of a given wavelength depends on the viewing conditions, and varies slightly from one observer to another. Thus, color is also a sensation experienced by the individual (Hunt & Pointer, 2011). It carries meaning and can influence consumers' thoughts, feelings, and behaviors (Labrecque et al., 2013).

In the field of marketing, the number of empirical color studies is limited. However, it has been studied extensively in the field of psychology (Bellizzi & Hite, 1992), with a focus on color preferences and the associations of colors (Taft, 1997). Within the field of psychology, color is defined as the personal perception of the object (Camgöz, Yener & Güvenc, 2004), which is closely linked to an individual's subjective color preference and learned associations.

As associations is a result of learning, culture and context is thought to play an important role in their formation (Hoegg & Alba, 2007). This also applies to the formation of color associations. While some evidence suggests that cultural differences exist for many color associations (Block & Kramer, 2009; Madden, Hewett, & Roth, 2000), other evidence suggests that intrinsic color associations is shared across cultures (Fraser & Banks, 2004). Furthermore, globalization is thought to have had a key influence on cultural color meanings in today's society. For instance, Chinese brides have traditionally worn red, but are now opting for white gowns as seen in the Western culture (Labrecque et al., 2013). Thus, it seems cultural lines are blurring in relation to color, supporting research suggesting that cultural norms only influence color preferences when salient (Chattopadhyay, Gorn, & Darke, 2010).

Furthermore, research shows that colors may have different associations depending on the context. For instance, when seeing someone in a red dress at a dinner party, one might experience excitement and arousal, whereas red street lights serve as a signal for stopping and provoke danger. Here, the contextual setting (i.e., dinner party versus intersection) determines which color associations are activated, despite red being the key color in both situations (Labrecque et al., 2013). Elliot & Maier (2007) supports this notion by suggesting that depending on the context of use, colors can trigger completely different associations. Activation of color associations mostly occurs without conscious awareness or intention (Elliot & Maier, 2007). Thus, color has the ability to unconsciously affect attitudes and behaviors, just as other environmental cues (Dijksterhuis, Smith, Van Baaren, & Wigboldus, 2005).

A specific context in which color associations is relatively stable is with regards to temperature. Information regarding temperature is often provided by means of color, e.g., red with warm temperatures and blue with cold temperatures (Morgan et al., 1975). Technically, color temperature is a characteristic of visible light. It is measured in Kelvin (K) on a scale from 1,000 to 10,000, in which warmer colors have lower values and cooler colors have higher values. In the visible spectrum, warm colors have longer wavelengths than cool colors (Hunt & Pointer, 2011). Color temperature can also be seen as a graphical representation of the range of color temperatures in Kelvins, ranging from cold in terms of blue to warm in terms of red (Hand & Middleditch, 2013). Similarly, researchers in the field of psychology have classified colors as warm, e.g., red and orange, and cool, e.g., blue and green (Crozier, 1999; Goldstein, 1942; Ho, Van Doorn, Kawabe, Watanabe, & Spence, 2014; Michael, Galich, Relland, & Prud'hon, 2010; Singh, 2006; Valdez & Mehrabian, 1994).

The association between colors and temperature is also seen in actual objects. For instance, blue is often associated with cold objects such as the ocean and the sky, whereas orange is associated with warm objects such as fire and the sun. Thus, with increasing exposure to objects over time, our cognitive association between color and temperature is learned and reinforced (Morgan et al., 1975). In support

of this view, Morgan et al. (1975) reported that the ability to associate temperature with colors increases with age. From the age of 12, subjects could entirely associate temperatures with specific colors.

However, the distinction between warm and cool colors is relative. For instance, a color might be perceived as warmer than another color in one pairing, but colder than the other when paired with different color. In addition, as color experiences vary between individuals, one person's perception of a color or color nuance can be different from that of another person (Singh, 2006).

Within marketing research on color, Hess & Melnyk (2016) found evidence that warm colors (e.g., pink) is associated with a warm brand personality, and cold colors (e.g., blue) is associated with competent brands (Hess & Melnyk, 2016). Furthermore, Singh (2006) argues that colors can provoke information processing and behavior true to their respective associations, hence enhancing colors' power to influence consumers' moods, feelings and attitudes towards certain products.

4.2 Product packaging

Product packaging plays an important role in brand marketing. In order to gain notice and consideration at the point of purchase, brands must be able to break through the clutter of competitor brands (Garber et al., 2000). Product packaging is shown to be a critical tool for gaining such notice (Raphael, 1975). By attracting the consumers' attention, communicating a brand's personality, differentiating the brand from competitors and enhancing the product's functionality, product packaging can have a substantial impact on consumer decision making (Garber et al., 2000). Packaging is especially important when shoppers have little or no prior knowledge of a product category or brand, and for new or infrequently purchased products, the package may be the only source of information about the brands under consideration (Garber et al., 2000). For example, Becker, Van Rompay, Schifferstein & Galetzka (2011) argue that the shape and color saturation of a package design is transferred to the subsequent taste experience of that product.

A substantial amount of research has found that the visual appearance of the product's packaging influence consumer purchase decisions (Bloch, 1995; Crilly, Moultrie, & Clarkson, 2004; Fenko, Schifferstein, & Hekkert, 2010). Similarly, others have found that a packaging's symbolic or aesthetic qualities can steer the decision making of consumers (Creusen & Schoormans, 2005; Van Rompay, Pruyn, & Tieke, 2009). The influential aspect of single packaging elements such as color, shapes, letter fonts, pictures and materials are also well established (Funk and Ndubisi, 2006; McDaniel and Baker, 1977; Schoormans and Robben, 1997). A product's packaging has changed from what used to be a cost-of-sale element to being a way to communicate a brand's personality (Underwood, 2003) and a way to infer product meaning and quality (Funk & Ndubisi, 2006).

While most research on product packaging is focused on the general importance of the packaging with regards to the overall distribution of elements and design, significantly less is done specifically on the color properties of the package design. Additionally, most research is focused on influencing factors in packaging design, without many specific marketing implications. However, the research of Garber et al. (2000) suggests that a change of color in packaging design will enhance the likelihood of the item being considered by a non-loyal consumer, but on the contrary, it would be best to keep the same product packaging with a large, loyal customer base. Further, Ahmad, Billoo and Lakhan (2012) found that out of all the features related to the product packaging, color was the most important factor in the consumer decision making process. Other research has found that the package color should be dependent of the product's desired positioning (Ampuero & Vila, 2006). They argue that cold, dark and black colors are required for high-priced products based on elegance and refined aesthetics targeted towards the upper classes, while light (mainly white) colored packaging should be used in accessible products for more price sensitive consumers. Kauppinen-Räsänen & Luomala (2010) suggests that package colors serve as cues, not only for brand and product quality (Funk & Ndubisi, 2006; Garber et al., 2000), but also of product-related information, i.e. attributes (i.e. taste, ingredients) and consumption-related information, i.e. consequences (i.e. quality, trustworthiness, bodily imagery). Further, changing the color of a package design does not prompt

any additional costs like changing the characteristics, size or shape of a product, which makes it an attractive feature to alter from an economical point of view.

4.3 Personality traits

Research show that consumers' tend to assign personality traits to brands and products (Aaker, 1997). Thus, marketers are able to use colors to portray brand personalities. Research show that color work as cues for personalities, e.g., warmth and competence. Related to the warmth and competence dimensions, is the degree of empathizing and systemizing. This leads us to our next section.

4.3.1 Warmth and competence

In line with other studies of social cognition, Fiske et al. (2006) have thoroughly established that people differentiate each other on two dimensions: warmth and competence. The warmth dimension captures traits such as friendliness, generousness, helpfulness, trustworthiness, sincerity, morality and understanding, whereas the competence dimension reflects traits that are related to perceived ability, including intelligence, skill, creativity, efficacy and knowledge (Fiske et al. 2006; Wojciszke, Bazinska, & Jaworski, 1998). Wojciszke et al. (1998) examined what personality traits people assign to others when making first impressions. Findings show that warmth and competence form basic dimensions that together account for 82 percent of the variance in perceptions of how people characterize others.

Hess & Melnyk adds to this literature by finding evidence for that gender cues (e.g., gender-typed colors (blue versus pink) and shapes (angular versus round)) on product packaging activate gender-stereotypical knowledge of warmth and competence, which spills over to the brand. This effect depends on the presence of other competence cues in a consumer's environment. In the presence of a high competence cue (e.g., a reputable brand), feminine gender cues (i.e., pink) enhance purchase likelihood (via activation of warmth perceptions), whereas masculine cues (i.e., blue) actually decrease purchase likelihood. In contrast, in the presence of a low competence cue (e.g., new companies), masculine gender cues enhance purchase likelihood (via activation of competence perceptions),

whereas feminine cues lower purchase likelihood. Specifically, warm colors (pink) is associated with warmth, and cold colors (blue) is associated with competence.

Thus, we assume that a product package that conveys a warmth cue (i.e., having a warm color nuance) should activate feelings associated with warmth towards the product and/or brand. Likewise, a product package that conveys a competence cue (i.e., having a cold color nuance) should activate feelings associated with competence towards the product and/or brand. We expect this to affect purchase intention.

4.3.2 Empathizing-Systemizing Theory

The empathizing-systemizing theory suggests that people may be classified on the basis of their scores along the dimensions of empathizing and systemizing. Empathizing refers to social information processing, encompassing both the cognitive empathic ability to infer others' mental states, as well as the affective empathic ability to share others' feelings and to respond accordingly (Svedholm-Häkkinen & Lindeman, 2016; Baron-Cohen, 2010; Baron-Cohen & Wheelwright, 2004). Systemizing in turn, includes abilities to understand the causal rules governing lawful, inanimate systems, such as logic, machines, and spatial processing (Svedholm-Häkkinen & Lindeman, 2016; Baron-Cohen, 2008; Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003). In other words, empathizing and systemizing are domain-specific orientations evolved for understanding psychological and physical phenomena. Thus, the empathizing-systemizing theory measures a person's strength of interest in empathy and a person's strength of interest in systems.

As the variables describing the warmth and empathizing dimensions overlap, and the variables describing the competent and systemizing dimensions overlap, we assume that empathizers puts importance on warmth, while systemizers puts more importance on competence. As product packaging is a physical phenomena, we thus assume that people will perceive and form impressions of a product based on

its packaging color dependent on their respective scores along the dimensions of empathizing and systemizing. This leads us to our working hypotheses.

5.0 Working Hypotheses

While previous research has found links between perceived competence and cold colors and perceived warmth and warm colors (Hess & Melnyk, 2016), no prior research has investigated whether consumers' personality in terms of systemizers and empathizers is linked to color preference. Thus, the following hypotheses were developed:

H1: Brands using product packaging with cold colors (versus warm) will achieve higher preference from systemizers (versus empathizers) when all other product attributes are held constant.

H2: Brands using product packaging with warm colors (versus cold) will achieve higher preference from empathizers (versus systemizers) when all other product attributes are held constant.

Further, research suggests that the presence of competence cues influence the customer to seek out warmth cues and vice versa (Hess & Melnyk, 2016). Hence, we entail the following:

H3: Independent of personality type, when in a competence context, subjects will choose a warm color when all other attributes are held constant.

H4: Independent of personality type, when in a warmth context, subjects will choose a cold color when all other attributes are held constant.

Finally, because systemizers by nature are more interested in the mechanics and the underlying purpose of a product, one can argue that a product's color might influence the decision making of an empathizer to a greater extent than with systemizers. Thus, we expect:

H5: The effects for empathizers will be stronger than for those related to systemizing.

6.0 Research Methodology

The methodology described in this section takes on the procedure for answering our research question. As this is a preliminary thesis report, the methodology presented is tentative and serves as a guideline for how we are going to test our hypotheses. Our main source of data collection will be through online surveys. Using online surveys offer a good alternative to lab experiments, because they can reach representative consumer samples and decrease response style bias (Melnik, Klein, Völckner, 2012).

6.1 Pretest

A pretest will be conducted to validate which color nuances of which colors are perceived as warm and cold, and to ensure that the warm and cold distinction is clear. The colors used in the pretest is the colors reported as the main regions of the spectrum (Hunt & Pointer, 2011): violet, blue, green, yellow, orange and red. Within each color, eight different nuances from warm to cold will be generated by manipulating the color temperature (white balance/Kelvin) in Photoshop.

A sample of 200 participants will be recruited through an online portal such as Amazon Mechanical Turk or Prolific. They will receive a small reward for their participation. Thus, through an online survey, participants will be exposed to eight different nuances of each chosen color, and asked to rank the colors on a scale from warm to cold. Based on the results, a scale of warm to cold distinctions for each color as perceived by the participants will be generated, and the two colors with clearest distinction will then be applied to the main study. This will be a contribution to the current state of research as, to our knowledge, this validation has not been conducted previously.

6.2 Main study

The goal of the study is to demonstrate that subjects classified as systemizers on average will choose products with cold colors, while subjects classified as

empathizers on average will choose products with warm colors. Subsequently, we want to measure the effects of a contextual cue based on either competence or warmth to see whether this enhance or reduce the effects.

Participants will be recruited through an online portal such as Amazon Mechanical Turk or Prolific, and will be randomly assigned to one of the three contextual conditions. The study has a 3 (no context, competence context, warmth context) x 2 (color 1, color 2) x 2 (cold nuance, warm nuance) design. Context will be manipulated between-subjects, while all subjects will be exposed both colors and both temperature nuances. The sample will consist of 200 people per condition, 600 in total. Participants will receive a small reward for their participation.

First, all participants will have to answer a simple personality test to determine whether they are categorized as systemizers or empathizers. Further, they will be randomly assigned to one of the three contexts. We will manipulate the context by giving each participant a scenario in which they are hosting a dinner party for their new colleagues, and they are to purchase wine. For the competence context, they wish to appear as a competent person, and for the warmth context, they wish to appear as a warm person. Next, they will be given a choice between two wine bottles of the same color, but with different temperature nuance, holding all other attributes constant. Lastly, the participants will be asked for basic demographics, visual impairments and screen brightness. Controlling for visual impairments is particularly important for our research due to the large amount of people worldwide suffering from color blindness. Symptoms of color blindness varies from mere color confusion to a complete color blindness, i.e., seeing only in black, white and shades of gray (Singh, 2006). Additionally, we will exclude all participants that responded in less than the time required to read all items and complete their answers based on a pre-test, as well as those that have a standard deviation of 0 in their answers (Johnson, 2016).

7.0 Timeline

In the following we present an overarching plan for data collection and general thesis progression, month by month.

January

- Deadline for submission of the Preliminary Thesis Report is January 15th
- Continue writing the literature review
- Clarify the research question and hypotheses
- Meeting with our supervisor

February

- Make necessary adjustments to plan
- Finish writing the literature review
- Conduct pretest
- Analysis
- Meeting with our supervisor
- Continue writing the research methodology

March

- Make necessary adjustments to plan
- Finish writing the research methodology
- Conduct study 1
- Analysis
- Meeting with our supervisor

April

- Make necessary adjustments to plan
- Finish writing the results
- Finish writing the implications
- General thesis writing
- Meeting with our supervisor

May

- Make necessary adjustments to plan
- Finish writing the introduction
- Deliver draft to our supervisor
- Meeting with our supervisor
- Work on corrections

June

- Make necessary adjustments to plan
- Deliver final draft to our supervisor
- Submit the Master Thesis

September

- Deadline for submission of the Master Thesis is September 1st

8.0 References

Aaker, J. L. (1997). Dimensions of Brand Personality. *Journal of Marketing Research*, 34(3), 347-356. <http://www.jstor.org/stable/3151897>

Ahmad, N., Billoo, M., & Lakhan, A. (2012). Effect of Product Packaging on Consumer Buying Decision. *Journal of Business Strategies*, 6(2), 1-10.

Ampuero, O., & Vila, N. (2006). Consumer perceptions of product packaging. *Journal of Consumer Marketing*, 23(2), 100-112.

Baron-Cohen, S. (2008). Autism, hypersystemizing, and truth. *Quarterly Journal of Experimental Psychology*, 61, 64–75.

Baron-Cohen, S. (2010). Empathizing, systemizing, and the extreme male brain theory of autism. *Progress in Brain Research*, 186, 167-175.

Baron-Cohen, S., & Wheelwright, S. (2004). The empathy quotient: An investigation of adults with Asperger syndrome or high functioning autism, and normal sex differences. *Journal of Autism and Developmental Disorders*, 34, 163-175.

Baron-Cohen, S., Richler, J., Bisarya, D., Gurunathan, N., & Wheelwright, S. (2003). The systemizing quotient: An investigation of adults with Asperger syndrome or high-functioning autism, and normal sex differences. *Philosophical Transactions of the Royal Society of London, Series B (Special Issue)*, 358, 361-374.

Becker, L., van Rompay, T. J., Schifferstein, H. N., & Galetzka, M. (2011). Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations. *Food Quality and Preference*, 22(1), 17-23.

Bellizzi, J. A., & Hite, R. E. (1992). Environmental color, consumer feelings, and purchase likelihood. *Psychology & Marketing*, 9, 347-363.

- Bloch, P. H. (1995). Seeking the ideal form: Product design and consumer response. *The Journal of Marketing*, 16-29.
- Block, L., & Kramer, T. (2009). The effect of superstitious beliefs on performance expectations. *Journal of the Academy of Marketing Science*, 37(2), 161-169.
- Caivano, J. L., & López, M. A. (2007). Chromatic identity in global and local markets: Analysis of colours in branding. *Journal of the International Colour Association*, 1(3), 1-14.
- Camgöz, N., Yener, C., & Güvenc, D. (2004). Effects of hue, saturation, and brightness: Part 2: Attention. *Color research and application*, 29(1), 20-28.
- Chattopadhyay, A., Gorn, G. J., & Darke, P. (2010). Differences and similarities in hue preferences between Chinese and Caucasians. *Sensory Marketing: Research on the sensuality of products*, 219-40.
- Creusen, M. E., & Schoormans, J. P. (2005). The different roles of product appearance in consumer choice. *Journal of Product Innovation Management*, 22(1), 63-81.
- Crilly, N., Moultrie, J., & Clarkson, P. J. (2004). Seeing things: Consumer response to the visual domain in product design. *Design Studies*, 25(6), 547-577.
- Crozier, R. W. (1999). The meanings of colour: Preferences among hues. *Pigment & Resin Technology*, 28(1), 6-14.
- Da Pos, O., & Green-Armytage, P. (2007). Facial expressions, colours and basic emotions. *Journal of the International Colour Association*, 1(2), 1-20.
- Danger, E. P. (1987a). *Selecting Colour for Packaging*. Brookfield: Gower Technical Press.

- Danger, E. P. (1987b). *The Colour Handbook. How to Use Colour in Commerce and Industry*. Brookfield: Gower Technical Press.
- Dijksterhuis, A., Smith, P. K., Van Baaren, R. B., & Wigboldus, D. H. J. (2005). The unconscious consumer: Effects of environment on consumer behavior. *Journal of Consumer Psychology*, 15, 193-202.
- Elliot, A. J. & Maier, M. A. (2007). Color and Psychological Functioning: The Effect of Red on Performance Attainment. *Journal of Experimental Psychology* 136(1), 154-168. doi: 10.1037/0096-3445.136.1.154
- Fenko, A., Schifferstein, H. N., & Hekkert, P. (2010). Shifts in sensory dominance between various stages of user-product interactions. *Applied Ergonomics*, 41(1), 34-40.
- Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2006). Universal dimensions of social cognition: warmth and competence. *Trends in Cognitive Sciences*, 11(2), 77-83. doi: 10.1016/j.tics.2006.11.005
- Fraser, T., & Banks, A. (2004). *Designer's color manual: The complete guide to color theory and application*. Chronicle Books.
- Funk, D., & Oly Ndubisi, N. (2006). Colour and product choice: a study of gender roles. *Management Research News*, 29(1/2), 41-52.
- Garber, L. L., Burke, R. R., & Jones, J. M. (2000). The role of package appearance in consumer purchase consideration and choice. *Marketing Science Institute Working Paper Series*, 00-104.
- Goldstein, K. (1942). Some experimental observations concerning the influence of colors on the function of the organism. *American Journal of Physical Medicine & Rehabilitation*, 21(3), 147-151.

Hand, D., & Middleditch, Steve. (2013). *Design for Media: A Handbook for Students and Professionals in Journalism, PR, and Advertising*. London/New York: Routledge.

Hess, A. C., and Melnyk, V. (2016). Pink or blue? The impact of gender cues on brand perceptions. *European Journal of Marketing*, 50(9/10), 1550-1574.
<https://doi.org/10.1108/EJM-11-2014-0723>

Ho, H. N., Van Doorn, G. H., Kawabe, T., Watanabe, J., & Spence, C. (2014). Colour-Temperature Correspondences: When Reactions to Thermal Stimuli Are Influenced by Colour. *PLoS ONE*, 9(3): e91854.
doi:10.1371/journal.pone.0091854

Hoegg, J., & Alba, J. W. (2007). Taste perception: more than meets the tongue. *Journal of Consumer Research*, 33(4), 490-498.

Hultén, B., Broweus, N., & Van Dijk, M. (2009). What is Sensory Marketing? In *Sensory marketing* (pp. 1-23). Palgrave Macmillan UK.

Hunt, R. W. G., & Pointer, M. R. (2011). *Measuring colour*. Retrieved from <https://ebookcentral-proquest-com.ezproxy.library.bi.no>

Johnson, J. S. (2016). Improving online panel data usage in sales research. *Journal of Personal Selling & Sales Management*, 36(1), 74-85.

Kauppinen-Räsänen, H., & Luomala, H. T. (2010). Exploring consumers' product-specific colour meanings. *Qualitative Market Research: An International Journal*, 13(3), 287-308. doi: 10.1108/13522751011053644

Krishna, A. (2012). An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behaviour. *Journal of Consumer Psychology*, 22(3), 332-351.

Labrecque, L. I., Patrick, V. M., & Milne, G. R. (2013). The Marketers' Prismatic Palette: A Review of Color Research and Future Directions. *Psychology and Marketing*, 30(2), 187-202. doi: 10.1002/mar.20597

Lindstrom, M. (2005). Broad sensory branding. *Journal of Product & Brand Management*, 14(2), 84-87.

Madden, T. J., Hewett, K., & Roth, M. S. (2000). Managing images in different cultures: A cross-national study of color meanings and preferences. *Journal of International Marketing*, 8(4), 90-107.

McDaniel, C., & Baker, R. C. (1977). Convenience food packaging and the perception of product quality. *Journal of Marketing*, 41(4), 57.

Melnyk, V., Klein, K., & Völckner, F. (2012). The double-edged sword of foreign brand names for companies from emerging countries. *Journal of Marketing*, 76(6), 21-37.

Michael, G. A., Galich, H., Relland, S., & Prud'hon, S. (2010). Hot colors: The nature and specificity of color-induced nasal thermal sensations. *Behavioural Brain Research*, 207(2), 418-428.

Minah, G. (2008). Colour as idea: The conceptual basis for using colour in architecture and urban design. *Journal of the International Colour Association*, 2(3), 1-9.

Morgan, G. A., Goodson, F. E., & Jones, T. (1975). Age differences in the associations between felt temperatures and color choices. *The American Journal of Psychology*, 88(1), 125-130.

Pogacar, V. (2012). Periodic colour model. *Journal of the International Colour Association*, 9.

Raphael, H. J. (1975). *Packaging: A scientific marketing tool*. AVI Publishing.

Schoormans, J. P., & Robben, H. S. (1997). The effect of new package design on product attention, categorization and evaluation. *Journal of Economic Psychology*, 18(2), 271-287.

Singh, S. (2006). Impact of color on marketing. *Management Decision*, 44(6), 783-789. doi:

<http://dx.doi.org.ezproxy.library.bi.no/10.1108/00251740610673332>

Svedholm-Häkkinen, A. M., & Lindeman, M. (2016). Intuitive and Deliberative Empathizers and Systemizers. *Journal of Personality*, 85(5), 593-602. doi: 10.1111/jopy.12263

Taft, C. (1997). Color meaning and context: comparison of semantic ratings of colors on samples and objects. *Color Research and Application*, 22(1), 40-50.

Takahashi, S. Y. (2012). Effect of red vs black clothing on the impression of persons engaged in a dialogue. *Journal of the International Colour Association*, 7.

Underwood, R. L. (2003). The communicative power of product packaging: creating brand identity via lived and mediated experience. *Journal of Marketing Theory and Practice*, 11(1), 62-76.

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

Van Rompay, T. J., Pruyn, A. T., & Tieke, P. (2009). Symbolic meaning integration in design and its influence on product and brand evaluation. *International Journal of Design*, 3(2).

Wojciszke, B., Bazinska, R., & Jaworski, M. (1998). On the dominance of moral categories in impression formation. *Journal of Personality and Social Psychology*, 24, 1245-1257.