

Meaning Transfer in a Cobranding Context: The Role of the Sensory Signature

Eue Jung (Euejung) Hwang

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Department of Marketing, Advertising, Retailing and Sales
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Abstract

As people acquire knowledge of the world through their senses, a perceptual brand experience is the most effective and immediate source for a brand to create an impression in the mind of the consumer. A “sensory signature,” which is a unique sensory aspect of a brand, is a storehouse of brand-related information that distinguishes a brand from its competing brands. In this thesis the sensory signature of brand, because of its unique nature, is proposed as an effective brand cue that can help retrieve and activate brand meanings easily. This thesis argues that as the perceptual experience provided by a sensory signature is powerful enough to distinguish the brand from others, the sensory signature is expected to access brand memory easily and activate a wide array of brand meanings. Thus, using the Meaning Transfer Model and Grounded Cognition, this research aims to understand the efficacy of sensory signature in the transfer of brand meanings in a cobranding context by asking the following broad research question:

Whether, and how does, a sensory signature contribute to the transfer of brand meanings in a cobranding context?

The efficacy of sensory signature as an effective brand cue is investigated by conducting a series of five experimental studies. Using both explicit and reaction-time measures, Experiments 1 and 2 not only show that sensory signature can activate brand-relevant meanings, but they also verify sensory signature efficacy as an operable and effective brand cue that is comparable to the most widely used brand cues, such as a brand name. In particular, Experiment 2 shows the path through which the sensory signature drives the meaning transfer process, through using different types of brand meanings (i.e., perceptual and semantic brand meanings). Experiment 3 provides supporting evidence to show that the effects observed from Experiment 2 are derived from the signatory perceptual feature, the signature taste, and not from other taste-related characteristics.

Experiment 4 investigates the impact of a verbal description of a sensory signature, assuming that the simulation of experiencing a sensory signature from reading the description will act as effectively in transferring brand meanings as an actual experience. Interestingly, however, the finding shows that a verbal description of the sensory signature is not effective in either transferring semantic brand meanings or positively influencing product attitude. Rather, the verbal description of key semantic brand meanings performs as an effective brand cue, positively influencing attitude toward the cobranded product. Experiment 5 shows that it is the presence of the product picture that can effectively encourage the simulation of a sensory signature.

Combined, the findings of five experiments address the research question and demonstrate the efficacy of a sensory signature as an effective brand cue, that is comparable to a brand name in transferring brand meanings to a cobranded product. The thesis builds on prior research on cobranding, the Meaning Transfer Model, and Grounded Cognition by enriching the current

understanding of the factors that shape and determine the attitude and subsequent behaviour of consumers when products are cobranded.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for award of any other degree or diploma of a university or other institution of higher learning.

Signed: _____

May, 2017

Chapter 1 INTRODUCTION

... and as soon as I had recognized the taste of madeleine soaked in her decoction of lime-blossom which my aunt used to give me ... Immediately the old grey house upon the street, where her room was, rose up like a stage set ... and with the house the town, from morning to night and in all weathers, the Square where I used to be sent before lunch, the streets along which I used to run errands, the country roads when it was fine.

Marcel Proust, *In Search of Lost Time*

In his well-known novel, “In Search of Lost Time,” Proust narrates the moment he vividly recalls a childhood memory after tasting a sponge cake called Madeleine, dipped in tea. The phenomenon where a powerful sensory stimuli, such as gustatory cue, triggers a particular set of memories associated with that sensory experience is known as the “Proust effect” (Shepherd, 2006). Extant research investigating the influence of a sensory cue on the evaluation of a relevant object is limited to the generic level, such as whether a green brand logo can suggest eco-friendliness (Sundar & Kellaris, 2015), or whether a round-shaped brand logo influence the perception of durability of the product (Jiang, Gorn, Galli, & Chattopadhyay, 2016). This thesis aims to extend the applicability of sensory cues into a wider domain of consumer research, by demonstrating whether a brand-specific sensory cue, such as a sensory signature, can imbue a range of brand meanings, and how such sensory cues can transfer brand meanings across products in a different category. A sensory signature is present not just when a product has a recognisable sensory attribute, but when it possesses a distinctive sensory characteristic that distinguishes the brand from its competitors.

This chapter provides an overview of this thesis, which investigates the application of the idea that the sensory signature of a brand is an effective brand cue, that can transfer and activate relevant brand meanings in a cobranding context. Specifically, it outlines the research problem (Section 1.1), research objectives (Section 1.2), summary of results and findings (Section 1.3), contribution to marketing theory and practice (Section 1.4), and an overview of the structure of the thesis (Section 1.5).

1.1 Research Problem

As a “constellation of associations with brand names” (Swait, Erdem, Louviere, & Dubelaar, 1993, p. 25), brand equity works as a source of information indicating the characteristics of a brand, and has become a valuable basis for differentiation in the consumer's

mind (Besharat, 2010; Keller, 1993). Firms often use cobranding as an effective tool, as the strategy utilises the existing brand equity of their partner brands. Through cobranding, firms can establish a mutually beneficial relationship between both partner brands through the transfer of desirable meanings or brand associations, which represent anything mentally linked to the brand in terms of the consumer's memory (Aaker, 1991; Gwinner, 1997). Such a transfer of brand associations squares with what has been proposed in the Meaning Transfer Model (McCracken, 1989), which implies that consumers' interpretation of meanings held with respect to a brand also become associated with the partner brand, constituting new information for it (Gwinner, 1997).

While the Meaning Transfer Model has been successfully employed in a number of different contexts, such as cobranding and brand extension, the psychological underpinning that explains how the meaning transfer process operates is still unclear, limiting the usefulness and competency of the model (Miller & Allen, 2012). In addition, empirical findings so far have been mostly centred on investigating a change in valence toward a partner brand (e.g., Washburn, Till, & Priluck, 2004). Even those few studies which do investigate the transfer of meanings other than the valence, have mostly considered the transfer of conceptual brand features. Such a phenomenon ignores the fact that perceptual brand experiences are what create the perception of the brand in mind of consumers (Park, Kim, & Kim, 2002). Thus, meanings that are of interest in this thesis are not limited to those related to utilitarian or image-related brand features, but also include attributes based on wider perceptual experiences such as flavour, colour, or the scent of the brand.

As people acquire knowledge of the world through their senses, perceptual brand experience is the most effective and immediate source for a brand to create an impression in the mind of the consumer (Förderer & Unkelbach, 2015). Particularly, sensory signature, which is a certain sensory aspect of a brand, is expected to function as an effective means to activate a variety of brand meanings associated with a brand. According to Krishna (2010), when people are primed with a brand specific sensory input, they can easily recall information related to that brand. Thus, this thesis proposes and examines the efficacy of sensory signature not only in its ability to activate relevant brand meanings, but also to transfer them to a branded product in a different product category domain.

1.2 Research Rationale

While it is common knowledge that a brand is associated with number of different sensory aspects, such as the colour of the brand logo, the signatory sensory feature is particularly expected to possess a strong link to consumers' brand associations. Though not in the same branding domain, the research examining the effect of a brand's flagship product on consumer perception of the brand family can be argued to support this argument. As the product that consumers associate most closely with the brand, the flagship product functions as representative exemplar of the brand, and is often dominant in the same product category

(John, Loken, & Joiner, 1998). For example, if a flagship product is perceived as the most innovative among all the products under the same brand name, then the brand is also perceived to be the most innovative (Hubert et al., 2017). This implies that the assessment of brand perception is based on a retrieval of exemplar information that is most highly accessible in memory (Gürhan-Canli, 2003; Park & Hastak, 1994). Thus, as a flagship product and a sensory signature share some fundamental common characteristics, in that they are distinctive in nature and indicative of associated brand information, a sensory signature is expected to play a significant role among the many sensory features associated with a brand.

In order to understand this special influence of sensory signatures, grounded cognition is considered here instead of the more traditionally-used classic cognitivist perspective of cognition. The classic cognitivist perspective assumes that the mind is essentially abstract and disembodied, this approach ignores the fact that the sources of brand-related meanings are bodily experiences consumers have had with a brand (Sims & Doyle, 1995). As body plays a central role in understanding the mind where information processing takes place (Wilson, 2002), using the classical cognitivist view can be problematic as it raises the Symbol Grounding Problem (Harnad, 1990). The Symbol Grounding Problem seeks answers to questions such as “where do amodal symbols¹ get their meaning from, if their only sources of meaning are other meaningless amodal symbols?” (Lakens, 2014, p. 173). According to Glenberg (2010), it is like trying to figure out the meaning of a sign written in a foreign language using a dictionary written in that foreign language, and it will be akin to tracing the relations in the associative network defined by the dictionary. Thus this thesis adopts the Grounded Cognition approach, which emphasises the strong influence of bodily experience on an individual’s cognitive processes (Barsalou, 1999; Glenberg, 1997).

According to the grounded cognition perspective, cognition is inherently perceptual such that cognitive and perceptual processes are dependent on each other (Barsalou, 1999, 2008). As a result, the effects of conceptual processing of any object, such as a brand, should not be much different from the effects of perceptual processing of sensory-motor information which grounds the meaning of that brand (Ansorge, Kiefer, Khalid, Grassl, & König, 2010). For example, when people perceptually experience an object – for instance, seeing a lemon – the brain captures related perceptual features across the modalities and integrates them with sensory representations stored in memory (e.g., the yellow colour of a lemon) (Barsalou, 1999, 2008). Similarly, consumers transform perceptual brand experiences into brand meanings, which consist of semantic and perceptual brand-related information reflecting what consumers have experienced with respect to that brand (Barsalou, 2008; von Wallpach & Kreuzer, 2013). This information is the source of distinctive meanings that are dominant over other brand associations (Krishna, Lwin, & Morrin, 2010). Thus, the sensory-motor information of perceptual

¹ Amodal refers to something abstract, symbolic and “purely conceptual” (Goldman & de Vignemont, 2009, p. 155) and Amodal Symbol refers to the “linguistic labels” put on a concept (Malter, 1996, p. 273)

experience stored in the memory is reactivated, and recognised by a person even when the person just thinks about an object or when the person encounters it.

To summarise, this thesis aims to examine the effects of sensory signature on driving transfer of brand meanings, and eliciting them from a cobranded product. As the essence of cobranding strategy is the transferring of desirable brand meanings, it is important to partner with a brand that has a diagnostic brand cue, as much as being in partnership with one perceived favourably by consumers. While brand name is the most evaluative and heuristic brand cue, sensory signature cues can be as diagnostic as a brand name. The “signatureness” of sensory input implies that the scope of brand meanings it can cover can be as extensive as brand name, and thus have a potential to be used as an effective brand cue that can transfer brand meanings in a cobranding setting.

1.3 Research Objective

This thesis will combine and extend two multi-disciplinary theoretical streams to build up the theoretical framework that can explain how sensory signature can function as an effective brand cue that can transfer brand meanings in a cobranding context. Using McCracken’s (1989) Meaning Transfer Model and Barsalou’s (2008) Grounded Cognition. Consequently, this research attempt to answer the following broad question:

Whether, and how does, a sensory signature contribute to the transfer of brand meanings in a cobranding context?

To answer the research question presented above, this thesis was developed based on five main experimental studies, each of which aims to provide evidence of efficacy of sensory signature as an effective brand cue. In addition, Experiments 1 and 2 conducted in this thesis employed both traditional self-report, or explicit, measures, as well as reaction time measurement, an implicit measure. Implicit measures are less susceptible to respondents’ ability to control their responses and less dependent on subjective assessment of psychological construct under investigation (Gawronski & De Houwer, 2012). Because of such characteristic, implicit measure (i.e., reaction time measure) could tap into subconscious associations between a brand and its associated meanings (Calvert, Fulcher, Fulcher, Foster, & Rose, 2014), and thus measure whether and which brand meanings implicitly transfer to a cobranded product. Thus, employing both explicit and implicit measures, this thesis examined the effects of sensory signature as a brand cue on meaning transfer effects measured explicitly as well as implicitly. An overview of the experiments is presented in Table 1 below.

Table 1.1: Overview of experiments

Experiments	Objectives	Research design	Sample size	Method of Analysis
Experiment 1	➤ To examine whether <i>signature scent</i> perform as an effective brand cue as brand name in transferring brand meanings to the cobranded product.	2 (<i>Signature scent</i> : present vs. not present) x 2 (<i>Johnson's Baby brand name</i> : present vs. not present) x 2 (<i>Order of measurement presentation</i> : explicit measure first vs. implicit measure first) mixed design with first two factors as between-subjects and the last factor as within-subject	Undergraduate University students (n_explicit measure = 115; n_implicit measure = 113)	Planned Contrast
Experiment 2	➤ To examine whether <i>signature taste</i> perform as an effective brand cue as brand name in transferring brand meanings to the cobranded product. ➤ To examine how different types of brand meaning (i.e., perceptual and semantic meanings) contribute to the meaning transfer process when a sensory signature is used as a brand cue.	2 (<i>Signature taste</i> : present vs. not present) x 2 (<i>Red Bull brand name</i> : present vs. not present) x 2 (<i>Order of measurement presentation</i> : explicit measure first vs. implicit measure first) mixed design with first two factors as between-subjects and the last factor as within-subject	Undergraduate University students (n_explicit measure = 165; n_implicit measure = 138)	Planned Contrast
Experiment 3	➤ To exclude the alternative explanation for the meaning transfer effects found in Experiment 2 was the intensity of the taste, not the distinctive, brand-specific nature of Red Bull taste.	2 (<i>Red Bull taste</i> : present vs. not present) between-subject design	Undergraduate University students (n = 52)	ANOVA

Experiment 4	➤ To compare the effectiveness of the description of the sensory signature of a cobranded product with that of the signature taste found in Experiment 2.	3 (<i>Description of Red Bull-related information</i> : no information of Red Bull characteristic vs. perceptual characteristics of Red Bull vs. semantic characteristics of Red Bull) between-subjects design	Consumer panel (n = 167)	Planned Contrast
Experiment 5	➤ To further examine the efficacy of a verbal description of key semantic brand meaning (i.e., energy-boosting) found in Experiment 4 when the product picture is present.	2 (<i>Picture of the product</i> : present vs. not present) x 2 (<i>Red Bull brand name</i> : present vs. not present) x 2 (<i>Description of the candy feature</i> : sweet taste vs. energy-boosting) between-subjects design	Consumer panel (n = 171)	ANCOVA

1.4 Results and Findings

Via a series of five experimental studies, this thesis demonstrates the efficacy of sensory signature as an effective brand cue that can be used in a cobranding context. Experiment 1 examines whether sensory signature, the signature scent of Johnson's Baby Powder in particular, is as diagnostic as brand name. I proposed that even though a sensory signature cue is an implicit brand cue hard to be consciously recognised, it can perform meaning transfer as effectively as the brand name cue. The results show that sensory signature is an informative brand cue as much as brand name, because target brand-specific meanings were found to be transferred both explicitly and implicitly.

Experiments 2 to 5 investigate whether a sensory signature cue (i.e., the signature taste of Red Bull) is as evaluative as a brand name cue in terms of retrieving and transferring semantic brand meanings such as caffeine, energetic, exciting, and sporting, as well as perceptual brand meanings such as distinctive flavour, distinctive scent, fizzy, and sour). In Particular, in Experiment 2, the path that different types of brand meanings take to evaluate a cobranded product is analysed via serial mediation analysis. This path analysis is expected to contribute to the understanding of the underlying mechanism of meaning transfer effects. The results demonstrate that signature taste is significantly more effective than brand name in transferring perceptual meanings, and also as effective as the multi-cue. In transferring semantic meanings, the signature taste is as effective as brand name cue. It demonstrates that signature taste is not just one of the associations linked to brand name, but an equally interpretive brand cue that is able to activate a full range of brand-related meanings from memory. The efficacy of sensory signature is further supported when sweet Red Bull cobranded candies (i.e., similar but not a signature taste of Red Bull) generate less favourable attitudes towards the product than no cobranded product. Examination of path coefficients revealed that explicitly transferred semantic meanings could directly increase the valence of the cobranded lollies. In line with Glaser and colleague's (2013) finding, this results show that the favourable evaluation toward cobranded product found in the extant literature could be due to transfer of relevant brand meanings.

Experiment 3 provides evidence that efficacy of the signature taste of Red Bull in transferring brand meanings is actually derived from its signatory characteristics and not from the perceived difference in terms of the intensity of the taste of lollies between when Red Bull taste present and Red Bull taste is not-present. Experiment 4 compares whether the description of the sensory signature of a cobranded product can influence consumers' evaluation of the product as effectively as the taste of the product can. The results show that the verbal description of the signature sour taste of Red Bull is not an effective brand cue in transferring brand meanings, nor does it have an impact on the attitude toward the cobranded product. Rather, attitude toward the new cobranded jelly is found to be positively influenced by the description of semantic features. Lastly, the findings from Experiment 5 demonstrate that the presence of the product picture can support the verbal description of key semantic brand meaning to perform as an effective brand cue that can positively influence the attitude toward

the cobranded candies. In addition, the attitude toward energy-boosting candies is favourable compared to the cobranded product which emphasises its sweet taste, as the product picture might have encouraged the simulation of the signature sour taste.

1.5 Contributions to Marketing Theory and Practice

The results of this research offer several important contributions to both marketing theory and practice. First, sensory signature is shown to be an effective brand cue that can elicit comprehensive brand-relevant meanings as effectively as brand name. While previous research has demonstrated that perceptual feature of a brand can help endow certain semantic feature to the brand, it has been done only at a generic level. For example, adding green to a brand logo can elicit eco-friendliness onto the brand. However, unlike such a limited use of brand sensory information, in this thesis, sensory signature has proven to be able to access consumer memory and activate a broad array of brand meanings, demonstrating that sensory signature can be as effective a brand cue as is brand name. While the efficacy of a cognitive brand cue such as brand name has been widely utilised, the effect of sensory cues has been scarce. Thus, this thesis contributes to the existing branding literature by introducing a new type of brand cue that is as effective as brand name when presented alone and is even more effective when used in combination with the brand name.

Second, the serial mediation analysis reveals the pathway through which the brand meanings are transferred to a cobranded product. This finding provides additional insight into the understanding on how meanings transfer models operate. While most previous literature employing this model has focused on transfer of affect onto cobranded product, the results here demonstrate that it is transfer of brand meanings that influence the evaluation of cobranded product.

This research also contributes to the literature on grounded cognition by adding new evidence regarding application of simulation account in studies of consumer research. The research findings indicate that just reading a verbal description of a cobranded product reflecting the ingredient brand's signatory perceptual features is not enough to make consumers associate the product with those features. This might be because the exact nature of brand-specific features such as a sensory signature is hard to deliver linguistically, and a generic description of a sensory feature may not be good enough. In such cases, the visual presentation of a product is found to meaningfully influence the evaluation of the product by encouraging mental simulation.

Along with theoretical implications, this work also has broad practical implication for marketing practitioners that can help them better understand and plan how to develop effective cobranding strategy. As this research suggests the efficacy of sensory signature in transferring brand meanings in cobranding context is comparable to brand name, the brands searching for partner brands to employ cobranding strategy should consider whether and how the signature

perceptual feature of prospective partner brand should be associated with their own product. In this way, a brand manager can make more informed decision on choosing the right partner brand, one which can resonate with the right target market, establishing competitive advantage over competing brands (Roy, 2010).

Moreover, the findings also highlight the need to accentuate the semantic features of partner brands when the perceptual features cannot be directly experienced at point of purchase. For example, consumers often read the description of the product on the package instead of tasting it beforehand when they shop for food item. As a description of semantic feature of a product may exert more significant influence than the description of perceptual features on consumers' evaluation of cobranded product during shopping, advertisements or the description of the product on the package is better to emphasise semantic features of a product, such as the benefits from consumption.

1.6 Overview of the Thesis

The remainder of this thesis is organised as follows. Chapter Two begins by reviewing the cobranding research. It discusses the purpose and advantages of cobranding. The discussion of the meaning transfer model follows. This discussion will mainly focus on what the model is about and what the previously proposed mechanism of this model have been. Next, grounded cognition is discussed as a complementary theoretical explanation for how meanings would transfer when sensory signature is used as a cue.

Chapter Three presents propositions. The first part of the chapter discusses whether sensory signature is suitable as a brand cue, then the propositions are developed in the next part of the chapter. Chapter Four introduces methodologies used to conduct the main experiments. In addition, the conceptual framework of the effects of brand cues are proposed. Chapter Five discusses how each experiment was conducted for this thesis, and what results ensued. Specific hypotheses relating to Experiment 1 and Experiments 2 to 5 are presented.

Lastly, Chapter Six summarises the overall research purpose, discusses the research findings and their contributions, and concludes with the limitations of the thesis and directions for future research.

1.7 Conclusion

This chapter has provided an overview of this thesis, which aims to investigate whether and how sensory signature contributes to the transfer of brand meanings. In the next chapter, review of extant research on cobranding, meaning transfer model, and grounded cognition follows.

Chapter 2 REVIEW OF LITERATURE

Associating a brand with another entity which contains positive meaning, such as another brand, social cause, or celebrity, has proven to be a common but effective marketing strategy that can enhance the competitiveness of a brand (Keller, 2003). Thus, an understanding the way that consumers retrieve meanings associated with a brand is worthy of investigation, particularly in the cobranding context. This is because brand meanings that are transferred to a partner brand are used as a basis to form a liking for, and subsequent positive behaviour toward, that partner brand. More importantly, as consumers interpret brand based on their perceptual brand experiences, the sensory signature of a brand is expected to play a pivotal role in retrieving brand-relevant meanings. Thus, this section provides the theoretical foundation required to understand how brand-related meanings can be transferred in a co-branding context when a sensory signature is used as a brand cue.

This chapter contains discussion of three different research areas. First, in order to provide a context for the research, what cobranding is and what determines the effectiveness of this unique branding strategy are discussed (Section 2.1). Next, as one of two main theoretical streams, a review of the Meaning Transfer Model is conducted, explaining the model and how it is thought to operate (Section 2.2). Lastly, the remaining key theoretical stream, the literature regarding Grounded Cognition, is discussed. More specifically, the discussion explicates grounded cognition, introducing some of the underlying mechanisms that have been proposed in support of the concept, and explains the different views on the level a concept is grounded (Section 2.3).

2.1 Cobranding Research

This section focuses on providing information on what cobranding is and what determines effective cobranding strategy. Particularly, it outlines the nature and scope of cobranding strategies, and proposes that particular the interest of this thesis is with ingredient cobranding (Section 2.1.1). Next, I discuss the extant literature about “fit,” and provide evidence that the sensory aspects of a brand can favourably affect the evaluation of a cobranding product in the case of moderate incongruent fit (Section 2.1.2).

2.1.1 What is Cobranding?

In an attempt to gain more marketplace exposure and to achieve favourable image within a target market, firms often use a form of cobranding as a marketing communication tool. In broad terms, cobranding refers to the pairing of two or more brands in a marketing context (Grossman, 1997; Seno & Lukas, 2007). Associating a brand with another entity, such as another brand, social cause, event, or celebrity which contains positive meaning has proven to

be a common but effective marketing strategy (Keller, 2003). However, no consensus exists on the definition of what cobranding is (see Appendix 1 for a classification of different types of cobranding). Among a variety of cobranding types, this thesis employs ingredient cobranding, as it is the most effective means of incorporating sensory aspects of an 'ingredient brand' into a host brand. Betty Crocker's Hershey's chocolate brownie mix is a good example of a successful ingredient cobranding strategy, in that the ingredient brand (i.e., Hershey's) benefits the host brand (i.e., Betty Crocker), enhancing competitiveness by differentiation from competing brands. In addition to improving the competitiveness of the host brand, ingredient cobranding can also contribute to enhancing the perceived value of the host brand, because such strategy signals to consumers the combined benefits they can enjoy from different brands (Desai & Keller, 2002).

The essence of cobranding, including an ingredient cobranding strategy, is to establish the relationship between the partner brands that can create a mutually beneficial partnership for the parties involved (Motion, Leitch, & Brodie, 2003). Mutual benefits could take the form of an exchange, or flow, of desirable meanings which help the brand to be positioned in a way that is more difficult for competing brands to imitate (Keller, 1998; Seno & Lukas, 2007). Such transfer of meaning between partner brands align with the underlying assumption of the Meaning Transfer Model, which will be explicated in detail in section 2.2. Simply put, meaning transfer refers to the transferring of object-related associations (e.g., the innovativeness of Apple or youthfulness of Olympic) that reflect meanings of partner brands (Gwinner, 2005; Gwinner & Eaton, 1999).

According to Gwinner (1997), brand associations transfer meanings between partner brands, and by doing so the brands can expand their own network of brand associations which, in turn, contributes to establish or strengthen its image by acquiring (secondary) associations that it did not enjoy prior to brand partnership. Via this brand partnership, partner brands have the chance to reposition, or change perception of, their brands by adding positive brand associations (Gwinner & Eaton, 1999). Thus, cobranding not only contributes to reposition the image of already known brands, but also it can help unfamiliar brands expose themselves to consumers along with the well-known brands and thus enhance consumers' evaluation (for an exception, see Swaminathan, Gürhan-Canli, Kubat, & Hayran, 2015). As a result, because the core competency that creates advantages of cobranding is the transfer of brand meanings, academics and practitioners have begun to put emphasis on obtaining a good understanding on what should be considered when finding a right cobranding partner (Newmeyer, Venkatesh, & Chatterjee, 2014).

To summarise, this research is interested in ingredient cobranding, as it is the most common way in which the sensory aspects of a brand are integrated into a cobranded product. Such a cobranding strategy has been used effectively for multiple purposes, such as repositioning the brand image, obtaining awareness and favourable brand evaluation, or creating competitive advantage over competing brands. These favourable consequences are due to the transfer of brand-related meanings from one partner brand to the other. As such transfers, of brand-related meanings, are a key to success of a cobranding strategy, the next

section will discuss about the fit concept, which is known to influence the transferability of brand meanings.

2.1.2 Determinants of Effective Cobranding

Fit is one of the key factors that have to be considered prior to making a partnership decision, as it can either help or impede the transfer of brand meanings. Essentially, fit or degree of similarity, represents consumer perceptions of the link between partner brands (Meenaghan, 2001). Evaluation of similarity can be influenced by different factors, such as functional similarities (e.g., Tiger Woods endorsing Nike) or image similarities (e.g., Global brand Coca-Cola sponsoring the Olympics); so that as consumers are more likely to believe that partner brands share similar attributes, the evaluation of fit becomes higher (Messner & Reinhard, 2012). In addition to the effect of such conceptual attributes on fit judgment, Kuo and Rice (2015, p. 79) proposed and found that “the overlap of perceptual attributes such as color, size, and shape” positively affects perception of overall fit between a firm and cause, resulting in favourable cause participation intention. Similar influential roles of fit on consumer behaviour has been documented in various research related to cobranding, no matter whether the partnership is between a celebrity endorser and the product (Till & Nowak, 2000; Törn, 2012), event and sponsoring brand (Gwinner & Eaton, 1999; Speed & Thompson, 2000), or social cause and brand/company (Basil & Herr, 2006; Landreth, Pirsch, & Garretson, 2004). Thus, high fit is considered a key factor that facilitates effective transfer of brand meanings between partner brands, while relatively weak fit (i.e., moderate incongruence) is thought to prevent or impede this transferring process (McCracken, 1989; Messner & Reinhard, 2012; Ruth & Simonin, 2003).

However, there is some evidence that meaning transfer can occur under even moderately incongruent fit conditions, deriving favourable brand attitudes from consumers. Many researchers claim that high fit between partner brands is crucial for effective meaning transfer to take place (e.g., Becker-Olsen, Cudmore, & Hill, 2006; Cornwell & Coote, 2005; Simmons & Becker-Olsen, 2006). However, at the same time, some previous research suggests that moderate incongruence can enhance consumers’ response to cobranding strategy (Fleck & Quester, 2007) and can sometimes generate even more positive effects than a highly congruent partnership (Olson & Mathias Thjømøe, 2009; Trendel & Warlop, 2005). Jagre, Watson and Watson (2001) showed that, as long as it can derive positive responses, moderate incongruence between partner brands can result in better recall of brand associations and generate favourable attitudes. Such favourable evaluations occur when consumers regard one of the partner brands as more important to them (Speed & Thompson, 2000), consider the association between partner brands as interesting and creative (Masterson, 2005), or when the partnership is formulated between social cause with a commercial brand (d’Astous & Bitz, 1995). While such divergent evidence regarding consumer responses toward fit between partner brands deserves more attention for investigation, the effects of moderate incongruence have only been treated as something atypical, and have remained under-investigated (Coppetti,

Wentzel, Tomczak, & Henkel, 2009; Cornwall, Weeks, & Roy, 2005; Deitz, Myers, & Stafford, 2012; Sjödin & Törn, 2006).

One possible explanation of how moderate incongruence elicits favourable consumer responses is based on Schema Incongruity Theory (Mandler, 1982). Meanings of a brand constitutes the existing schema of a brand, and when the existing schema one holds about the partner brands are congruent, brand attributes will transfer effortlessly along the schema structure. When information about the partner brands does not fit to each other, people will try to relieve such discrepancy through resolution of the incongruity (Festinger, 1952; Mandler, 1982). Thus, people become more attentive to incongruent information, attempting to resolve such incongruity, and become more motivated to think about the information, influencing the evaluation of product (Fiske, Kinder, & Larter, 1983). For example, if an endorser does not fit with the brand then it will conflict with the consumer's brand schema as the endorser does not fit with the brand's existing associations (i.e., meanings), and thus the consumer is motivated to focus on the endorser's messages in order to reduce the conflict with the brand schema (Meyers-Levy & Tybout, 1989). Thus, high incongruence between partner brands result in an unfavourable consumer responses, while moderate incongruence leads to a more positive consumer response. In addition, according to Heckler and Childers (1992), moderate incongruence implies to a combination that is 'unexpected' but 'relevant,' so that if the fit between partner brands is moderately incongruent, either conceptually or perceptually, it will draw the attention of consumers and, as a result, contribute to effective processing of meaning transfer. Developing an understanding of the effect of perceptual attributes on evaluation of fit is thus important, as they are critical attributes that often receive more weight than functional or image-related attributes during similarity judgment (Lefkoff-Hagius & Mason, 1993). Yet the research examining their effect is scarce, with the exception of Kuo and Rice (2015).

To summarise, fit plays a key role in determining the effectiveness of cobranding strategy as it can influence the transfer of brand associations. In other words, the higher the similarity of partner brands the higher the evaluation of the cobranded product. Moderate incongruent fit, however, has also been found to lead to favourable evaluation, though not always. Thus, the next section will discuss how sensory aspects of a brand can influence the evaluation of a cobranded product when sensory features of a brand are used for the fit judgment.

2.1.2.1 The Role of Sensory Input when Moderate Incongruence Exist between Product Categories

Fit judgment is normally conducted in regard to similarity between partner brands. However, the closeness with which certain brand associations, particularly perceptual ones, are related to a partner brand is as important as the similarity judgment (Spiggle, Nguyen, & Caravella, 2012), as it can attenuate unfavourable effects from moderate incongruence between product categories. Thus, it is natural to assume that a brand cue that is indicative or closely related to such perceptual features would result in successful transfer effects even when the fit

is not high. First, I will discuss the situations in which perceptual features of a brand are used as a basis for a similarity judgment. Next, I will be discuss how relatedness of key perceptual features of a brand can resolve moderate incongruence between product categories.

While research examining the effect of perceptual fit on brand evaluation is rare in cobranding (with the exception of the paper already mentioned, by Kuo and Rice, 2015), some evidence exists in the area of brand extensions which shares a common underlying assumption, regarding the transfer of brand associations, with cobranding. For example, Park, Milberg, and Lawson (1991) found that perceived fit between a parent brand and its extensions is a function of both similarity of product features which include physical product characteristic (e.g., the round shape of a Rolex wristwatch) and relatedness of conceptual attributes (e.g., the prestige of the Rolex brand). Similarly, Bridges, Keller, and Sood (2000) demonstrated that consumers are concerned with both elements necessary for the performance of product or service function (e.g., physical features) and external factors related to purchase of consumption of the brand (e.g., user imagery) in their evaluation of brand extension fit. Similarly, in cobranding research, particularly in a cause-related marketing context, Kuo and Rice (2015) found that relatedness of perceptual attributes between a firm and cause (e.g., pink lemonade from Snapple and the Breast Cancer Association) can positively affect overall evaluation of fit and consequently cause participation intention. These studies do provide convincing evidence that perceptual attributes of a brand need to be considered as seriously as conceptual features (e.g., category similarity) in evaluation of fit.

Yet more interestingly, when perceptual attributes are brand-specific associations², they can override the effect of conceptual feature on evaluation of fit. For example, Broniarczyk and Alba (1994) found that the sweet flavour of Froot Loops³ exerts a more significant influence on the evaluation of fit than the conceptual attribute of product category. The physically dissimilar product category of lollipops is considered a more appropriate extension for Froot Loop cereal than the physically similar hot cereal. This implies that the relevance of unique, brand-specific, associations of the parent brand to the extension product can dominate the evaluation of overcoming the similarity judgment (Spiggle et al., 2012). In addition, Kuo and Rice (2015, p. 82) propose that perception of good fit is not simply the result of misattribution of familiarity based on conceptual similarity, but from the misattribution of “feeling right,” which individuals perceive from the partnership. As sensory signature is a signal as well as one of the brand-specific associations, whether sensory signature constitutes an integral part of the cobranded product will positively influence the evaluation of product even the product category fit between partner brands is moderately incongruent. Thus, the signal that can efficiently indicate such relevance between partner brands is likely to be useful information in the “feeling right” judgment, resulting in favourable evaluation of fit even when it is moderately incongruent.

² Brand-specific associations refer to “those not shared with other members of the product category” (Spiggle et al., 2012, p. 968).

³ Froot Loops is one of breakfast cereal brands from Kellogg's that has sweet, fruity flavours.

In summary, the extant research considering the fit judgement as a key determinant of effective meaning transfer has assumed that the similarity of brand features, particularly conceptual features, exerts the most significant influence on evaluation of the fit and subsequent judgment based on that evaluation. Later research, however, has been interested in expanding the scope of the criteria that can be used in the fit evaluation. As a result, how closely key perceptual brand features are related between partner brands is also found to have a favourable influence even when the fit evaluation based on conceptual features is relatively low. Thus, a sensory signature that is closely related to such perceptual features is expected to function as an effective brand cue that leads to favourable transfer effects even when the fit is not so high.

2.1.3 Review and Summary

Cobranding is an effective marketing communication tool that can help brands have a chance to reposition, or change consumers' perceptions, by adding positive brand associations from a partner brand to its own. Such changes in the consumer brand perceptions is performed through linking, or associating, the brands with the partner brands. Such partnership can take many different forms based on the level of integration between the brands. Among others, this thesis is interested in ingredient cobranding, as it can be effectively used in incorporating sensory aspects of a brand into its partner brand.

Fit is the key determinant of successful cobranding strategy that has been most frequently discussed in the literature. Widely interpreted as the degree of similarity between partner brands, high fit is considered a necessary condition for favourable evaluation of a cobranded product. However, research has demonstrated that even a moderately incongruent fit can also have a positive influence on evaluation. For example, when the fit judgment is based on how closely the key perceptual feature (e.g., sweetness of cereal) is related to the cobranded product (e.g., lollypop), moderately incongruent fit between product categories does not have an unfavourable effect on the evaluation of the cobranded product. This implies that if a brand cue is indicative of a perceptual feature, or that perceptual feature itself is used as the brand cue, then it is likely to lead to a successful transfer of brand meanings even when the fit is not high. Thus, this thesis proposes to use sensory signature of a brand as a brand cue. Next, I will discuss the meaning transfer model, which provides an explanatory framework of how associations or meanings are transferred in a cobranding context.

2.2 Meaning Transfer Model

As briefly mentioned above in the discussion of cobranding, the transfer of brand meanings is the core of how and why cobranding can benefit involved brands. This section aims to provide a comprehensive understanding of the Meaning Transfer Model is, and how it works. The discussion will commence with McCracken's (1986) Cultural Meaning Transfer model,

which has become commonly known and referred to as the meaning transfer model. Based on this foundation piece, the following section will track the development of the meaning transfer model (Section 2.2.1) and the previously proposed underlying mechanism of the meaning transfer model (Section 2.2.2).

2.2.1 What is the Meaning Transfer Model?

In this section, I review the literature on how the idea of meaning transfer has been adopted into consumer research, particularly in branding. Following that, how the meaning transfer model operates is discussed. The section concludes by identifying gaps in current research concerned with the meaning transfer model, and proposes how this work can contribute to filling this gap.

2.2.1.1 Development of Meaning Transfer Model

The idea of meaning transfer within a consumer context was developed by McCracken (1986) when he introduced his Model of Cultural Meaning Transfer, which proposes that meanings carried by goods, mainly consumer objects, have a mobile quality; implying the transferability of those meanings. The proposition was based on evidence from earlier anthropological and ethnographical studies which revealed that the significance of consumer goods is their ability to carry and communicate cultural meanings (Douglas & Isherwood, 1978; Sahlin, 1976). McCracken (1986), however, was not crystal clear on what he meant by cultural meaning when he discussed the model. Thus, Strauss & Quinn's (1997, p. 6) definition of cultural meaning, rooted in cognitive theories, is adopted in this thesis: "...the typical (frequently recurring and widely shared aspects of the) interpretation of some type of object or event evoked in people as a result of their similar life experience." As cultural meaning in McCracken's (1986, 1988) model is said to reflect the "person-object" relationship residing in everyday experience, Strauss and Quinn's (1997) definition of cultural meaning – which also emphasises the link between them – is deemed most suitable.

The term meaning transfer is used instead of cultural meaning transfer in this thesis. McCracken (1986, 1988, 1989) himself used the terms cultural meaning transfer and meaning transfer interchangeably in his studies, and later studies adopting the model of cultural meaning transfer (e.g., Campbell & Warren, 2012; Gwinner, 1997; Gwinner & Eaton, 1999; Miller & Allen, 2011) simply refer to it as the meaning transfer model. In fact, when "the meaning" of something is referred to, it is shorthand for cultural meanings (Strauss & Quinn, 1997).

Via the meaning transfer model, McCracken's (1986) proposed a conventional path that depicts the movement of meaning in society. Meaning moves between three locations; originating from the culturally constituted world, which is the physical and social world that reflects the beliefs and assumptions of a persons' culture, it moves to consumer goods and

then, finally, moves into individual consumers (McCracken, 1986, 1988). This movement of meaning from the culturally constituted world to consumer goods is facilitated through various communication instruments such as advertising, and the movement from the consumer goods to individual consumer is accomplished via rituals such as possession or exchange of consumer goods (McCracken, 1986, 1988).

Later, McCracken (1989) refined his previous work on the movement of meaning and further developed it into three-staged meaning transfer process illustrating how celebrities can acquire certain meanings and transfer them to a product. In stage 1, the celebrities acquire meaning through their roles in “television, movies, military, athletics, and other careers” (McCracken, 1989, p. 315). The meaning celebrities represent is based on consumers’ overall assessment of the characteristics of the roles celebrities possess, such as social class, gender, age, personality, and life style (Gwinner, 1997; McCracken, 1989). Stage 2 involves the meaning attributed to celebrities being transferred from the celebrity endorser to a given product through pairing them in an advertisement (McCracken, 1989). Meaning associated with the celebrity become associated with the product in the minds of consumer through an endorsement (Gwinner, 1997). In stage 3, the final stage, consumers take in the meaning associated with the celebrity by consuming the product (McCracken, 1989). Of the three stages, the second is of most interest to this thesis, as this stage directly refers to the transfer of the meanings from a target brand (e.g., celebrity) to the product (e.g., product that celebrity endorses in advertisement) by pairing them (Miller & Allen, 2012).

2.2.1.2 Meaning Transfer Model in Branding Research

In his seminal paper, Keller (1993) extended this idea of meaning transfer into the branding context by proposing that the meanings consumers associate with a brand may become indirectly associated with another object linked with the brand. This is useful branding strategy as it can drive consumers who are favourably disposed toward meanings associated with a brand to be engaged easily with the product or service associated with that brand. Examples of this strategy vary from simple brand extension (Aaker & Keller, 1990; Voelckner & Sattler, 2006, 2007), and brand alliances (Simonin & Ruth, 1998; Walchi, 2007), to celebrity endorsement (McCracken, 1989).

Brand meaning refers to the collective knowledge constituting dominant perception of a brand in a consumer’s memory (Franzen & Bouwman, 2001; Mühlbacher et al., 2006). The meanings consumers associate with a brand are contained within brand associations which are informational nodes linked to a brand in consumers’ memory (Keller, 1993). Consumers build up such brand associations based on what they have experienced, learned, and felt about a brand over time (e.g., Aaker, 1991; Homer, 2008). Classic approaches list three different types of brand associations; attributes, benefits, and attitudes (Keller, 1993). This distinction among brand associations is based on the amount of information summarised or included in the association, attributes being the most narrative and attitudes being the most abstract (Keller,

1993). Among others, attributes have been considered the most important by both academics and practitioners as they describe what the brand represents and what the brand can offer upon its consumption (Qu, Kim, & Im, 2011). In fact, brand attributes are what distinguish a brand from competing brands and thus can have direct influences on consumer purchase intention and their subsequent behaviour (Faircloth, Capella, & Alford, 2001; Puth, Mostert, & Ewing, 1999).

Until now, however, most empirical studies which have employed the meaning transfer model have either examined the impact of the model on changes in brand attitudes (i.e., valence) or the transfer of conceptual brand-related attributes that are functional and/or symbolic (e.g., Park, Kim, & Kim, 2002). While brand attitude reflects how a brand is perceived in mind of consumers, meanings consumers associate with a brand are not limited to valence toward a brand. Recently, Glaser and Walther (2013) even demonstrated that the liking of an unfamiliar object (e.g., picture of polygons) paired with another object (e.g., picture of large objects) is driven by the transfer of attributive feature of the latter, not by the liking of it. Moreover, among different types of brand attributes, Lefkoff-Hagius and Mason (1993) found that the similarity of perceptual attributes (e.g., colour) exerts more influence than functional (e.g., functional benefits) or image/symbolic attributes (e.g., the positioning of a brand as prestigious) on fit judgments which influences transfer of brand meanings. This is in line with the fact that people obtain information about brand attributes through multiple senses. When people interact with products or services, usually more than one sensory system is involved in this interaction (Fenko, Schifferstein, Huang, & Hekkert, 2009). As brand experiences are inherently multimodal (Teichert & Schöntag, 2010), the understanding of brand attributes should not be limited to the traditional approach of product-related (i.e., functional) versus non-product-related (i.e., symbolic), but needs to be further explored by emphasising the perceptual nature of brand attributes obtained from brand experience. Thus, this thesis aims to examine transfer of brand attributes, as they are key constituents of brand meanings interpreted by consumers. Particularly, transfer of both perceptual and semantic brand attributes are examined.

To summarise, meaning transfer model has been widely used across various branding research, for example, in brand extension, celebrity endorsement, and product placement, to name a few. This thesis will expand the use of meaning transfer model in branding research by proposing the use of sensory input as a brand cue that can initiate and drive transfer of brand meanings. Next, I will discuss the previously proposed underlying mechanism of meaning transfer model.

2.2.2 Underlying Mechanism of Meaning Transfer Model

Knowledge about brand in consumer memory plays an important role in brand-related decision making, as such brand information influences how consumers perceive the brand in relation to external stimuli (Keller, 1993). For example, when brand managers are talking about repositioning the brands, it is performed through linking or associating their brands with

secondary sources such as other people, places, things, or brands (Keller, 2003). The most frequently used theoretical basis to understanding such persuasion mechanisms of meaning transfer is based on the Associative Network Model (e.g., Bigne, Curras-Perez, & Aldas-Manzano, 2012; Halonen-Knight & Hurmerinta, 2010; Hoeffler & Keller, 2002; Smith, 2004; Till & Nowak, 2000). According to this model, one's memory of knowledge consists of a network of nodes connected via associative links (Anderson, 1983; Collins & Loftus, 1975; Wyer & Srull, 1986). Nodes are individual pieces of stored information about the object, and this information is retrieved from memory when a node is stimulated from other linked node in memory (Collins & Loftus, 1975; Ratcliff & McKoon, 1988). This process is known as "spreading activation" (Anderson, 1983). For example, in case of celebrity endorsement, where one set of nodes (e.g., associations such as youthfulness, pre-eminence linked to Tiger Woods) activates thinking about other 'linked' nodes (e.g., Nike, the sponsoring brand). Thus, in cobranding context, brand meanings transfer from one partner brand to the other via spreading activation, and such an act of transfer contributes the brands to expand their own network and acquire secondary associations that they did not enjoy prior to brand partnership.

A number of different theories based on the Associative Network Model have been used to explain how meaning transfer model operates. To name a few, there are mere exposure effects (Zajonc, 1968), schema theory (McDaniel, 1999), balance theory (Heider, 1958) and attribution theory (Heider, 1958). Among others, the conditioning paradigm, particularly evaluative conditioning, has been frequently employed by researchers to explain how associative links are developed between stimuli (Till & Nowak, 2000; Till, Stanley, & Priluck, 2008). The following section, therefore, will aim to provide a detailed discussion on how the conditioning paradigm has been used to help understand the transfer of brand meanings.

2.2.2.1 Evaluative Conditioning and Attribute Conditioning

In order to interpret the existing empirical findings of the meaning transfer model, it is important to clearly understand what is meant by 'evaluative conditioning' (De Houwer, 2007). Whereas some researchers consider evaluative conditioning as a theoretical process, De Houwer proposes that it should be conceptualised as an effect (i.e., "an actual change in liking as the result of pairing stimuli") (De Houwer, 2008). Defining evaluative conditioning as an effect can solve problems that arise when evaluative conditioning is defined in terms of a process⁴ (De Houwer, 2007; Hofmann, De Houwer, Perugini, Baeyens, & Crombez, 2010). The most problematic issue in defining an evaluative conditioning as a process is that it restricts attention toward the possibility that other processes are responsible for evaluative effects (De Houwer, 2007). Therefore, De Houwer (2007, 2008) advises that evaluative conditioning should be defined in terms of an effect, acknowledging the possibility that this effect can be explained by

⁴ Evaluative conditioning as a process assumes that it is "an automatic, bottom-up, and low-level process that involves the formation and updating of associations between representations in memory" (De Houwer, 2008, p. 11).

other theoretical accounts that influences the formation of associations in memory. For example, Gawronski and Payne (2011) propose that conditioning effects can be the result of the interplay between associative and propositional processes⁵. Thus, as it is more appropriate to define evaluative conditioning as an effect, previous findings regarding this effect are better treated as evidence that transfer of liking has occurred. Relevant to the focus of this thesis, the recent research has extended into attribute conditioning.⁶

Attributing conditioning effects refer to changes in people's assessment of an object, with respect to the attributes, as a result of transfer of attributes from the other object in a pair (Förderer & Unkelbach, 2015). Previous studies using the Meaning Transfer Model have focused on examining evaluative conditioning effects by demonstrating that the valence toward one brand can be transferred to its partner brand (Hofmann et al., 2010). However, meanings consumers associate with a brand are not limited to one's affect toward the brand, but they are also inclusive of various semantic attributes and experiences associated with the brand (Besharat, 2010; Förderer & Unkelbach, 2011). Some empirical findings demonstrate that evaluative conditioning effects are actually demonstrating attribute conditioning effects. For example, pairing a picture of a fictitious pizza brand with a picture of a racing car has resulted in a transfer of non-evaluative property of "speed" (Kim, Allen, & Kardes, 1996). These researchers have also shown that "softness" of a picture of kittens transfers to a picture of a box of tissues. In fact, those non-evaluative properties are what firms are looking for from meaning transfer. A particular interest of this thesis lies in perceptual brand attributes derived from perceptual brand experience, as such experience is the source of distinctive meanings that are dominant over other semantic brand attributes (Krishna, Lwin, & Morrin, 2010). Grounded cognition – which will be discussed in the next section – provides the explanation of why a perceptual brand experience can exert significant influence on the formation of brand meanings.

2.2.3 Review and Summary

The Meaning Transfer Model assumes that meanings associated with an object, such as a brand, celebrity, or social cause, have a mobile quality, such that they can be transferred when an object is paired with another (McCracken, 1989). This model is widely applied in branding research and in different types of branding strategy, such as brand extension or cobranding. While brand meanings are built based on what consumers have experienced, learned, and felt about a brand, empirical studies employing meaning transfer model so far have

⁵ According to Gawronski and Bodenhausen (2011, pp. 61-62) associative process is defined as "the *activation* of mental associations in memory, which is assumed to be driven by spatiotemporal contiguity between stimuli and the similarity between the features of input stimuli and available memory representations" whereas propositional process is defined as "the *validation* of the information that is implied by activated associations, which is assumed to be guided by the principle of logical consistency."

⁶ Other terms have been often used to refer to the same phenomenon, such as semantic conditioning (Galli & Gorn, 2011), associative learning of non-evaluative covariations (Olson, Kendrick, & Fazio, 2009), concept conditioning (Glaser & Walther, 2013), and attribute conditioning (Förderer & Unkelbach, 2015).

either examined changes in brand attitudes or the transfer of conceptual brand meanings. This does not reflect the fact that perceptual features of a brand can exert more significant influence than the conceptual features (e.g., functional benefits) as brand experiences are multimodal in nature. Thus, this thesis aims to examine the effect that transfer of both perceptual and semantic brand meanings has on evaluation of cobranded product.

This section also discusses the Associative Network Model, which is the theoretical basis used to understand how meanings transfer. Traditionally, the conditioning paradigm has been considered to best match with associative network models. However, according to De Houwer (2007), such an assumption limits the opportunity to expand the understanding of meaning transfer models, such that a conditioning paradigm is better understood as an effect. His argument opens an opportunity window through which to bring various theoretical perspectives and provide an explanation of how brand meanings transfer in different contexts. Thus, this thesis will adopt the grounded cognition perspective, as it is interested in examining how a sensory signature can work as an effective brand cue that drives transfer of different of both perceptual and semantic meanings.

2.3 Grounded Cognition

This section illustrates the current understanding regarding Grounded Cognition (Barsalou, 2008). First, I will discuss what grounded cognition is, how it is different from classic cognitive views, and what criticism is levelled at it (Section 2.3.1). The different explanations of the underlying mechanisms of grounded cognition are then introduced (Section 2.3.2). Finally, the perspectives regarding the level of embodiment are illustrated, along with an explanation of, *inter alia*, why the weak embodiment perspective is appropriate for this thesis. Thus, this section aims to provide fundamental knowledge required to understand what grounded cognition is, and proposes an appropriate perspective to guide the research described in this thesis.

2.3.1 What is Grounded Cognition?

For the past 30 years there has been a growing consensus of the idea that the body⁷ plays a central role in understanding the mind, where information processing is thought to take place (Wilson, 2002). Body, however, is not merely a channel for inputs from the world and outputs generated by mind, rather it is what connects the mind and the world (Glenberg, 2010). Such a central role of body has been advanced by research of Grounded Cognition which

⁷ The body here means “the whole physical body minus the brain” (Solnais, Andreu-Perez, Sánchez-Fernández, & Andréu-Abela, 2013, p. 154). In grounded cognition, the role of the brain is to guide the interaction between mind and the physical and social world that is mediated by the body (Glenberg, 2010).

emphasises the strong influence of body on individual's cognitive processes (Barsalou, 1999, 2008).

The basic tenet of grounded cognition is that cognition is inherently perceptual such that cognitive and perceptual processes share a single conceptual system, that is operated along similar principles (Barsalou, 1999, 2008). As a result, the effects of the conceptual processing of any symbol, such as a word, should not be much different from the effects of the perceptual process of sensory-motor information which grounds the meaning of that word (Ansorge, Kiefer, Khalid, Grassl, & König, 2010). Evidence from functional neuroimaging studies of the brain support this idea by showing that a word's meaning may be stored within the same neural systems that are active during perception and thus the conceptual processing of a word's meaning depends on simulation occurring in the sensory system (Barsalou, Spivey, McRae, & Joanisse, 2012). According to Barsalou (2008, p. 618), simulation refers to “the re-enactment of perceptual, motor, and introspective states acquired during experience with the world, body, and mind” and it plays a central role in understanding the causal role the bodily experience and sensorimotor systems have on cognitive processes. For example, recognising a sensory-related word (e.g., telephone for sound) activates the relevant sensory-motor system (e.g., auditory association area in the brain) which is also activated when subjects listen to real sounds (Madhavan & Grover, 1998). Through repeated experiences with an object, the brain develops an understanding of an object as perceptual states representing that object. Then, later on, the simulation of the object-related modality-specific representations (e.g., visual, olfactory, gustatory, sound, and tactile information of that object) become sources for the retrieval of the object in one's mind (Cian & Cervai, 2011; Khushaba et al., 2013). Therefore, grounded cognition provides a plausible explanation about how people can learn about and behave toward the outside world.

2.3.1.1 Comparison with Classic Cognitive Views

Until recently, consumer research has been heavily involved with the classic cognitivist view of understanding the world. Classical cognitivist views assumes that the mind is essentially disembodied, and thus it contrasts with the fundamental assumption of grounded cognition. In other words, the former perspectives assume that knowledge of the world exist in a semantic memory system as amodal symbols, and is separated from modality-specific systems operating to process perception (e.g., vision, olfaction), action (e.g., movement), and emotion (e.g., Fodor, 1975; Smith & Medin, 1981; Tulving, 1972). According to classic cognitivist view, sensorimotor representations of an object received via sensory channels are transduced into amodal symbols which are stored in memory in non-sensory-related format (Barsalou, Kyle Simmons, Barbey, & Wilson, 2003). These amodal symbols are what constitute knowledge; people use them for processing of information related to the concept of their interest. This classic cognitivist perspective, however, is not without a problem.

According to Shapiro (2007), the most serious challenge a classical cognitivist faces is about the origin of mental content (i.e., representational content of concept). In other words, from where do amodal symbols acquire their meaning? According to Glenberg (2010), it is like trying to figure out the meaning of a sign written in the foreign language using a dictionary written in that foreign language. No matter how hard one tries to reach the meaning of the first word in the sign, it will be just tracing the relations in the associative network defined by the dictionary (Glenberg, 2010). Moreover, evidence also exists demonstrating the causal role of sensory-motor systems in conceptual processing. Fernandino et al. (2013) investigate this issue by comparing the cognitive performance of Parkinson's disease patients, who have abnormalities in their motor system, with that of control groups of a similar age. A comparison was made of their ability to process action-related and abstract verbs, and the findings indicate that the motor system plays a causal role in the processing of action verbs, as the patients show selective impairment comprehending action verbs (e.g., words describing hands actions like to grasp) compared to abstract verbs (e.g., to cheat). Thus, concepts should be grounded, and it is the sensory-motor system of the body that provides this grounding (Glenberg, 2010). Following grounded cognition ideas, it can be deduced that perceptual brand experience constitutes the basis for understanding of the brand; not only the perceptual features related to the brand but what the brand represents.

2.3.2 Underlying Mechanism of Grounded Cognition

Barsalou (2008) has made it clear that the grounded cognition and classic cognitivist view (e.g., associative network model) can work together to create cognition. In line with this perspective, a number of different mechanisms have been proposed, providing a comprehensive explanation of how bodily experience influences the processing of cognition. This section illustrates a few prominent mechanisms that can be used to develop predictions of how a brand-related sensory input, such as a sensory signature, influences the activation and processing of brand meanings.

Among various mechanisms proposed to explain how bodily experiences affect information processing, three of them are introduced in this thesis as, together, they can provide a comprehensive explanation of the phenomenon (Körner, Topolinski, & Strack, 2015) (See Figure 2.1). The mechanisms explained here are good guides to understanding how a sensory signature can transfer brand meanings to a cobranded product, as they all aim to provide an explanation of the effect the physical experience of a stimulus has on activation of the relevant associations.

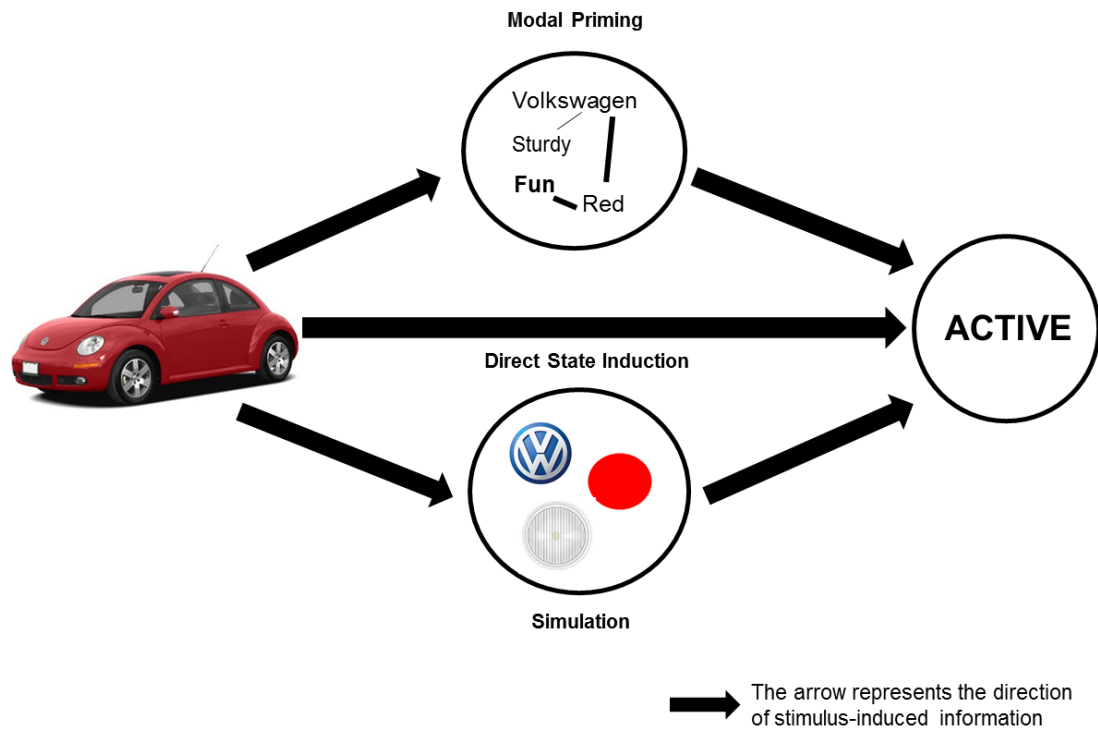


Figure 2.1. Three possible underlying mechanisms of Grounded Cognition

Direct state induction assumes the direct influence of some bodily state on a change of one's affective feeling or non-affective state of mind, without any mediation, leading from perceptual experience (e.g., seeing a RED Volkswagen car) to activation of relevant associations (e.g., concept of "Active" from seeing a red car) (Barsalou, Niedenthal, Barbey, & Ruppert, 2003; Neumann, Förster, Strack, Musch, & Klauer, 2003; Niedenthal, 2007). Various instances of direct state induction can be found in the literature. For example, positive effects on mood and depression symptoms have been observed in people who underwent treatment to disable the corrugator muscle with botulinum toxin (Lewis & Bowler, 2009; Wollmer et al., 2012). Such findings imply that facial configuration (e.g., frowning) has a direct influence on mood improvement, supporting direct state induction. However, at the same time, direct state induction can occur cognitively, which means that this mechanism is not specific to bodily states.

Modal priming assumes that conceptual representations contain modality-specific aspects in them, and thus stimulation of bodily states activates the associated concepts via spreading activation (e.g., Smith & DeCoster, 2000; Strack & Deutsch, 2004; Zhang & Li, 2012). According to this view, activation of abstract concepts partly depend on how those concepts are represented (Lee, 2016). Following the associative network models, memory consists of a semantic network of nodes (e.g., Volkswagen, sturdy, red, and fun) related to the physical stimulus, and thus the exposure to this stimulus will spread the activated concept. For example, experiencing physical warmth from holding a hot (vs. iced) cup of coffee influenced to judge a target person to have a warmer, more generous personality (Williams & Bargh, 2008).

Contrary to modal priming, simulation assumes that a physical stimulus can automatically activate the concepts by re-enactment of previous bodily experiences (Barsalou, 2008). Modality-specific states experienced are captured in memory as perceptual states (e.g., red colour of the car) and later even in the absence of visual presentation of physical stimulus, those perceptual states can be activated (Barsalou, Kyle Simmons, et al., 2003). This contention of simulation is further supported by findings from Häfner (2013). Participants, while standing, answered a questionnaire attached either to a light or heavy clipboard, and it was found that as people indicate themselves as more sensitive to their bodily states and processes, the perceived weight of the clipboard increased.

To summarise, in this section three possible routes of grounded cognition are discussed. In order to examine whether sensory signature can work as an effective brand cue that can transfer brand-related meanings, it is necessary to understand how such sensory input is processed. However, what these mechanisms do not explain is “how knowledge is grounded, and to what degree this grounding is based on the body” (Körner et al., 2015, p. 1). Thus, in order to decide which mechanism is most appropriate to understand and predict the way a sensory signature is used as a driver of brand meaning transfer, it is imperative to understand the degree of embodiment of a concept; discussion of this issue follows.

2.3.3 Degree of Embodiment

While it is agreed that the central idea of grounded cognition is that cognitive processes ground in bodily perception and action, the idea can be further divided into four groups based on the degree of embodiment of a concept (Binder & Desai, 2011; Masson, 2015; Meteyard, Cuadrado, Bahrami, & Vigliocco, 2012; Meteyard & Vigliocco, 2008). (See Table 2.1) Such a categorisation is necessary as, depending on the view taken with respect to the degree of embodiment of a concept, the underlying assumption chosen to predict the effect of sensory input on the activation of brand meanings will be different. This is because each perspective has different assumptions regarding the activation of the contents of mental concepts, which are more than just perceptual attributive features, such as sweet or yellow, and abstract features, such as healthy (Meteyard et al., 2012; Semin & Smith, 2013). In other words, conceptual processing of an abstract set of features of an object is influenced by the processing conducted by the sensory-motor system (Meteyard et al., 2012; Meteyard & Vigliocco, 2008).

Table 2.1: A continuum of embodiment

Label	Disembodied	Secondary embodiment	Weak embodiment	Strong embodiment
				
The relationship between semantic contents and sensory motor system	Symbolic/Amodal	Amodal	Cross-modal integration	Multimodal
	Complete independence	Independent but associated	Partial dependence	Complete dependence
	Classic Cognitivist View		Perspective taken in this thesis	

Note: The contents of this table are adopted from Meteyard et al. (2012, p. 791)

A disembodied perspective posits no role for sensory input in delivering semantic representations. Such semantic information is truly symbolic and devoid of content (Harnad, 1990) and the processing of semantic information is undertaken while being completely separated from sensory-motor systems. Thus, the disembodied perspective is in line with how a concept is understood by classic cognitivists. On the contrary, a strong embodiment perspective proposes that semantic processing is carried out by a single system which performs multi-modal integration within a given modal area. In other words, conceptual and perceptual processing of information is conducted within the same sensory-motor system and they cannot be separated. Both disembodied and strong embodiment perspectives are considered rather extreme and not complete, as they ignore the evidence of the influence the other perspective has on information processing. Secondary embodiment perspectives assume that the format of semantic representations is amodal, but that these amodal semantic representations are derived from the sensory-motor system. A weak embodiment perspective is similar to secondary embodiment perspective, as the former also assumes that the content of semantic information is related to perceptual knowledge. The difference, however, is that weak embodiment assumes that conceptual representation consists of multiple levels of abstraction from sensory, motor, and affective input (Binder & Desai, 2011).

In linking the discussion of degree of embodiment to this thesis work, a weak embodiment perspective seems the most appropriate as it recognises the influential role that sensory input has on activation of the related association, even abstract ones. In particular, this perspective posits that concepts consist of multiple levels of abstraction from sensory and motor information, whereas the top level contains abstract, semantic features which are abstracted from the concrete, perceptual features schematic representations (Binder & Desai, 2011; Dove, 2011). In other words, concepts are complex structures linking semantic meanings, which consist of semantic attributive features with both an abstract and symbolic nature, and perceptual meanings are the attributive features incorporating perceptual representations of sensory, motor, and emotional experience with the concepts. It is because abstract, semantic

meanings need to be “grounded,” in order to enable the organism to use them as tools for interacting with the real world (Harnad, 1990). Biological accounts of cognition also support the distinction between semantic and perceptual meanings, implying hierarchical relationship between symbolic and sensorimotor information (Eliasmith, 2004; Stewart & Eliasmith, 2012). Thus, based on the weak embodiment perspective, perceptual features are the most basic and instinctual sources of attributes people associate with the brand, such that concrete, perceptual attributes will be the key constituents of the brand meaning.

2.3.4 Review and Summary

Grounded cognition assumes that cognition is inherently perceptual such that cognitive and perceptual processes share a single conceptual system (Barsalou, 1999, 2008). In other words, the processing of a concept involves the activation of brain areas that are related to the perceptual experiences of that concept. Among various underlying mechanisms that can explain how bodily experiences affect information processing, three of them are introduced; direct state induction, modal priming, and simulation. What is commonly assumed across these mechanisms is that physical experiences contribute to the processing of cognition as knowledge of the world is grounded on them. However, these mechanisms do not explain to what degree this grounding is based on the physical experiences. From the four categories of degrees of embodiment, I choose to take a weak embodiment perspective, as it assumes the effect of sensory input in activating relevant associations, even the semantic ones.

2.4 Conclusion

The aim of this chapter was to set the scene for the investigation of meaning transfer effects derived by a sensory signature, by reviewing different theoretical perspectives; cobranding research (Section 2.1), meaning transfer models (Section 2.2), and grounded cognition (Section 2.3). First, the nature and scope of cobranding research was discussed (Section 2.1.1) along with what determines an effective cobranding strategy (Section 2.1.2). Next, details on what a meaning transfer model is (Section 2.2.1) and how the model operates, was discussed (Section 2.2.2). Finally, previous literature on grounded cognition was discussed by explaining grounded cognition and how it is different from the classic cognitivist view (Section 2.3.1), introducing the underlying mechanism of grounded cognition (Section 2.3.2), and proposing the view I take within embodiment perspectives (Section 2.3.3). Based on this discussion, the next chapter illustrates the propositions concerning how sensory signature might contribute to the transfer of brand meanings.

Chapter 3 DEVELOPMENT OF PROPOSITIONS

In the previous chapter, I reviewed cobranding research, meaning transfer models and the Ground Cognition Perspective. This review provided the background knowledge required to conduct the research regarding the role which sensory signature may have on meaning transfer effects in a cobranding context. This chapter moves on to develop the predictions for the effects of sensory signature as a brand cue in a number of different conditions in relation to a brand name (e.g., in isolation or in combination with a brand name). First, the effects and the use of a brand cue are outlined (Section 3.1). More specifically, this section provides information on brand cues and how brand name has performed as one of the most effective cues in retrieving brand-related information (Section 3.1.1). Then, the sensory signature is proposed as a new brand cue that can be used as effectively as brand name in a cobranding context (Section 3.1.2). The effects that multiple brand cues (i.e., brand name and sensory signature) might have on the transfer of brand meanings are discussed next (Section 3.1.3). In the final section, a number of different perspectives on how brand cue(s) might influence the transfer of brand meanings are discussed, each perspective is matched to a corresponding proposition (Section 3.2).

3.1 Effects of Brand Cue

A brand is comprised of any brand-related information, such as product category, product user, usage situation and summary evaluations that are linked to the brand in memory (Keller, 1993). Consumer memory contains this information as a network of interconnected nodes which are individual pieces of stored information about the brand linked via associative links (Anderson, 1983; Collins & Loftus, 1975). Thus, when new information is encoded, for example, as a result of seeing an advertisement, hearing some word-of-mouth or having a personal experience, it is stored in memory as an information node linked to other nodes constituting a network of brand information. Such brand information can be retrieved when nodes in memory are stimulated via activation from other linked node(s) in memory-linked associative path ways (Collins & Loftus, 1975; Ratcliff & McKoon, 1988).

According to this associative network model, the likelihood that one node will activate the other depends on the strength of the link between the nodes (Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Fazio, Williams, & Powell, 2000; Keller, 1993). The strength of association between nodes is important because it determines the extent to which the activation of a node spreads to other nodes so that particular information can be retrieved from memory (Collins & Loftus, 1975; Keller, 1993). This is because the stronger the links connecting brand nodes are, the greater the chance to access consumer memory becomes, and the more likely it becomes that brand information can be activated automatically (Fazio et al., 2000). For example, as people often use stereotypes as heuristics for evaluation (Aronson, Wilson, & Akert, 2004), the information based on product category perception is frequently used for the evaluation of the

brand (Fiske & Neuberger, 1990; Huber, Meyer, Vogel, Weihrauch, & Hamprecht, 2013). In addition, in order to measure the strength of association, often reaction to the combination of brand-attribute is measured; the stronger the link, the shorter the time taken to respond (Samu, Krishnan, & Smith, 1999). In particular, perceptual features such as the taste of food, scent of soap or colour of a brand logo are important brand attributes securely linked to the brand, as they are directly experienced whenever the brand is consumed. Thus, I propose that sensory aspects of a branded product, particularly sensory signature, possesses a strong associative link with brand information so that it functions as an effective brand cue to retrieve relevant brand meanings.

Information supporting this argument is now presented, framed as a discussion of whether a sensory signature can develop links with other brand nodes so as to be able to function as an effective brand cue.

3.1.1 What is a Brand Cue?

In everyday life, consumers are continuously exposed to various cues provided by firms via various communication channels aiming to help consumers recall information about their brands (e.g., Kim, Kim, & Marshall, 2016). Generally speaking, a cue refers to a piece of information that can help retrieve previously learned information about an object or signal its characteristics (Tulving & Psotka, 1971). This facilitative role of a cue in retrieving information is possible as it can be easily accessed in memory and activate information nodes (Keller, 1987; Tulving & Psotka, 1971). Consumers view a brand as “an array of cues”, such as brand name, price, packaging, and colour, and use them as a basis for evaluation of a branded product (e.g., product quality) (Olson & Jacoby, 1972, p. 167). According to the cue utilisation theory, brand cues can have predictive value, which is associated with how diagnostic or reliable the cue is in retrieving and signalling product features such as product attributes, benefits, attitude, or quality, and confidence value, which is the degree to which consumers feel confident in using a cue to evaluate the above product features. These values provide grounds to measure whether a brand cue can be an effective means to recall brand-related information. Commonly studied brand cues in consumer research include brand name (Erdem, Swait, & Valenzuela, 2006), product price (Rao & Monroe, 1989), advertising spending (Moorthy & Hawkins, 2005), warranties (Soberman, 2003), money-back guarantees (Moorthy & Srinivasan, 1995), retailer reputation (Purohit & Srivastava, 2001) and quality labels (Moussa & Touzani, 2008).

Brand name has been the most common (Cordell, 1997) and effective cue in various contexts of product evaluation requiring the access to brand memory, such as in resolving uncertainty about products (Dawar & Parker, 1994), or in assessing product quality (Dodds, Monroe, & Grewal, 1991; Maheswaran, Mackie, & Chaiken, 1992). In fact, brand name not only serves as a predictive cue diagnostic of product performance (Erdem & Swait, 1998; Keller, 1998; Smith & Park, 1992), but the brand name itself contains a chunk of information comprised of various brand associations (Richardson, Dick, & Jain, 1994). This associative nature of brand

name allows the information activated to spread via multiple links to other nodes linked to the former in brand memory, making the retrieval of the overall information easy (Keller, 1987). As a result, brand name stands out as something that can represent the brand, making it easier for consumers to recall and use brand-relevant information for the evaluation of branded product, even when the brand is introduced with other brands at the same time. Therefore, brand name has been the most widely and successfully used brand cue across various domains of research employing the transfer of brand meanings (e.g., Miller & Allen, 2012; Walchli, 2007; Washburn, Till, & Priluck, 2000). For example, brand extension strategy exploits the benefit from the predictive value of successful brand name to develop the equity of a new product (Janiszewski & Van Osselaer, 2000).

To summarise, a brand is comprised of information nodes, and the activation of one of the nodes can lead to the activation of other nodes. The extent to which the other nodes are activated depends on how strongly the nodes are associated. This is because as the links connecting the information nodes are stronger, the likelihood that the brand cue can access consumer memory and retrieve the information becomes higher. One way to examine whether the links are strong is to measure the reaction time taken by subjects to respond to the object-relevant association (e.g., brand name – brand attribute) combination. The faster the response to the combination, the stronger the link between them. Among many possible brand cues, because of its predictive value, brand name has been the most prominently used. The nature of brand names has contributed to its popularity as a brand cue in various branding contexts, particularly in the cobranding context, where transfer of brand meanings are inferred as a key for product evaluation. The next section focuses on why sensory signature may function as a brand cue that can be effectively used in a cobranding context.

3.1.2 Sensory Signature as Brand Cue

As a brand cue, sensory signature can function as effectively as the brand name, in sense that stimulation of the sensory signature activates the associated brand meanings. The reasons are three-fold. First, a sensory signature is a unique and representative feature of a brand. As consumers can easily recognise the brand from its sensory signature, when they are exposed to it the brand-relevant meanings are more likely to be easily activated compared to when one of the generic brand meanings is used as a cue. In other words, sensory signature is strongly associated with the brand so that it can effortlessly activate relevant brand meanings just from the mere exposure to it. Considering sensory signature as one of many brand information nodes but with brand representative quality, sensory signature also possesses strong associative links with overall brand meanings. According to Keller (1993), the strength of associations between brand cue and the outcomes depends on the amount of attention brand information received during the encoding phase and the nature, or the way, attention is given to the processing of that information when it is encoded (Keller, 1993). The uniqueness of a sensory signature, in terms of its ability to distinguish the brand from others brand cues, contributes to it receiving more attention when brand information is encoded. It is because an

object with distinguishing sensory information can be better encoded and remembered, and thus has enhanced accessibility to memory (Meyers-Levy & Tybout, 1989). Also, as people's earlier bodily experiences are the building blocks to understand abstract concepts (Williams, Huang, & Bargh, 2009), the way sensory signature is experienced contributes to create strong links between this sensory input and brand meanings.

Second, as a storehouse of brand information (Krishna, 2010), sensory signature itself is a source of overarching brand meanings which are connected to each other, and thus a variety of meanings can be easily retrieved via stimulation of the sensory signature. As cognitive thoughts are grounded in the same neural systems that govern sensation, perception and action (Barsalou, 1999, 2008), sensory input that is representative of a brand, such as a sensory signature, should be able to access brand memory and tap into the overarching brand information. Sensory brand information is stored in consumer memory along with other brand-related cognitive mental concepts. As sensory information and related cognitive concepts are stored together in memory, when brand experience is stimulated via sensory signature, all the corresponding brand attributes will also be activated (Barsalou et al., 2003). This is because the role as a retrieving cue is what makes brand name an effective brand cue (Keller, 1987), and a sensory signature possessing the same feature can be as effective as a brand name in retrieving comprehensive brand meanings.

Lastly, the capability of a sensory signature that can tap into implicit memory also contributes to the efficacy of sensory signature as an effective brand cue, as it can broaden the range of accessible brand meanings. Implicit memory refers to the type of memory that influences judgment without conscious awareness (Kyung, Thomas, & Krishna, 2017). Enhanced performance on cognitive tasks, such as a brand attribute judgment, is often a result of heightened ability to access implicit memory accumulated from prior experience of the event (Lee, 2002). Moreover, while product experience is mainly associated with perceptual features such as taste or scent of a product, the associations can encompass other meanings that have a semantic nature (Ackerman, Nocera, & Bargh, 2010; Barsalou, 2008). Thus, it is expected that perceptual experience of a cobranded product via sensory signature can activate both brand-related meanings and function as an effective means to communicate brand information.

While the efficacy of a cognitive brand cue such as brand name has been widely discussed, the investigation of whether brand-related sensory input can function as a brand cue has been scarce. More importantly, even those studies that have examined the capability of sensory input to activate certain brand information has been conducted at a generic, rudimentary level, so investigation was limited to retrieval of sensory-specific information, such as green colour and eco-friendliness, rather than the retrieval of overall brand meanings in the same way that a brand name can. For example, IJzerman and Koole (2011) showed that the feeling of a warmer temperature activates warmth-related concepts, and the feeling of cooler temperature activates cool concepts. Thus, this thesis examines the effect of sensory signature on brand evaluation, particularly the judgment of brand attributes, which has not existed so far. The flagship product research which has been conducted in the product domain hints at the

power that representative brand cue may have on the evaluation of a branded product. For example John and colleagues (1998) find that the most familiar and representative product (i.e., the flagship product) from a category influences consumer evaluation of the category as a whole. This is because flagship products not only have a well-developed network of information nodes, but also their links to the nodes are significantly stronger than similar links for other products within the same product category (John et al., 1998). As the flagship product contains similar characteristics of representativeness as a sensory signature, it is expected that the sensory signature might have similar effects on developing perceptions about the brand.

In summary, as sensory signature has a strong associative link with brand information, it can function as an unambiguous cue, like brand name, that can seize consumers' attention relatively easily, and influence their subsequent attitude or behaviour without the need for effortful memory processing.

3.1.3 The Effects of Brand Cues in a Cobranding Context

3.1.3.1 Effects of Multiple Brand Cues on Product Evaluation

Because of the nature of cobranding strategy, it has been quite common to see multiple brand cues, such as brand names of partner brands, appear on a cobranded product. The presentation of multiple brand cues influence not only whether and which brand-cue related information is retrieved more effectively, but also the way this information is processed to evaluate cobranded products. Regarding the role of brand cues as information retrieval cues, previous research has demonstrated somewhat divergent findings. Alba and Chattopadhyay (1986) found that when a set of brands were used as cues, the most salient single brand inhibited the recalling of other brands. Lindsey and Krishnan (2007) examined the effects of brand cues on target brand retrieval in a collaborative (vs. non-collaborative) setting. They found that double cueing (i.e., exposure to the cues from an outside source such as TV or radio and also hearing these cues spoken by other members in a group during retrieval) inhibited retrieval of other non-cue related brands in a collaborative setting. Such retrieval inhibition occurred because double cueing led to greater cue salience, which made that salient cue more accessible relative to other cues in the category. Evidence of facilitative effects of cueing has been also found. Nedungadi (1990) showed that a brand cue that could increase the accessibility of a target brand enhanced the likelihood of recalling other brands in the consideration set. Mixed effects of brand cue inhibition and facilitation were also found. Alba and Chattopadhyay (1985) suggested that the retrieval of non-target brands might be facilitated or inhibited depending on the knowledge level of consumers. While previous discussion has been at a brand level – whether a brand, which was represented with a brand name, inhibits or facilitates the retrieval of other brands in a consideration set – the same principle is still applicable at an attribute-retrieval level; that is, the competition or facilitation of different types of brand cue to retrieve brand-related meanings.

3.1.3.2 How would Multiple Brand Cues Contribute to Meaning Transfer?

In order to provide the theoretical basis for postulating the predictions regarding the role of multiple brand cues in transfer of brand meanings, two different theorizations have been applied, Information Integration Theory (Anderson, 1981) and indirect fluency effects (Oppenheimer, 2008; Shah & Oppenheimer, 2007).

Information Integration Theory (Anderson, 1971) is adapted to understand the ways in which multiple brand cues are utilised to retrieve brand meanings. Widely used across attitude and social judgment research, this theory postulates that the overall judgment of the target is based on an accumulation of several pieces of information. Individual informational items are represented by weight, which is the psychological importance of the information, and the scale value which is an evaluative judgment about the information (Anderson, 1971, p. 172). An example of the weight is source credibility, which influences the degree of acceptance of individual information item. As brand cue itself is an individual informational item, the informational value of co-presence of multiple brand cues can be also integrated to produce overall effects. The basic algebraic expression of this information integration approach can be written as

$$R = w_0s_0 + \sum_{i=1} w_i s_i$$

where R is the overall response from all relevant informational items or stimuli, w_i and s_i are the weight and the scale value of i th stimulus, and w_0 and s_0 are the weight and scale value of an initial opinion.

More applicable to this thesis, empirical evidence exists demonstrating application of information integration theory to explain successful ingredient branding strategy, for instance Intel-Inside or Gore-Tex. According to Information Integration Theory, previous evaluation toward the host brand and ingredient brand constitute multiple sources of information and are evaluated separately and then integrated. The awareness and expectation of a high-performance brand ingredient leads to favourable attitudes toward the ingredient brand, and such a favourable evaluation is integrated with the existing attitude toward the host brand (Geylani, Inman, & Hofstede, 2008). Thus, the theory provides the basis to compare and assess the way in which different types of brand cues are evaluated and integrated. In order to understand which brand cue would be more effective in retrieving brand-related meanings by applying Information Integration Theory, it is critically important to understand the factors influencing the weight of each brand cue. Indirect fluency effect answers this question.

While Information Integration Theory suggests that people utilise available cue information to make judgment, it is still unclear how the weight of each cue is determined. According to Shah and Oppenheimer (2007) fluency, which refers to the subjective feeling of ease or difficulty in processing information, might affect the judgment as a mechanism in cue weighting. In other words, as people put more weight on cues that are easier to access or to process, fluent cues are more heavily weighted than disfluent cues (Shah & Oppenheimer,

2007; Shah & Oppenheimer, 2008), and thus fluency is indirectly used as a basis for cue weighting. On the contrary, fluency itself can be directly used as a cue itself, by attributing it to the appropriate source (Shah & Oppenheimer, 2007), and this has been the way fluency was adopted in the extant consumer research (e.g., Labroo, Dhar, & Schwarz, 2008; Shapiro, MacInnis, & Heckler, 1997). For example, individuals evaluate stimuli more favourably when the information is written in a font that is easy to read (Novemsky, Dhar, Schwarz, & Simonson, 2007). In their first study, Shah and Oppenheimer (2007) empirically confirmed indirect fluency effects by demonstrating that participants reading a negative consumer review about MP3 presented in the disfluent condition (i.e., printed in grey, italicised Monotype Corsiva font) rated its price higher than the one presented in the fluent condition (i.e., printed in black, Times New Roman font). This is because the disfluency made the information in the consumer review less accessible, and thus less weight is placed on the negative consumer review. If the fluency were used as a cue, as direct fluency effect assumes, the opposite would have happened. It is expected that as sensory signature can access consumer memory as brand name without much effort, it can receive as much weight as explicit brand name and exert effective influence in meaning transfer.

3.2 Proposed Perspectives on the Role of Multiple Brand Cues

Information integration theory (Anderson, 1971) suggests different types of integration model. First, an adding model is as simple as its name implies; the total effect of informational items is obtained from addition of information, and no constraint is imposed on how importantly the informational item is perceived to people. On the other hand, an averaging model assumes that importance of the informational item is adjusted by the importance of added information as the model requires the total sum of the weight of each informational item. Development of the following perspectives are based on these two basic modes with some deviations.

3.2.1 Perspective 1: Adding (Weighted Average) Model 1

According to the strict adding model, the brand cues (i.e., informational items) are independent of each other and the weights attached to these brand cues do not compete each other. Assuming two different information sources, brand name and sensory signature, the meaning transfer effects of two different brand cues on a cobranded product is represented

$$MT = W_0S_0 + W_{\text{sensory signature}} S_{\text{sensory signature}} + W_{\text{brand name}} S_{\text{brand name}}$$

where MT is the meaning transfer effects, $W_{\text{brand name}}$ and $W_{\text{sensory signature}}$ is the weight (i.e., level of belief of the brand cue associated with brand name and sensory signature), and $S_{\text{brand name}}$ and $S_{\text{sensory signature}}$ are the scale values related to the brand cues. Meaning transfer effects include implicit and explicit judgment of brand attributes which are retrieved from a cobranded product via brand cue(s), and overall attitude to a cobranded product. Finally, w_0s_0 is the initial opinion about a cobranded product which will be assumed equal to zero, as is conventionally accepted in an additive model. This is because this assumption does not change the conclusion from an

overall response based on multiple informational items (Anderson, 1971). Thus, brand-related information gathered from each brand cue will be added in absolute value when two brand cues are presented together (See Figure 3.1).

Considering the sensory characteristics of brand cues, if brand name is perceived as a visual and not a verbal cue, it can be postulated that the information obtained from two different modalities will make the transfer of meanings more efficient than when only single modality brand cue is used. Previous research suggests that stimuli share attentional resources if both are processed within the same sensory modality (Arrighi, Lunardi, & Burr, 2011; Kaschak, Zwaan, Aveyard, & Yaxley, 2006). However, attentional resources seem to be independent when stimuli are processed in different modalities (Alais, Morrone, & Burr, 2006; Duncan, Martens, & Ward, 1997). So, following Cognitive Load Theory (Sweller, 1988) which proposes that stimuli presented in the same modality reduces capacities available for the processing of the stimuli, it can be assumed that presenting brands in different modalities will allow more working memory capacity to process the transfer of brand meanings. For example, Blask and colleagues (2012) found stronger evaluative conditioning effects in cross-modal condition compared to the unimodal condition, thus supporting the assumption that there are independent attentional resources for the processing of stimuli from different sensory modalities.

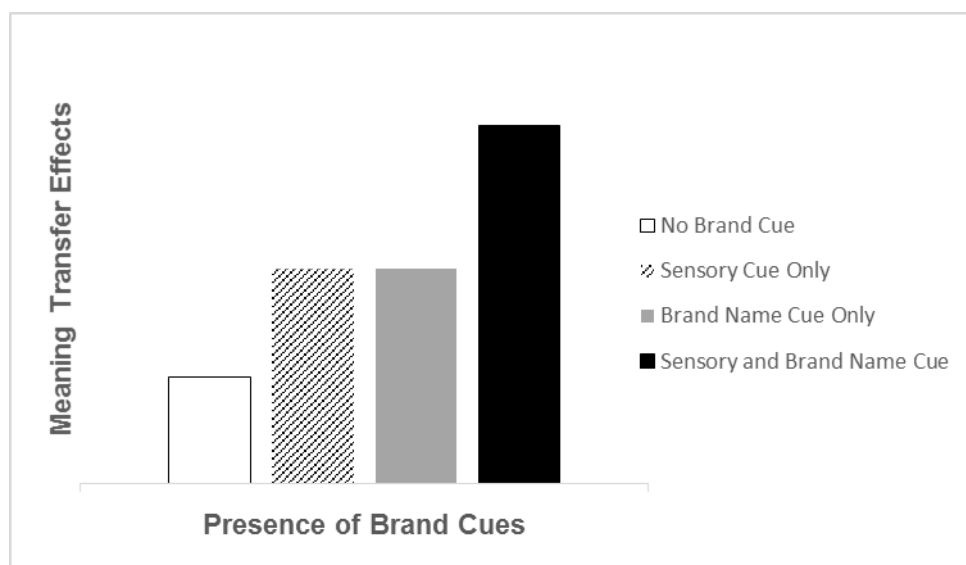


Figure 3.1. Model 1: Adding model

In addition, it is assumed that the effects of brand name or sensory signature alone on meanings transfer are indifferent, as both are unique to the brand and equally fluently processed. Thus, it is proposed that:

P1: Total meaning transfer effects will be the addition of effects from sensory signature and brand name when they are used as cues.

3.2.2 Perspective 2: Threshold model (Model 2)

This second perspective can be considered as the extension of an adding model but with a threshold for brand cue(s) to transfer brand meanings. This threshold is related to different factors (e.g., familiarity with a brand cue, perceived intensity of a brand cue if it is based on sensory perception, liking of a brand cue) influencing the degree of conviction for brand cue(s) (Bettman, 1974). That is, consumers will have some degree of certainty about the representativeness of cue(s) in relation to the brand, so that they can develop a link between the cue(s) and brand meanings. Thus, in order for meaning transfer effects to occur, the degree of conviction should be above the threshold value.

There might be a case that while a consumer has some knowledge about the brand, the informative value of the brand cue(s) might not be sufficient to convince a consumer to believe that a cobranded product is associated with the target brand meanings (See Figure 3.2). For example, the sensory signature might not be perceived prevalent in relation to a brand because it may not be distinctive enough to become effective. Or, while brand name is perceived as one of the most effective brand cues for product evaluation, the possibility that it may not positively contribute to the evaluation still exists. Consumers may think the brand alliance between partner brands is not so logical and become sceptical of the product. Thus, it is proposed that:

P2: Neither presence of sensory signature cue nor brand name cue is sufficient to transfer brand meanings. It is only when both cues are used together that meaning transfer can occur.

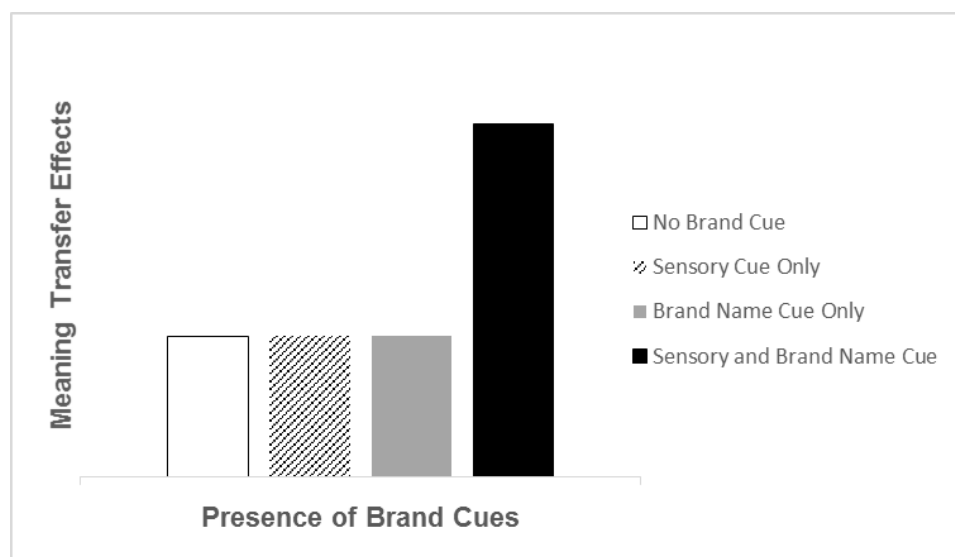


Figure 3.2. Model 2: Threshold model

3.2.3 Perspective 3: Equal Weight Averaging Model (Model 3)

Unlike the threshold model above, an averaging model assumes that what is critical for integration of informational items are their perceived importance (i.e., weight of information), which must be summed to one (Anderson, 1971). An equal weight averaging model assumes

that the importance, or the weight, of each information stimulus is the same, so that the effect of brand name and sensory signature on meaning transfer is also the same. This assumption of equal weight is applicable when these two different types of brand cues are presented together. As the weight of a cue is influenced by the fluency of cue processing (i.e., indirect fluency effects), Perspective 3 assumes that both sensory signature and brand name are equally effective (i.e., fluent) in retrieving brand-related meanings no matter whether they are presented alone or presented together (See Figure 3.3). Thus, it is proposed that:

P3: Meaning transfer effects will be indifferent no matter what types of brand cue is used or how many cues are presented on a cobranded product

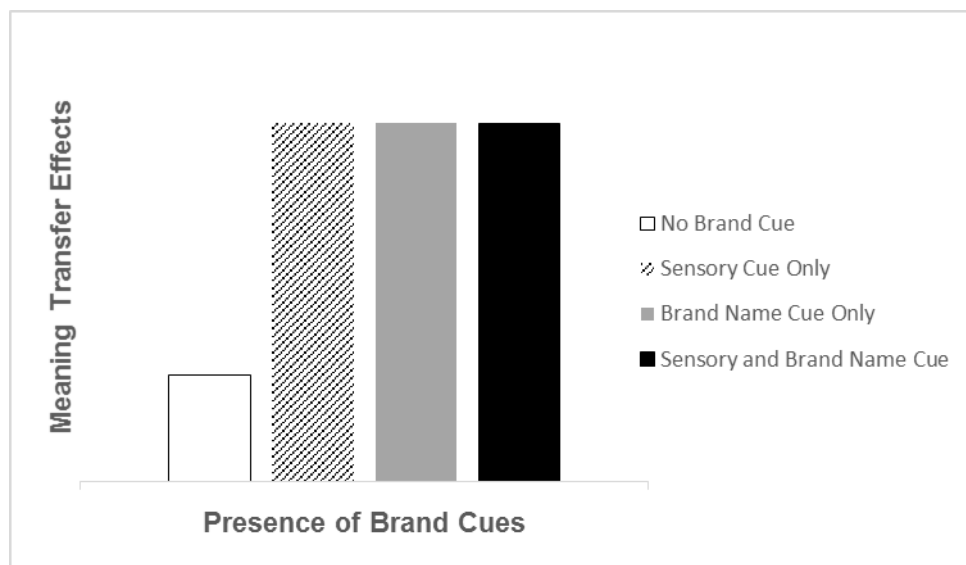


Figure 3.3. Model 3: Equal weight average model

3.2.4 Perspective 4: Single Cue Dominance Model (Model 4)

Single cue dominance model is another form of averaging model proposed in this thesis, assuming the interactive effect of brand cue, or information stimulus. Unlike the equal weight model above (Perspective 3), a single cue dominance model (Perspective 4) assumes that as each brand cue may have a different weight, the perceived importance of the cue determines which brand cue will have a prevalent influence on the transfer of brand meanings over any other. In addition, whereas an adding model (Perspective 1) assumes that brand cues contribute to transfer of brand meanings independently when they are presented together, a single cue dominance model predicts that the brand cue that is most strongly linked to the brand may exert a more significant effect on meaning transfer. As consumers base their decision on different products using accessibility and comprehensibility of the relevant information, the diagnosticity of the brand cue determines how influential the brand cue is (Hoegg & Alba, 2007; Lynch, 2006).

3.2.4.1 Brand name cue dominance model (Model 4-1)

The brand name cue dominance model assumes that brand name is more saliently received than a sensory signature cue so that the former can transfer brand meanings as effectively as when two different types of brand cues are presented together. In other words, this perspective assumes that brand name is more fluently processed than sensory signature cue, so that the effect of brand name on meaning transfer effects dominate the influence of sensory cues. When compared to a sensory cue, a brand name cue is a more immediate signal that does not require much attentional resource to process. On the other hand, even though a sensory cue has a unique and discriminant nature, its implicit nature may render the transfer process less efficient compared to when an explicit brand name cue is used. In other words, the processing of sensory cue alone is likely to require additional attentional capacity, making the brand meaning retrieving and transferring process less fluent. For example, people might become aware of a scent but not be sure of exactly it smells like, and thus discount the information derived from this cue. However, the presence of both brand name and sensory cue can produce synergistic effects by helping to resolve the uncertainty or disfluency of information associated with only a sensory signature cue (See Figure 3.4). Thus, it is proposed that;

P4-1: A sensory signature cue is not as effective as a brand name cue in transferring brand meanings, while brand name cue alone can be as effective as when two different types of brand cues are presented together.

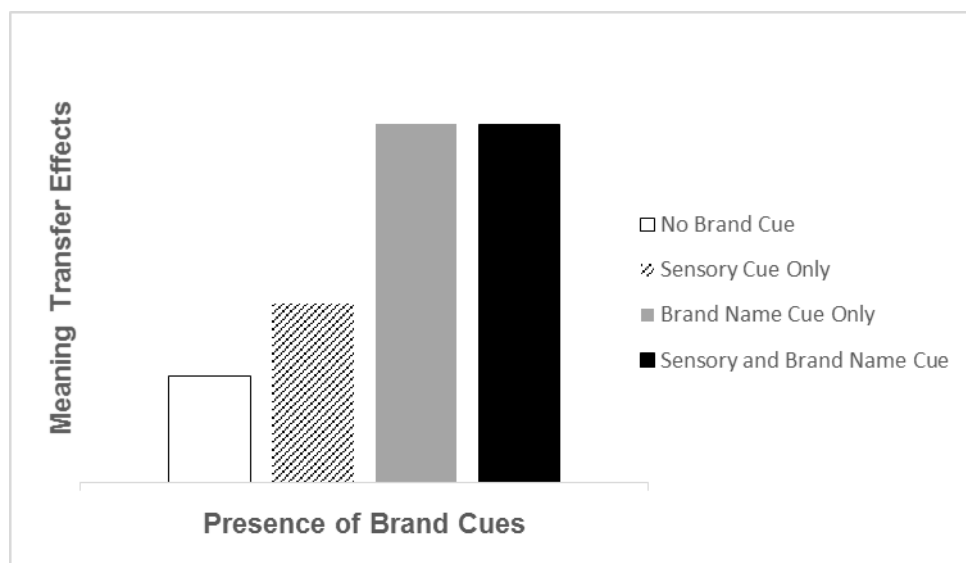


Figure 3.4. Model 4-1: Brand name cue dominance model

3.2.4.2 Sensory cue dominance model (Model 4-2)

This model assumes that meaning transfer via sensory signature can be efficient as meaning related to brands that can be activated via physical experience with little or no attention. Because this implicit brand cue does not depend on whether individuals are aware of the presence of sensory signature cue that transfer meanings, it could be more fluently processed than an explicit brand cue such as brand name. There are a number of studies which

demonstrate that sensory experiences activate related concepts outside of people's conscious awareness (e.g., Kim, 2017; Williams & Bargh, 2008). For example, participants who held a hot cup judged an ambiguously described target person to be higher on traits implying warmth, generosity and caring, than did participants who held the cold cup (Williams & Bargh, 2008) (See Figure 3.5). Thus, it is proposed that;

P4-2: A brand name cue is not as effective as a sensory signature cue in transferring brand meanings, while a sensory signature cue alone can be as effective as when two different types of brand cues are presented together.

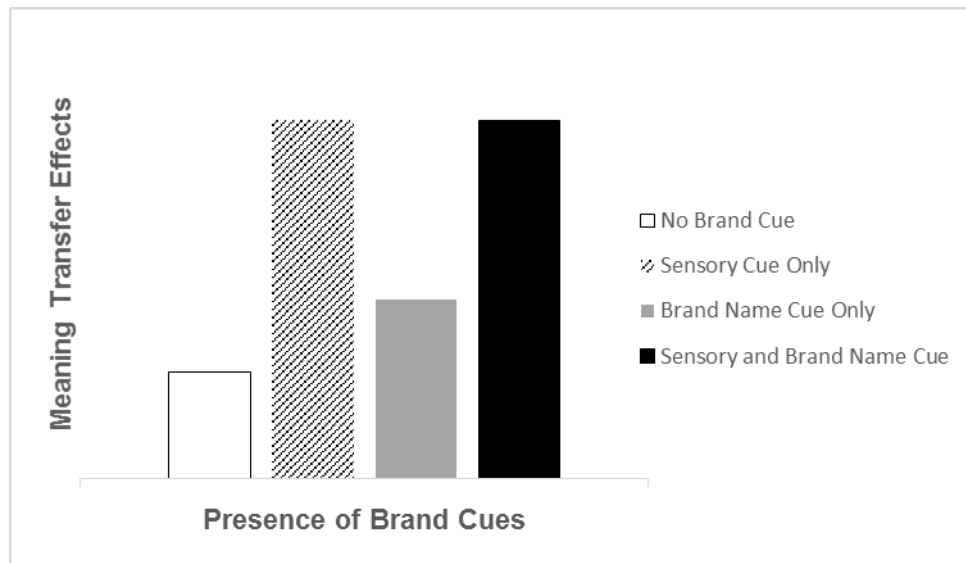


Figure 3.5. Model 4-2: Sensory cue dominance model

3.2.5 Perspective 5: Cue Inhibition Model (Model 5)

Unlike most of the models discussed above, the cue inhibition model assume that the presence of two different cues inhibits the processing of information, no matter what their type of presentations are or whether separate modality is used to process them. One possible explanation is that the combination of two different cues incurs a switching cost to process the information delivered via different modalities (Gozli, Chasteen, & Pratt, 2013) (See Figure 3.6). Thus, it is proposed that;

P5: While a sensory signature cue and a brand name cue are equally effective in transferring brand meanings in isolation, the combination of them are less effective than single brand cue.

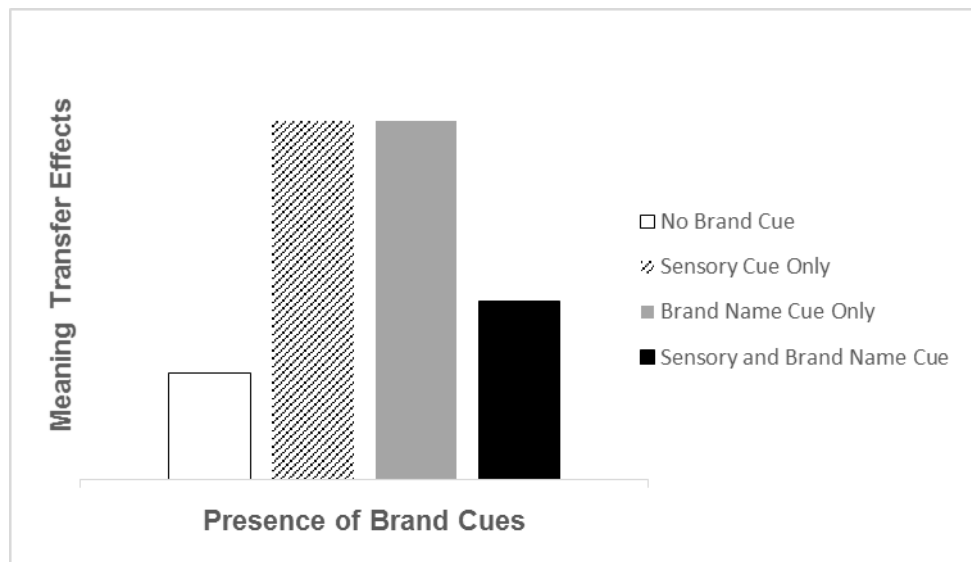


Figure 3.6. Model 5: Cue Inhibition model

3.3 Conclusion

The benefit and implication of sensory signature as an effective brand cue have not been discussed before, nor has sensory signature's efficacy on product evaluation been compared with other brand cues. Thus, the overall objective of this research is to develop and test a conceptual framework to understand whether a sensory signature cue can be as effective as brand name, and how consumers combine and process these two distinctive types of cue in transferring brand meanings in a cobranding context. Thus, why and how sensory signature can function as an effective brand cue that is comparable to brand name is discussed (Section 3.1) and the different meaning transfer effects output expected from use of multiple brand cues are proposed (Section 3.2). The next chapter discusses the methodology adopted in this thesis.

Chapter 4 RESEARCH METHODOLOGY

The previous chapter discussed why a sensory signature can function as an effective brand cue that can transfer brand meanings as effectively as brand name in a cobranding context. Furthermore, based on this argument assuming the efficacy of sensory signature, several different perspectives are proposed. There are five different propositions about how sensory signature and brand name interplay in the transfer of brand meanings in a cobranding context.

This section presents the research methodology to be used throughout the main studies. Specifically, this section outlines the guiding research paradigm (Section 4.1), explains why quantitative methodology is appropriate for this work (Section 4.2), and details the research design and justification of the choice of the design (Section 4.3). Section 4.4 discusses what implicit and explicit measures are and why they are used in this thesis, Section 4.5 proposes the conceptual framework, and Section 4.6 describes the samples used in the studies. Section 4.7 details the experimental materials prepared for the studies whilst the experimental procedure used is outlined in Section 4.8.

4.1 Philosophical Approach

In marketing, research is guided by a philosophical view that helps researchers make decisions about methodological issues, such as which research design to use (Creswell, 2008). The researchers' epistemological understanding of the world is revealed not only in their research questions and methods but also in their interpretation of research findings (Feilzer, 2010). Thus, explicitly stating a philosophical background is necessary to underpin researchers' choices of ontology, epistemology and methodology (Biedenbach & Müller, 2011).

Within the marketing discipline, post-positivism is a highly-adopted philosophy due to the belief that marketing research should be able to provide "causal laws" to explain consumer behaviour and marketing phenomena (Malhotra, Hall, Shaw, & Oppenheim, 2006). Given that the purpose of this thesis is to suggest new predictions based on the existing theories of consumer behaviour, a post-positivist perspective is assumed. The post-positivist paradigm assumes that reality is only imperfectly captured and understood (Lincoln & Guba, 2000). Marketing researchers within the post-positivist paradigm use quantitative data and quantitative methods, such as experiments and surveys, in order to achieve objectivity and test research questions and hypotheses (Newman, 2006). Within a post-positivist paradigm, the epistemology of this research is modified objectivist. Within an objectivist epistemology, this thesis aims to critically evaluate the findings of prior studies in an attempt to move closer to genuine knowledge of an existing phenomenon.

4.2 Research Method

As the research paradigm steers how research should be conducted, choosing an approach or methodology will reflect the philosophical assumptions of a chosen perspective (Collis & Hussey, 2009). Post-positivist researchers typically use quantitative methodologies, which are “research techniques that seek to quantify data and typically, apply some form of statistical analysis” (Malhotra et al., 2006, p. 175). Their choice of quantitative methodology is based on the belief that the complexity of social phenomena can be measured (Collis & Hussey, 2009). Given that this study takes a post-positivist perspective, quantitative methodologies will be used.

In quantitative research, understanding the respondent’s interaction with the research process is crucial to deciding research design, because respondents are the fundamental data source in most marketing research (Malhotra et al., 2006). There are two major quantitative approaches: descriptive and causal research (Malhotra et al., 2006; Zikmund, Ward, Lowe, Winzar, & Babin, 2011). Descriptive research is “research designed to describe the characteristics of a population or phenomenon” (Zikmund et al., 2011, p. 23). Such research typically employs quantitative measurement and statistical analysis (Sarantakos, 1998). Alternately, causal research is “research conducted to identify cause-and-effect relationships among variables” (Zikmund et al., 2011, p. 25). Causal research is different from descriptive research because it makes use of experiment, which is a research method that investigates the effect of independent (causal) variables on dependent variables while controlling for other covariates (Malhotra et al., 2006).

Given that the objective of this thesis is to examine the extent of difference regarding meaning transfer when sensory cues and brand name cues are used, a quantitative method employing statistical analysis is considered suitable for the investigation. Further, this thesis undertakes causal research using an experimental design. According to Churchill and Iacobucci (2005, p. 128) experimentation is “a scientific investigation in which an investigator manipulates and controls one or more independent variables and observes the dependent variables.” By probing causal relations between manipulated independent variables and measured outcomes, an experimental design provides more persuasive support for causality than traditional exploratory or descriptive research designs (Churchill & Iacobucci, 2005). Appropriateness of choosing experimental design for this thesis is explained in more detail in the following section.

4.3 Research Design and Justification

In general, scientific investigation in the social sciences, including marketing, aims to reveal certain conditions or situations that cause certain behaviour of people (Spector, 1993). One way to distinguish research designs that answer questions regarding behaviour of people is to divide them into experimental and non-experimental (Spector, 1993). The difference between the two designs depends on the degree to which the researcher controls the study; in experimental design, the researcher directly controls participants and condition(s) through

treatment or manipulation, whereas in non-experimental design researcher may specify the conditions but participants are not assigned to different conditions (Hair, Black, Babin, & Anderson, 2010; Spector, 1993). Such a lack of direct manipulation in non-experimental design can prohibit researchers to accurately observe and interpret the causal relationship among variables because they cannot control extraneous influences in study settings (Spector, 1993; Tharenou, Donohue, & Cooper, 2007; Vogt, 2011). Since the major objective of this study is to develop an understanding of how differently manipulated brand cues, independent variables, affect consumer perception toward a cobranded product, the dependent variable, the choice of an experimental design for this study is appropriate. Moreover, I adopt a randomised experiment rather than a quasi-experiment, as the former reduces the threat of alternative explanation on the causal relationship (i.e., a confound) and thus ensures greater validity of outcomes obtained from manipulation (Shadish, Cook, & Campbell, 2002). Thus, participants will be randomly assigned to different experimental conditions randomly. The next section discusses the process implemented to validate the appropriateness of the chosen brands. Their sensory nature is explained in the discussion of experimental material in this chapter.

4.4 Use of Implicit and Explicit Measure

In order to fully understand how people behave, it is necessary to obtain knowledge on the psychological attributes of an individual, such as attitudes, stereotypes, beliefs, personality characteristics, and others (De Houwer, Teige-Mocigemba, Spruyt, & Moors, 2009). Traditionally, self-report measures have been one of the most important and frequently used research tools to measure psychological attributes (e.g., Dempsey & Mitchell, 2010; Ewing, Allen, & Kardes, 2008; Gawronski & Bodenhausen, 2006). These self-report measures, however, often suffer distortion, as participants are sometimes unwilling or unable to provide accurate report about their psychological attributes due to factors such as desirability bias (e.g., Fazio & Olson, 2003; Gawronski & De Houwer, 2012) or misinterpretation of the researchers' intention as expressed in questionnaire items (Han, Czellar, Olson, & Fazio, 2010). Recently, alternative measurement instruments that are less susceptible to respondents' ability to control their responses for assessment of psychological attributes have been popularly used (De Houwer et al., 2009; Gawronski & De Houwer, 2012). These newly-developed measurement instruments, which are not dependent on subjective assessment of psychological attributes, are referred to as implicit measures, whereas the traditional self-report measures are described as explicit measures (Gawronski & De Houwer, 2012)

To examine the explicit and implicit transfer of meanings in a cobranding context, the experiments conducted here employ both traditional self-report, or explicit, measures, as well as reaction time measurement, an implicit measure. As a reaction time measure can tap into subconscious associations (Calvert, Fulcher, Fulcher, Foster, & Rose, 2014), it is used to measure whether and which brand meanings implicitly transfer to a cobranded product.

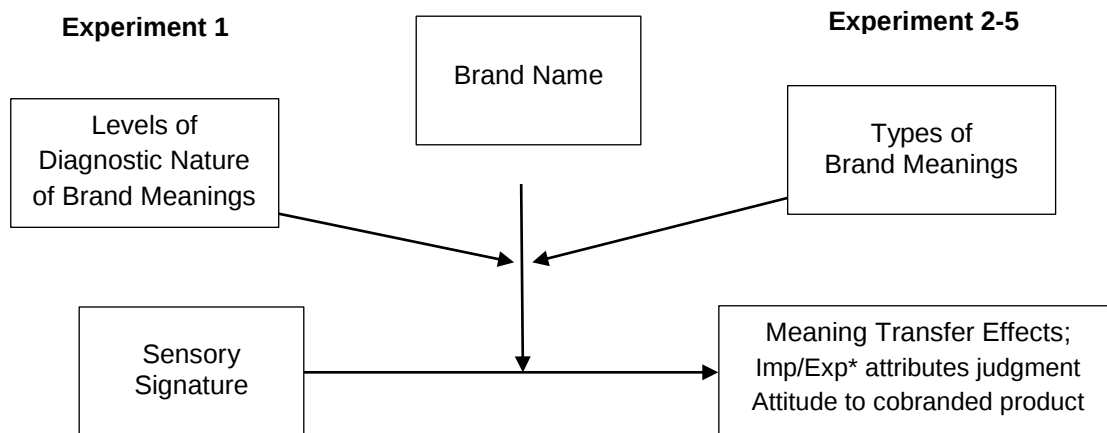
Clear identification of what implicit and explicit means in this thesis is required, as researchers have used those terminologies differently in their research (Dempsey & Mitchell, 2010; Gawronski & De Houwer, 2012). Gawronski and colleague (2012) have specified the three instances in which these terms are used differently. The distinctions are based on whether the purpose of the use of the terms “implicit” and “explicit” is to describe discrete aspects of measurement procedures depending on participants’ awareness on what is being measured (Petty, Fazio, & Briñol, 2009), or to describe the nature of psychological attributes as either unconscious or conscious representation of memory in minds (Greenwald & Banaji, 1995). Lastly, classification of the terms is based on whether the influence of the psychological attributes to be measured (i.e., a manipulated variable such as personality trait of unconditioned stimulus brand) on the participants’ response (i.e., a measurement outcome of the psychological attributes to be measured) is automatic or not (Gawronski & De Houwer, 2012).

For the purpose of implicit measurement of psychological attribute such as brand meaning, it is conceptually more appropriate to classify the terms based on the process by which a psychological attribute influences measurement outcome (De Houwer et al., 2009; Gawronski & De Houwer, 2012; Haines & Sumner, 2013). In other words, measurement outcomes (i.e., transferred brand meanings) are implicit when the process influencing measurement outcome is “unintentional, resource-independent, unconscious, or uncontrollable,” whereas measurement outcomes are explicit if the process is “intentional, resource-dependent, conscious, or controllable” (Gawronski & Bodenhausen, 2012, p. 1). The psychological attribute that is of interest in this thesis is consumers’ explicit and implicit meaning transfer derived from the use of sensory signature. The effects of sensory signature as a brand cue, on implicit and explicit transfer effects, is measured using explicit and implicit measures.

4.5 Proposed Conceptual Framework of Effects of Brand Cues

The review of literature in the previous chapter suggests that theories of cognitive psychology and Grounded Cognition can be meaningfully combined and extended to create a better understanding on the efficacy of sensory signature as a brand cue, when it is presented alone or in combination with brand name on cobranded product. Thus, I propose a conceptual framework (See Figure 4.1) incorporating the effect of different types of brand cue, sensory signature and brand name, different levels of diagnostic nature of brand meanings (i.e., the extent to which a brand meaning is descriptive of host brand), and different types of brand meaning (i.e., perceptual and semantic brand meanings). This framework assumes that different types of brand cues influence transfer of brand meanings implicitly and/or explicitly. Thus, meaning transfer effects are measured by attributes judgement using both implicit and explicit measurements (Experiments 1 to 2) and attitude to cobranded product (Experiments 3 to 5). Attribute judgement refers to the decision on whether a product/company possesses certain product imagery, such as softness, derived from the associations triggered from product/company-related cue(s) (e.g., powdery scent of Johnson’s Baby) (Jiang, Gorn, Galli, &

Chattopadhyay, 2016). Finally, the brand with sensory signature is specified as ingredient brand, referring to one of cobranding partner brands that provides its unique sensory feature as a key component of a new cobranded product.



Note: Imp/Exp* denotes implicit and explicit

Figure 4.1. A conceptual framework of brand cue effects on meanings transfer

More specifically, Experiment 1 investigates whether the brand meaning specific to the ingredient brand (i.e., ingredient brand-specific vs. overlapping between ingredient brand and cobranded product vs. cobranded product relevant) moderates the transfer effect to a cobranded product. In Experiments 2 – 5, I examine whether brand meanings categorised based on their perceptual nature (i.e., perceptual meanings vs. semantic meanings) will moderate the same effect.

4.6 Sample

4.6.1 Sampling Method

The main purpose of sampling is not limited to producing more accurate generalisation about a population, but to finding a more efficient way of yielding accurate information (Singleton & Straits, 2005). Non-probability sampling, particularly convenience sampling method is used. Convenience samples are obtained when the researcher can complete a large number of case selections easily, quickly and inexpensively (Hair et al., 2010).

An undergraduate university student sample was selected as the target population of interest on the basis that they are one of the most homogenous segments of consumers (Baek, Kim, & Yu, 2010) and also that they comprised the sample in similar studies previously conducted using indirect measures (e.g., Dempsey & Mitchell, 2010; Gawronski, Bodenhausen, & Becker, 2007; Gibson, 2008; Perkins & Forehand, 2012). Although the sample was not chosen at random and thus is not broadly generalisable, experimental manipulations were

randomly assigned to each respondent to increase the internal validity of the experiment (Judd, Smith, & Kidder, 1991).

4.6.2 Sample Size

In order to achieve appropriate statistical power and validity of the findings, it is important to obtain an adequate sample size (Hair et al., 2010). The probability of treatment effect which actually exists (i.e., statistical power) is greatly influenced by the significance level (α), the effect size (i.e., the magnitude of the difference in the outcome between control and treatment condition), and the sample size (Beck, 2013). G*Power 3 is a statistical power analysis software that can assess five different types of power analyses (i.e., *a priori*, compromise, *post hoc*, criterion and sensitivity power analysis) and calculate estimated sample size (Faul, Erdfelder, Lang, & Buchner, 2007). In *a priori* power analyses, sample size is computed for a given desired effect size, the significance level (i.e., denoted as α which is most widely accepted minimum value of .05 in modern statistics), and the desired power value (i.e., denoted as $1 - \beta$ which is conventionally set at .80). With the significance level and the desired power value set at $\alpha = .05$ and $1 - \beta = .80$ respectively, the selected effect size determines sample size. While the effect size can be adjusted by the researcher, the standardised effect size classified as small ($f = .10$), medium ($f = .25$) and large ($f = .40$) by Cohen (1988) can usefully be used as thresholds.

To determine the appropriate sample size, *a priori* power analysis was conducted using G*Power 3 software. It was estimated that a desired minimum sample size required is 128 to have adequate power ($1 - \beta > .80$) with medium effect size ($f = .30$) incorporating a significance level at .05 (Faul et al., 2007). Even though large effect size was not assumed for the determination of sample size, medium effect size can be considered conservative enough. Thus, it is used quite frequently across various research disciplines and contexts. In addition, post-hoc analyses were conducted using actual effect size to make sure that the sample size was appropriate. The actual number of participants recruited for Study 1 was 134 (Female = 65.0%) and Study 2 was 176 (Female = 65.3%).

4.7 Experimental Material

This section provides information regarding how the Johnson's Baby scent (Section 3.7.1) and the taste of Red Bull (Section 3.7.2) were selected as sensory signatures to be used in this thesis.

4.7.1 Brand with Signature Scent

4.7.1.1 Selection of Johnson's Baby

Johnson's Baby was selected as a target brand as it has been known for the memorable and unique powdery scent that serves well as a sensory signature. In order to ensure that the scent from Johnson's baby has such a nature, it was necessary to compare the

scent with the scent from other brands within a similar product category. Thus, in addition to Johnson's Baby, four more Hand and Body product brands (i.e., Nivea, Vaseline, Dove and Little Genie) were chosen. According to a recent Nielson Market Information Digest Report, the top 4 selling brands for Hand and Body Products (excluding baby products) in New Zealand between 2012 and 31 July 2014 were Nivea, Vaseline, Aveeno, and Dove (Roy Morgan, 2014). Among those four brands, Nivea, Vaseline, and Dove were chosen. Aveeno was excluded because the brand has its own baby product line and is under the same parent brand, Johnson & Johnson, as Johnson's Baby. Little Genie was selected to compare whether Johnson's Baby has a distinguishable scent from another baby product.

Among different Hand and Body product categories, a body lotion was chosen because Johnson's Baby has been best known for its signature powdery scent of baby lotion, and it is the category that all five brands have in common. Moreover, among hand and body products, the role of scent is particularly important and relevant for product evaluation of body lotion. Five different body lotions were prepared in a small, white plastic container with each of them labelled from A to E on the top of the container. As Johnson's Baby lotion is pink, a red food colouring was used to tint the other body lotions to look as similar as possible.

4.7.1.2 Participants, Procedure and Scales

Nine students enrolled in a Masters' program at AUT university (Female = 55.6%, M_{age} = 23.6) participated in this pre-test as part of in-class activities. Subjects were told that the purpose of the survey is to learn consumer opinion about different body lotion products available in the market. Each subject was seated at a separate station with all five samples of body lotion prepared on the desk in front of them, and was instructed to smell each sample and answer the survey questions.

Subjects were instructed to pick up the container and sniff the lotion about 10 cm from the nose (Lwin, Morrin, & Krishna, 2010). They were also permitted to smell the body lotion as many times as they liked while answering the questions (Lwin et al., 2010). They had to smell coffee grounds and have a sip of water between consecutive samples to refresh and cleanse their nasal palate. The use of coffee beans to prevent nasal receptors from becoming less sensitive and less able to distinguish one scent to the next between fragrance testing has been widely used in the fragrance industry (Krishna et al., 2010).

For each sample, subjects were first asked to guess and write down the brand name of the body lotion they just smelled. They were then asked to evaluate the scent on two items using a 9-point scale (1 = very unpleasant / do not like at all, 9 = very pleasant / like a lot) and rate the familiarity of the scent on one item using a 9-point scale (1 = not at all familiar, 9 = very familiar). In addition, they were asked to rate how confident they are with their guesses of the brand name for each sample on a scale of 0 to 100%.

4.7.1.3 Results

There is no significant difference among liking of the scents of the body lotions ($M_{\text{Johnson's Baby}} = 6.00$ vs. $M_{\text{Dove}} = 7.94$ vs. $M_{\text{Nivea}} = 7.61$ vs. $M_{\text{Vaseline}} = 6.67$ vs. $M_{\text{Little Genie}} = 7.89$, $F(4, 32) = 2.00$; $p = .12$). In terms of the familiarity of the scents, again, no significant differences are found ($M_{\text{Johnson's Baby}} = 7.43$ vs. $M_{\text{Dove}} = 6.00$ vs. $M_{\text{Nivea}} = 7.14$ vs. $M_{\text{Vaseline}} = 7.57$ vs. $M_{\text{Little Genie}} = 6.71$, $F(4, 24) = 1.25$; $p = .32$, $\eta^2 = .17$). Although no significant differences exist in terms of the familiarity of the scents, four subjects (44.44%) could correctly identify Johnson's Baby scent with an average 58.5% confidence with their guesses of the brand name. These figures are higher than the number of participants who were accurate with the guesses of other brand names from the scents. Three people (33.33%) recognised Nivea from the scent and the confidence with the guess was comparatively lower (33.33%) than that from Johnson's Baby. Dove and Vaseline were correctly identified twice each (22.22%) but the confidence with the guess of the brand name was lower (20% for Dove and 27.5% for Vaseline). No one could recognise Little Genie from its scent. Thus, as expected, the scent of Johnson's Baby is familiar and distinguishable enough from other body lotion scents, and thus Johnson's Baby was selected as a brand with the signature scent to be used in one of main experiments of this thesis.

4.7.2 Brand with Signature Taste

4.7.2.1 Selection of Red Bull

Again, it was first necessary to ensure that Red Bull has a signature taste that is memorable and unique to the brand, so that consumers can distinguish Red Bull from competing brands. Three carbonated drinks brands (i.e., Sprite, L&P, and Mountain Dew) were chosen, as they have a similar taste and mouthfeel to Red Bull. "V" was also selected as it is an energy drink brand similar to Red Bull.

4.7.2.2 Participants, Procedure and Scales

Subjects were told that the purpose of this survey is to learn consumer opinion about different carbonated drinks available in a supermarket. Participants were grouped into either threes or fours, and were seated at a separate station. Each participant was given five different white plastic cups with the labelled either A to E. The cup and straw were covered with aluminium foil so that participants could not smell or see the colour of the drinks. The subjects were instructed to taste each sample one at a time, using a straw prepared for each drink, and then answer the survey questions. Between tasting, subjects were asked to have a sip of water to cleanse their mouth.

For each sample, subjects were asked to write down the brand name of the carbonated drink brand they just tasted, and were also asked to rate the familiarity of the taste on a single

item using a 9-point scale (1 = not at all familiar, 9 = very familiar) and evaluate the taste of the stimulus on two items using a 9-point scale (1 = very unpleasant / do not like at all, 9 = very pleasant / like a lot). In addition, they were asked to rate how confident they are with their guesses of the brand name for each sample on a scale of 0 to 100%.

4.7.2.3 Results

Eleven undergraduate students from AUT university (Female = 63.6%, $M_{age} = 20.4$), participated in this pre-test as part of their in-class activities. There were no significant differences among attitude toward the tastes of carbonated drinks ($M_{Red\ bull} = 6.06$ vs. $M_{Mountain\ Dew} = 6.95$ vs. $M_{L\ \&\ P} = 6.85$ vs. $M_V = 6.09$ vs. $M_{Sprite} = 7.50$, $F(4, 40) = 1.56$; $p = .20$). The taste of Red Bull was rated as the most familiar ($M_{Red\ bull} = 8.50$, $t = 13.02$, $p < .001$) compared to Mountain Dew ($M_{Mountain\ Dew} = 7.75$), L & P ($M_{L\ \&\ P} = 5.11$), V ($M_V = 7.89$), and Sprite ($M_{Sprite} = 7.70$). The confidence with the guess of the brand name was the highest for Mountain Dew (90%) but it was from only one subject. In the case of Red Bull, seven subjects out of eleven (63.63%) correctly guessed the brand name with 83.43% confidence with their choice of the brand name. These figures are higher than those found from other brands. V was the next in terms of the number of subjects (six subjects) who correctly identified the brand, but it was lower in terms of confidence (66.67%). L&P was correctly identified by three subjects (27.2%) with 79.67% confidence while Sprite was correctly answered by five subjects (45.45%) with 81.6% confidence. Thus, Red Bull was confirmed as the brand with a signature taste which is most familiar and recognisable among consumers.

4.8 Experimental Procedure

In case of an explicit measure, an online survey was created using Qualtrics. On the other hand, the reaction time task to measure implicit meaning transfer was conducted using the online software Millisecond. At the beginning of the experiment, participants were told that they would participate in a product testing experiment which was developed from the lolly brand X (i.e., the brand name X was either Powell, or Red Bull & Powell, depending on the condition they were assigned). Then, participants were asked to read the participant information sheet and to sign the consent form. Since this experiment involved eating a newly-made product, anybody who is allergic to any ingredients of the lolly or were feeling unwell were excluded.

After agreeing to participate, the lollies were distributed to participants and they were asked to taste the lolly they picked up from the jar. Participants did not have to finish the whole lolly but had to have enough to savour the taste of it. Then, they answered the explicit and implicit measure in mixed order. Half of the participants started with answering explicit measure followed by reaction time task while the other half of the participants did reaction time task first.

Next, participants were asked a number of questions that checked their awareness of the purpose of this experiment. Finally some general demographic information was collected.

4.9 Conclusion

This chapter presented the research methodology to be used throughout main experiments. First, in Section 4.1 it was explained that the philosophical approach is post-positivist and, based on that, Section 4.2 justifies the use of a quantitative methodology in the research. Explanation of how an experiment is designed and why the method is chosen is discussed in Section 4.3, followed by more discussion about what exactly implicit and explicit measures are and why they are used in this thesis (Section 4.4). After that the conceptual framework of effects of multiple brand cues is proposed in Section 4.5, a discussion of the sample used is contained in Section 4.6. The experimental materials prepared for the studies is explained in Section 4.7, and finally, the experimental procedure followed is explicated in Section 4.8.

Chapter 5 MAIN EXPERIMENTS

This Chapter covers 5 experiments (Section 5.1 to Section 5.5). Experiment 1 and 2 address hypotheses focusing on how sensory signature can function as a brand cue. The results of those two studies reveal that sensory signature has a similar capability in transferring brand meanings to a cobranded product as a brand name cue, both implicitly and explicitly. Findings from Experiment 3 support the results of Experiment 1 and 2. Experiment 4 examines whether the description of a sensory signature is as effective as an actual experience of the sensory signature. Lastly, Experiment 5 finds that it is the sensory signature, not a similar sensory feature, that influences attitude toward the cobranded product.

Before developing specific predictions and empirically examining whether, and how, sensory signature functions as an effective brand cue in a cobranding context, I will briefly revisit the modal priming which I use as a means to transfer brand meanings when sensory signature is used as a cue.

Barsalou (2008) points out the common misconception about grounded cognition, that physical sensation is compulsory for retrieval of similar states is not necessarily true. He further emphasises that “grounded theories are capable of implementing the classic symbolic function that underlie conceptual interpretation” (p. 620). Modal priming is one such mechanism that reflects Barsalou’s claim, as it accounts for how bodily states, or physical sensations, influence subsequent conceptual judgment. More specifically, this mechanism assumes that the activation of physical experiences or bodily states influences the accessibility of abstract concepts via spreading activation (Körner et al., 2015). Classical cognitivists view memory as a semantic network of information nodes and the stimuli used to activate the nodes are in linguistic forms, such as brand name or some stereotypical category trait (Bargh, Chen, & Burrows, 1996; Collins & Loftus, 1975). This view also assumes that sensory cues based on perceptual experience are unable to activate abstract concepts, given that perceptual representation is dissociated from semantic and other memory systems (i.e., a disembodiment perspective) (Tulving & Schacter, 1990). However, according to Zhang and Li (2012, p. 1067), a perceptual experience can serve as a priming cue, which can activate abstract concepts. For example, they found that carrying a heavy shopping bag can activate semantic meaning of “importance” via the activation of a physical experience-associated concept of “heavy.”

Empirical evidence has also been found across different areas of research, demonstrating that sensory cues can activate abstract meanings. For example, being exposed to fishy (vs. neutral) smell causes subjects to decrease their monetary investment in a trust game (Lee & Schwarz, 2012), and sweet (vs. non-sweet) taste increases interest in initiating a romantic relationship (Ren, Tan, Arriaga, & Chan, 2015). Those findings imply that perceptual experience can function as an effective cue (Körner et al., 2015; Lee, 2016). In the context of consumer research, for example, Jiang et al. (2016) found that the shape of brand logo is powerful enough to influence consumers’ perception of attributes associated with a product, such that circular (vs. angular) brand logo causes subjects to perceive the product to be soft

(vs. hard). In this thesis sensory signature of brand, among the many and varied perceptual experiences consumers encounter in the course of product consumption, is proposed as an effective brand cue that can help retrieve and activate brand meanings – even semantic ones – easily. As the perceptual experience provided by a sensory signature is powerful enough to distinguish the brand from others (e.g., the Intel jingle, the pink of the Breast Cancer Foundation, or Stefan Floridian Waters' scent used by Singapore Airlines) when used as a brand cue, the signature is expected to access brand memory easily and activate a wide array of brand meanings. Thus, this thesis aims to understand the efficacy of sensory signature in the transfer of brand meanings in a cobranding context. Consequently, the broad research question addresses is:

Whether and how can a sensory signature contribute to the transfer of brand meanings in a cobranding context?

The remainder of this Chapter consists of a description of a series of five experiments, which aim to answer this overarching research question. If a sensory signature can exert more, or at least a similar, meaning transfer effect as does a brand name, this finding will provide the grounds with which brands can develop efficient and innovative means to engage a cobranding strategy. In order to test this possibility, Experiment 1 focuses on whether sensory signature can be as diagnostic as brand name, by examining transfer effects of brand meanings with different diagnostic nature. Experiment 2 examines the path brand cues use to evaluate a cobranded product.

5.1 Experiment 1: The Diagnostic Nature of Sensory Signature as Brand Cue

In Experiment 1, the efficacy of a signature scent to transfer brand meanings to a cobranded product is examined. In order to examine whether sensory signature possesses a similar diagnostic nature as brand name, the transfer of different types of brand associations (i.e., brand-specific, overlapping between brand and cobranded product category, and cobranded-product relevant) are examined. For sensory signature to be as effective as the brand name, it is required to exert at least a similar capability in activation of brand meanings from cobranded product. Section 5.1 is divided into seven subsections. I address the research objective and hypotheses (Section 5.1.1), present how stimuli for the experiment were prepared (Section 5.1.2), identify the participants (Section 5.1.3), introduce the materials and scales used (Section 5.1.4) and the procedure taken to conduct the experiment (Section 5.1.5), and report the results from the experiment (Section 5.1.6). Lastly, the findings are briefly discussed and an introduction to the next experiment is made (Section 5.1.7).

5.1.1 Research Objective and Hypotheses

This section first proposes the effectiveness of signature scent of Johnson's Baby as unique and representative of brand cue. In order to examine this, specific hypotheses are developed to examine whether signature scent of Johnson's Baby can exert similar effect as a brand name (Section 5.1.1.2). In addition, as brand-specific associations exert significant influence on the product evaluation even when the fit between partner brands is moderately incongruent (Broniarczyk & Alba, 1994), the capability of a brand cue to transfer brand-specific meanings to a cobranded product is the focus of this experiment. As concepts (i.e., meanings) are more salient or strongly associated with the brand, they play more central role in guiding how consumers respond to the brand (Ajzen & Fishbein, 1980). Thus, additional hypotheses are developed concerning whether the level of brand meaning specificity (i.e., the degree of which brand meanings are specific to the brand) influences the effectiveness of brand cues (Section 5.1.1.2).

5.1.1.1 Effectiveness of Scent as a Sensory Signature

Experiment 1 aims to investigate the effects of scent as a sensory signature of a brand. Although it is rare, scents can be trademarked by the United States Patent and Trademark Office, in the same way as conventional trademarks, such as brand logos or slogans (Greene, 2015). Those trademarks have been issued because they can "help identify and distinguish a brand" which overlaps with key characteristics of sensory signature. Brands make use of their signature scent in various ways. For example, Verizon⁸ uses its trademarked flowery musk scent in larger retail stores so that customers can distinguish the locations of their stores from other telecommunications products and services providers.

The research examining the effect of scent has demonstrated whether and when this sensory cue can influence consumer perceptions and behaviour. The findings demonstrate that scent can positively impact consumer attitudes toward what they encounter along with a particular scent. For example, in a retail setting, ambient scent has been found to increase the time shoppers spend in a store and the amount of time taken to evaluate products (Guéguen & Petr, 2006; Knasko, 1995; Schifferstein & Blok, 2002), elevate their mood during shopping (Mitchell, Kahn, & Knasko, 1995; Spangenberg, Sprott, Grohmann, & Tracy, 2006), positively affect approach behaviour (Doucé, Poels, Janssens, & De Backer, 2013; Guéguen & Petr, 2006; Morrison, Gan, Dubelaar, & Oppewal, 2011) or variety-seeking (Mitchell et al., 1995; Orth & Bourrain, 2008), and lead to a positive evaluation or even increased sales of products sold or services provided (Chebat & Michon, 2003; Guéguen & Petr, 2006; Gulas & Bloch, 1995). Though it has not been conducted as extensively as in retail setting, researchers have also recognised the positive impacts the scent has on evaluation of the scented product. For example, ambient scents could improve the evaluation of products that are unfamiliar or not well

⁸ Verizon is an American company that offers telecommunications products and services.

liked (Morrin & Ratneshwar, 2000) and the ambient, product-appropriate, scents enhance the product evaluation while inappropriate scents lower the evaluation (Bone & Jantrania, 1992). An ambient product scent can even improve brand memory (Morrin & Ratneshwar, 2003).

Such findings regarding the effect of scent on brand, particularly its influence on consumer brand memory, provide the grounds to consider product-specific scent as a good candidate to become a sensory signature. First, while scent information may not be easily encoded in the first place compared to other senses, once it does, then the information is encoded into long-term memory (Zucco, 2003). According to findings from odour recognition studies, once people can recognise and recollect scents from their memory, they exhibit minimal reduction rates in recognition accuracy compared to other sensory modalities, such as vision (Engen, Kuisma, & Eimas, 1973; Shepard, 1967). In addition, ambient scent can enhance memory of details for museum exhibits for years after exposure (Aggleton & Waskett, 1999).

Second, consumers exposed to scented products have demonstrated significantly enhanced memory for product information (Krishna et al., 2010). From being exposed to a product imbued with a specific scent, a strong and distinctive long-term link is created between them (Krishna et al., 2010). The distinctiveness of a product scent is what distinguishes it from an ambient scent, which can be associated with any factors encountered in the environment. As a product scent can increase memory for associated brand information (Krishna et al., 2010), the brand signatory scent is likely to exert a stronger influence in retrieving brand-related information via increased accessibility to memory. Krishna et al. (2010) have also found that a scented product can enhance the long-term memory for the non-scent related information. Thus, it can be predicted that when scent is used as a sensory signature of a brand, it enhances long-term memory for brand-related meanings.

To summarise, the signature scent of a brand is expected to activate a wide range of relevant brand meanings, even semantic meanings, as this brand cue can help individuals access their memory easily. As the access to memory via prior experience can lead to the enhanced performance of given tasks even when people may not consciously remember the information (Lee, 2002), signature scent will make consumers feel as if they are re-experiencing the brand, which leads to the activation of relevant brand meanings. Therefore, it is reasonable to conclude that when the scent of a brand is unique and representative of the branded product, it can activate the brand-relevant meanings as effectively as the brand name. Thus, hypotheses H1 to H5 below are proposed, based on the discussion above.

Hypotheses are developed in a way that can examine the predictions related to the diagnostic nature of signature scent. In order to illustrate clearly the conditions which will be compared, the hypotheses are categorised as follows; First, comparison between the control condition and the signature scent only condition; second, a comparison between the signature scent only and brand name only condition and, third, a comparison between brand name only and co-presence of the signature scent and brand name. Here, the control condition is specified as C1, signature scent only condition as C2, brand name only condition as C3, and presence of

both signature scent and brand name as C4. These signs will appear in the hypotheses below as signposts for clear communication of the hypotheses.

i) Comparison between Control Condition (C1) and Signature Scent Only Condition (C2):

It is expected that the signature scent of Johnson's Baby can function as an effective brand cue and activate the relevant brand meanings from the cobranded product. Thus, it is hypothesised that;

H1: Exposure to the signature scent alone on a cobranded product (**C2**) is more likely to result in greater meaning transfer effects, measured by attribute judgments, compared to when no brand cue is present on a cobranded product (**C1**). Specifically:

H1a: The explicitly-measured attribute judgments will be greater when signature scent alone is present on a cobranded product (C2) compared to when no brand cue is present on a cobranded product (C1): $[C1 < C2]$

To further examine and compare the efficacy of sensory signature cue with that of brand name cue, both implicit and explicit measures are used. The implicit measure of reaction time is an effective tool that can measure how well brand cue can access activated concepts. Unlike explicit self-report measures, reaction time can tap into subconsciously stored object associations (Calvert et al., 2014). Thus, attribute judgments measured based on reaction time can demonstrate how automatically each brand cue accesses brand memory and activates the relevant meanings associated with a cobranded product. Thus, reaction time measure will be able to capture the effects of brand cues, automatically activating relevant brand meanings from the cobranded product, implying the occurrence of implicit meaning transfer. Thus, it is hypothesised that;

H1b: The reaction time measured for attribute judgments will be faster when signature scent alone present on a cobranded product (C2) compared to when no brand cue is present on a cobranded product (C1): $[C1 < C2]$

ii) Comparison between Control Condition (C1) and Brand Name Only Condition (C3):

Throughout the extant research employing a meaning transfer model, brand name has been the most frequently and successfully used brand cue, as it can effectively signal brand meanings associated with the brand, even when it is presented with another brand in a cobranding setting. The efficacy of brand name as an effective brand cue stems from the fact that it contains a chunk of information comprised of various brand associations (Richardson et

al., 1994). This associative nature of brand name enhances ability of consumers to access brand memory and allows brand meanings to spread to the cobranded product, and thus making brand name to function as an effective brand cue. The comparison between the control condition (C1) and brand name only condition (C3) is made to ensure the efficacy of a brand name in its ability to transfer brand meanings to a cobranded product before the comparison between the effects of signature scent and brand name is made. Thus, it is hypothesised that;

H2: Exposure to brand name alone on a cobranded product (**C3**) is more likely to result in greater meaning transfer effects, measured by attribute judgments, compared to when no brand cue is present on a cobranded product (**C1**). Specifically:

H2a: The explicitly-measured attribute judgments will be greater when brand name alone is present on a cobranded product (C3) compared to when no brand cue is present on a cobranded product (C1): $[C1 < C3]$

H2b: The reaction time to implicitly measured attribute judgments will be faster when brand name alone is present on a cobranded product (C3) compared to when no brand cue is present on a cobranded product (C1): $[C1 < C3]$

iii) Comparison between Signature Scent Only Condition (C2) and Brand Name Only Condition (C3):

Brand cue is represented in memory by multiple information nodes (McClelland, 2000). As similar cues representing the same brand share most of these nodes in common, activating any one of the cues is likely to result in activation of the common nodes representing the brand (Warlop, Ratneshwar, & van Osselaer, 2005). As I propose the sensory signature of a brand to be as distinctive and representative as brand name, re-experiencing the sensory signature is likely to activate brand meanings as brand name does, and thus lead to effective transfer of brand meanings to the cobranded product. Thus, it is hypothesised that;

H3a: When presented alone on a cobranded product, the impact of signature scent (C2) on explicitly measured attribute judgements is likely to be the same as the impact of brand name (C3) on a cobranded product: $[C2 = C3]$

H3b: When presented alone on a cobranded product, the impact of signature scent (C2) on reaction time used to implicitly measure attribute judgements is likely to be the same as the impact of brand name (C3) on a cobranded product: $[C2 = C3]$

iv) Comparison between Brand Name only Condition (C3) and the presence of both Sensory Signature and Brand Name Condition (C4):

In practice, when a new cobranded product is developed, it is a common practice to display the brand names of both partner brands on the cobranded product to indicate that the partnership has been made. Without a clear indication regarding with whom the brand is partnered with, transferral of brand meanings from one partner brand to the cobranded product is unlikely. While the above-mentioned hypotheses aim to examine the efficacy of sensory signature as an effective brand cue, the hypotheses below compare whether the presence of two effective brand cues (i.e., sensory signature and brand name) can exert stronger influence in activating brand meanings from the cobranded product. This idea is proposed below.

As above, before the comparison between the effects of brand name (C3) and the presence of both brand name and sensory signature (C4) is made, it is necessary to ensure that the two brand cues (C4) condition is more effective in transferring brand meanings than no brand cue condition (C1). Considering that brand memory consists of a network of interconnected nodes containing brand information and a brand cue which helps to easily access consumer memory and activate information nodes, it is predicted that presence of a brand cue will activate the brand-relevant meanings onto a cobranded product more efficiently than the control condition (C1). Thus, it is hypothesised that;

H4: Exposure to the co-presence of signature scent and brand name on a cobranded product (C4) is more likely to result in greater meaning transfer effects measured by attribute judgments compared to when no brand cue is present on a cobranded product (C1). Specifically:

H4a: The explicitly-measured attribute judgments will be greater when the signature scent and brand name are co-present on a cobranded product (C4) compared to when no brand cue is present on a cobranded product (C1): $[C1 < C4]$

H4b: The reaction time to implicitly measure attribute judgments will be faster when the signature scent and brand name are co-present on a cobranded product (C4) compared to when no brand cue is present on a cobranded product (C1): $[C1 < C4]$

As signature scent and brand name are processed via different modalities, they do not share the same attentional resources to process the meaning transfer process, and thus the processing from each brand cue can be conducted without interfering with the other. According to Lwin et al. (2010), scent-based retrieval cue even enhances the ability of visual input to improve recall. In addition, as nature of how information is encoded can influence the strength of association (Keller, 1993), perceptual brand experience via sensory signature can be better encoded and remembered, enhancing the accessibility to memory. Thus, co-presence of brand name and sensory signature on cobranded product can produce synergistic effects. In other words, via co-presented brand cues, consumers can access brand memory more easily, resulting in activation of more meanings on cobranded product compared to when only brand name is present. Thus, it is hypothesised that;

H5a: The explicitly measured attribute judgments will be greater when the signature scent and brand name are co-present on a cobranded product (C4) compared to when only brand name is present on a cobranded product (C3): $[C3 < C4]$

As noted above, the process whereby brand meanings are retrieved from memory involves the strength of the link between the brand and relevant meaning. In other words, as Fazio et al. (1986) found, response latency to evaluation of the association depends on how strongly the object and the evaluation of the object is related. People are likely to make the related judgment more rapidly, as a combination of brand name and sensory signature can create synergistic effects fostering the strength of association between the brand and its meanings. Accordingly, it is predicted that people will require less time to judge whether the brand meaning is associated with the brand in questions when the brand cues co-occur on the cobranded product. Thus, it is hypothesised that;

H5b: The reaction time to implicitly measure attribute judgments will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when only brand name is present on a cobranded product (C3): $[C3 < C4]$

5.1.1.2 Effects of Level of Brand Meaning Specificity on Meanings Transfer

I further propose that the effectiveness of transfer of brand meanings can be examined based on the types of brand meanings that can be transferred to a cobranded product. Specifically, I predict that as the brand cue can transfer more brand meanings, the more diagnostic and representative the sensory signature is. This is because the transfer of brand meanings to cobranded product and the activation of them by sensory signature implies that it possesses strong associations with those meanings in the mind of consumers. In fact, conceptual representations of an object are likely to be dynamic and influenced by the context in which it is presented, such that not all information within a concept can be activated equally (Lebois, Wilson-Mendenhall, & Barsalou, 2015). How information is encoded can influence the

strength of association (Keller, 1993). For example, brand meanings that are positioned to be unique and salient to the brand are likely to be emphasised by the brand through advertising, leading consumers to be exposed more often to the information and to thus actively think about the information when making purchasing decision. Implicitly encoded cues, such as a sensory signature cue, may not be accessible to conscious introspection (Shalgi & Deouell, 2013), but it can still influence the subsequent behaviour without the need for much effort. For example, while participants are exposed to a lemon scent (a scent many cleaning products have) in the room, they keep cleaning crumbs from an eating task during an experiment even though they are consciously unaware of the presence of the scent (Holland, Hendriks, & Aarts, 2005). Thus, brand specific meanings have stronger ties with the brand, and thus become more accessible by brand cue.

Therefore, it is reasonable to conclude that as brand meanings are more specific to the brand they are more strongly associated with the brand, such that it becomes easier for brand cues to access to consumer memory and retrieve those meanings. Thus, it is hypothesised that:

H6a: The impact of brand cues on meaning transfer effects explicitly measured by attribute judgements of cobranded product is likely to be stronger, when brand meanings are more specific to the ingredient brand.

H6b: The impact of brand cues on meaning transfer effects implicitly measured by reaction time of attribute judgements of a cobranded product is likely to be stronger, when brand meanings are more specific to the ingredient brand.

To summarise, Experiment 1 aims to investigate whether the signature scent of Johnson's Baby is as diagnostic as the brand name, such that the former can exert a similar influence on transfer of brand meanings to the cobranded product. In order to investigate the efficacy of signature scent, the hypotheses are developed to compare the effects of the signature scent of Johnson's Baby versus the brand name, as well as the co-presence of both brand cues versus the presence of brand cue alone. In addition, it is proposed that as brand meanings are more specific to the ingredient brand, they are more likely to be transferred via brand cues.

5.1.2 Stimulus Development

This section illustrates the method used to select brand meanings to be used in this experiment for efficacy of signature scent of Johnson's Baby (Section 5.1.2.1), the procedure used to identify the product category for partner brand of Johnson's Baby and to select a fictitious name to be used for the partner brand (Section 5.1.2.2), and how the cobranded product towel was prepared (Section 5.1.2.3). Lastly, based on the finding from Section 5.1.2.2, which proposes the towel as an appropriate product category, Johnson's Baby-related brand

meanings identified from Section 5.1.2.1 are categorised based on their specificity to Johnson's Baby.

5.1.2.1 Pre-test (1): Identification of brand meanings associated with Johnson's Baby

This pre-test is aimed to identify brand meanings associated with Johnson's Baby. Brand meanings are stored in consumer memory where various brand experiences have been accumulated (Teichert & Schöntag, 2010). Brand experiences are inherently multimodal (Keller, 2003); so in order to obtain holistic brand meanings it is necessary to provide the stimulus to subjects in the same way they usually experience the brand, via all five senses. The current methods used to retrieve brand associations, however, cannot reflect such "multi-sensory, dynamic, and non-conscious nature" of brand knowledge (von Wallpach & Kreuzer, 2013, p. 1325). For example, while a word association test, such as a free association test, has been the most widely and frequently employed brand associations retrieving method (e.g., Vieceli, 2011), this method has been found not suitable to generate brand-related simulation (Papies, 2013). Thus, this thesis used modified version of multi-sensory the sculpting (MSS) technique (von Wallpach & Kreuzer, 2013) which is discussed in the next.

In order to obtain a complete list of Johnson's Baby-related brand meanings, this pre-test employs multi-sensory sculpting (MSS) technique developed by von Wallpach and Kreuzer (2013). The MSS is used to obtain verbal and non-verbal brand-related metaphors which are accumulated from conscious and unconscious perceptual brand experiences (von Wallpach & Kreuzer, 2013). Verbal metaphors are linguistic messages that can allow individuals to mentally simulate the relevant perceptual experiences (e.g., Life is a journey). Non-verbal metaphors are, for instance, pictures or sounds that are used to express the object-related perceptual experience itself, and often they represent connotative meanings associated with the object. By using such brand metaphors, individuals can express what they associate with a brand effectively and vividly. Thus, by employing the MSS approximating actual perceptual brand experiences, this pre-test attempted to retrieve a more genuine, realistic set of brand-relevant meanings.

The MSS procedure consists of three stages; sensory toolkit exploration, multi-sensory sculpting, and long, unstructured one-on-one interviews. First, subjects are asked to freely explore the materials in the sensory toolkit (See Appendix 2 for the materials included) with all their senses. The purpose of this phase was to make participants familiar with the materials within the toolkit. In addition, without realising, this toolkit exploration stimulates subjects to pre-activate their senses for the next multi-sensory sculpture construction task. Thus, from using the sensory toolkit, subjects may re-activate sensory information (e.g., what it smells like or what it tastes like). The next phase, multi-sensory sculpting, involves constructing a sculpture that individuals think is representing what the brand means to him/her using the materials in the sensory toolkit. Building a sculpture representing the brand using the materials in the toolkit, participants can provide a chance to introspect about the object by fully utilising brand experiences based on different modalities. Lastly, an unstructured interview is conducted to

allow participants to freely express what they associate with the brand without being engaged in a conscious reasoning process.

This thesis modified MSS by using two of the three phases; sensory toolkit exploration and a semi-structured, one-on-one interview. While the sculpture construction can tap deeper into subjects' associations of the brand, it may impede subjects to fully express them. In addition, the brand meanings obtained from these two phases are suitable for use in this thesis, as modified MSS can also generate verbal and non-verbal metaphors representing perceptual brand experiences via directly stimulating multiple senses involved with the experiences and related verbal explications. Thus, only the sensory toolkit exploration and one-on-one interview were used. This pre-test was approved by the Auckland University of Technology Ethics Committee on 10 August, 2015 (AUTEC reference number 15/278).

Participants of Pre-test (1) 21 participants (Female = 61.90%, $M_{age} = 28.3$) were recruited from undergraduate, postgraduate students and the employees attending and working at AUT university. In the MSS workshop by von Wallpach and Kreuzer (2013), a total of 15 consumers participated. As for ZMET which is similar to MSS method, Zaltman (1997) recommends 15 to 20 subjects. Thus, 21 participants considered enough to obtain the data I was looking for.

Procedure of Pre-test (1) This pre-test was conducted individually in a small, quiet room and the completion of the test took an average of 20 to 35 minutes per participant. After completing the experiment, participants received a \$10 Westfield voucher to thank them for their time. First, upon arrival, participants were greeted by the researcher and were given a Participant Information Sheet, which provides information about the experiment concerning purpose and procedure. Then, they were provided with a Consent Form, which is a document that participants need to sign to show that their participation in the experiment is voluntary. In this document, it is clearly illustrated that the experiment involves eating food items and thus those who are allergic or sensitive to any food ingredients are not recommended to participate.

Before the modified MSS procedure began, participants were asked to write down the product categories they associate with Johnson's Baby the most. As many different product categories are available under the brand name, it was necessary to find out the category that might first come to the mind of consumers when they see Johnson's Baby cobranded product.

Then, first, participants were instructed to freely explore the materials within a sensory toolkit in a way that they could stimulate their all five senses (i.e., touch, taste, smell, auditory, and vision). In case of scent, participants smelled the different aroma oil in a small glass container. Salt, sugar, and chili powder were presented in a small disposable container. For human sounds, the app called 'H. Sounds' is used and for sounds from nature the app called 'Nature Sound' is used. Both apps were loaded on mini iPad so participants can play them by themselves. Different types of music (e.g., classic, rock music, or pop music) were sourced from Spotify, which is free music streaming app. Because the same music was needed to be heard

for each music genre, the researcher played the selected music for the participants. No time limit was imposed.

Participants were then asked to select the materials that they think represent what Johnson's Baby means to them. In this phase, participants were encouraged to explore the materials again, if necessary. When placed in such an environment, stimulation is expected to occur so that people can easily recall brand-related information (Barsalou, 2008; Krishna, 2010). No time limit was imposed. For the selection of sounds, the participants jotted down the list they think is relevant to the brand.

Finally, the semi-structured interview was conducted, asking the reasons for their selection of the materials. In accordance with the semi-structured nature of interviews, the interview was flexible and further questions were asked to stimulate why and how selected materials linked to the participants' experiences with Johnson's Baby. The interview was conducted for between 10 to 18 minutes. All the interviews were recorded and transcribed for further analysis. Lastly, respondents filled out the demographic information regarding age and gender.

Analysis of Pre-Test (1) Data The product category that was most strongly associated with Johnson's Baby is Baby Lotion (54.1%) followed by Powder (18.9%), Body Wash (13.5%), and Shampoo (10.8%). The interview data were analysed using a computer-assisted qualitative data analysis software QSR NVivo Version 10. NVivo helps clearly organise the data so that it can be easily identified and retrieved for identification of the relationships between critical information (Lewins & Silver, 2007). The unit of analysis was Johnson's Baby brand attributes. First, any attributes that were mentioned in relation to the materials from the sensory toolkit were identified, which were 46 attributes in total. Then, interpretive coding was conducted, which requires further analysis of categorisation of attributes based on similarity and linking them together to broader concepts (Lewins & Silver, 2007). Following von Wallpach and Kreuzer (2013), 12 attributes that were the most frequently mentioned were identified. Brand meaning such as 'soft' were mentioned 71 times, as it was expressed multiple times using multiple senses by every participant. Thus, the core brand meanings that constitute consumer perception of Johnson's Baby are revealed. (See Table 5.1)

Table 5.1: List of Johnson's Baby-related meanings identified from MSS

List of Johnson's Baby-related meanings (Number of time the meaning was identified during the interview)
Baby (70), Bath time (23), Calming (34), Clean (18), Distinctive scent (26), Loving (18), Memories (18), Natural (12), Pure (15), Relaxing (37), Soft (71), Smooth (48)

5.1.2.2 Pre-test (2): Partner category and fictitious partner brand name selection

Product category selection The next task is to select the partner product category that could make a cobranded product in combination with Johnson's Baby. As this thesis assumes that

sensory signature is effective enough to transfer brand meanings even under a moderately incongruent fit between partner brand product categories, a category that has moderately incongruent fit with body lotion was sought. While Johnson's Baby has a few different products available under its name (e.g., talcum powder, shampoo and body wash), a body lotion was chosen. From Pre-test (1), it was found that the body lotion is the product category that people most strongly associate with Johnson's Baby. In addition, Johnson's Baby lotion has been most widely used across different range of consumers (e.g., regardless of age and gender) and it is the one with signature powdery scent. Johnson's Baby powder has the same signature scent but its use is limited compared to the lotion.

66 undergraduate students at AUT university (Female = 71.2%, $M_{age} = 20.1$) participated in this pre-test. Four product categories proposed as a potential cobranded partner product category to body lotion are towel, blanket, tissue, and wipes. The same students participated later, in the product category selection process for Experiment 2, which examined the effects of signature taste of Red Bull. Participants were asked to rate how well they think body lotion and the indicated product category would match if they were combined into a single product on one item using a 7-point scale (1 = poorly matched, 7 = well matched). Towel showed the highest fit with body lotion (mean = 4.83; $t = 3.99$, $p < .001$), followed by wipes (mean = 4.24), tissue (mean = 3.71), and blanket was found to be least fitting (mean = 2.97). While the fit between body lotion and wipes was more suitable as moderately incongruent, it was found that Johnson's Baby wipes already exist in the market. Thus, towel was selected as a partner product category.

Partner brand name selection Three different fictitious brand names (i.e., Elfin, Bowen, and Nara) were proposed for product category towel. They were from a focus group discussion with five postgraduate students at AUT university (Female = 75%, $M_{age} = 27.2$) and the researcher's search of towel brand name via internet. In the focus group discussion, the participants were asked to brainstorm the brand names that might be suitable for towel category. The brand name Elfin resulted from the focus group discussion, and Bowen and Nara were found from the search from internet. These are actual towel brand names from overseas, and thus assumed to be unfamiliar to consumers in New Zealand.

Fifty-five undergraduate students at AUT university (Female = 63.6%, $M_{age} = 22.2$) participated in this pre-test. The same students also participated later in the partner brand name selection process for Experiment 2, which examines the effects of the signature taste of Red Bull. Participants rated their familiar with the brand names on one item using a 7-point scale (1 = unfamiliar, 7 = familiar) and also indicated their attitude toward these brand names on three items using a 7-point scale (1 = negative / unfavourable / bad, 7 = positive / favourable / good). The grouping of these 3 meanings was found to be valid and reliable ($\alpha_{Elfin} = .98$, $\alpha_{Nara} = .98$ and $\alpha_{Bowen} = .98$). Lastly, they were asked whether the brand name reminded them of anything, and if yes, then to indicate what.

All the names were found to be unfamiliar ($M_{Elfin} = 1.23$ vs. $M_{Nara} = 1.55$ vs. $M_{Bowen} = 1.48$) and neutral ($M_{Elfin} = 3.64$ vs. $M_{Nara} = 3.85$ vs. $M_{Bowen} = 3.69$). However, Elfin was

selected as a brand name for a partner product category towel as some participants indicated that brand name *Bowel* reminded them of the organ and brand name *Nara* reminded them of one of cities in Japan. Brand name *Elfin* was answered as not being associated with anything.

5.1.2.3 Pre-test (3): Preparation of cobranded product

Preparation of signature scent of Johnson's Baby Based on the results from pre-test above, a towel was selected as a cobranded category that Johnson's Baby would develop the cobranded product. Thus, in the scenario of experiment in Experiment 1, it was assumed that Johnson's Baby and a towel brand Elfin developed a cobranded towel together. As this experiment planned to manipulate the presence of the signature powdery scent of Johnson's Baby, it was necessary to find the scent that most closely resembles the signature scent of Johnson's Baby. The baby powder scent from the famous fragrance brand DEMETER was used in the experiment. The fragrance brand Demeter, which has over 300 different fragrances, has developed Baby Powder scent which was inspired by the scent of baby powder from Johnson's Baby.

Reliability of signature scent of Johnson's Baby It was necessary to examine whether the scent from the DEMETER can be still associated with Johnson's Baby brand when it was put on a towel. 11 postgraduate students at AUT University (Female = 54.5%, $M_{age} = 25.09$) participated in this pre-test. First, participants indicated their attitude toward the scent of the towel on two items using a 7-point scale (1 = very unpleasant / do not like at all, 7 = very pleasant / like a lot; $r = .93$). They, then, indicated the familiarity of the scent on one item using a 7-point scale (a = not at all familiar, 7 = very familiar). They were also asked to indicate whether the scent reminded them of any body lotion brand and, if yes, then to write down the brand name. For those who wrote down any brand names were asked to indicate their confidence with the choice of the brand name on the horizontal slider scale of 0 to 100 (0 = not at all, 100 = very much).

The scent was evaluated as favourable ($M = 5.24$) and familiar ($M = 5.09$). 5 out of 11 participants were able to correctly associate the scent with Johnson's Baby (40.9%) with 68% of confidence with their choice of the brand name. The confidence level was calculated based on the figures from those only who have correctly identified the brand name.

5.1.2.4 Pre-test (4): Classification of Johnson's Baby brand meanings

As stated previously, the purpose of Experiment 1 is to examine whether sensory signature can function as an effective brand cue that has representative and diagnostic nature. This assumption is tested by seeing whether it can transfer brand meanings with different specificity level of the ingredient brand, Johnson's Baby, to a cobranded product, a towel. Thus,

it was necessary to conduct another pre-test that can classify previously-identified brand meanings (from Pre-test 1) based on how specific they are to Johnson's Baby.

37 MBA students at AUT university (female = 44.7%, $M_{age} = 29.22$) participated in this pre-test. Participants indicated how closely each of 12 Johnson's Baby meanings is related to either a product category 'Towel' or a brand 'Johnson's Baby' on a single item, using a 9-point scale (1 = Towel, 9 = Johnson's Baby). A higher score indicates a higher relationship to Johnson's Baby brand. Paired sample t-tests reveal that significant differences exist among pre-defined groups of Johnson's Baby meanings. The group of meanings pre-defined to be specific to Johnson's Baby is significantly different from both the overlapping meanings ($M_{\text{Specific to Johnson's Baby}} = 7.02$ vs. $M_{\text{Overlapping}} = 5.49$, $t(36) = 6.64$, $p < .001$) and the relevant-to-towel meanings ($M_{\text{Specific to Johnson's Baby}} = 7.02$ vs. $M_{\text{Relevant to Towel}} = 4.16$, $t(36) = 9.45$, $p < .001$). The significant difference between the group of overlapping meanings and the relevant-to-towel meanings also prevailed ($M_{\text{Overlapping}} = 5.49$ vs. $M_{\text{Relevant to Towel}} = 4.16$, $t(36) = 4.78$, $p < .001$). Thus, based on the specificity to Johnson's Baby, brand meanings were categorised into three different categories; Johnson's Baby specific meanings, Overlapping meanings between Johnson's Baby and towel, and Towel-relevant meanings (See Table 5.2).

Table 5.2: Categorisation of brand meanings based on the specificity to Johnson's Baby

Classification of Johnson's Baby Meanings	Relevant-to-Towel	Overlapping	Johnson's Baby-specific
Johnson's Baby Meanings	Bath time, Clean, Pure, Soft	Calming, Natural, Relaxing, Smooth	Baby, Distinctive scent, Loving, Memories

The main experiment which follows next was approved by the Auckland University of Technology Ethics Committee on 9 May, 2016 (AUTEC reference number 16/61).

5.1.3 Participants

Initially, 134 undergraduate students at AUT university participated in the experiment. It was conducted across seven workshop classes organised for the students enrolled in level 7 (i.e., final year) undergraduate classes. At the beginning of the workshop, the researcher briefly explained what the experiment is about and invited students to participate in the experiment. A detailed description of how the students were recruited and participated in the experiment will be illustrated in section 5.1.5 Procedure. As participants being aware of the purpose of the experiment could distort the outcomes of the implicit measure, the information about the purpose of the study provided was slightly changed. As each participant only received one experimental manipulation, so the chance of a participant being aware of the experimental task is much reduced.

There was a deviation in the number of participants across different conditions as only one web script of reaction time measure could be utilised at a time (The details of the software program used for the reaction time measure and how it was utilised in the experiment will be explained further, along with description of implicit measure in section 5.1.4.2 Dependent measures). Thus, students in the same workshop were assigned to the same condition. That was the reason why an unequal number of participants were assigned to experimental conditions. However, the assignment of workshop into the experimental condition was random.

18 participants were excluded during the analysis because they did not complete the survey. So responses from 117 undergraduate students female = 65.0%, $M_{\text{age}} = 22.13$) were used in the analysis. As previously identified in section 3.5.2, the desired minimum sample size required is 128 to have adequate power ($1 - \beta > .80$) with a medium effect size ($f = .30$) incorporating a significance level at .05 (Faul et al., 2007). In many studies, however, because of various practical constraints (e.g., monetary or time constraints), it is often difficult to recruit a large number of participants as suggested by a *priori* test by G*Power 3. In such cases, *post hoc* power analysis can be conducted to examine whether the present sample size is good enough to yield statistically significant results (Faul et al., 2007). Thus, *post hoc* power analysis was conducted using actual effect size f . As the number of participants varied depending on the condition and the types of measures used, the appropriateness of the sample size is discussed within the discussion of each transfer effect, below.

5.1.4 Materials and Scales

5.1.4.1 Stimulus material presentation

The stimuli used is hand towels purchased from a local bedding and bath products shop. The tag specifying the name of the manufacturer and what the towel is made of (actually 100% Egyptian cotton) was removed. This is to prevent the influence of any information other than the signature scent or Johnson's Baby brand name might have on the evaluation of the cobranded product. For the same reason, only white towels were selected. When unfolded, a towel is 65 cm x 38 cm, so it is smaller than a bath towel but bigger than a wash cloth. In order to help participants to think of the towel more like a probable commercial product found in a shop, it was presented folded (14.5 cm x 17 cm) and wrapped with an opaque paper band with different brand names printed on the band (depending on the condition in which the stimulus was used). The height of the paper band is about one third of the height of the folded towel, and the brand names are printed in the middle. The fonts of Johnson's Baby brand name printed on the band is exactly the same as the one shown on Johnson's Baby products. Each was presented with or without the signature scent, thus creating four possible treatment conditions. Pictures of the stimuli used for the experiment are presented in Figure 5.1.



Without Johnson's Baby Brand Name



With Johnson's Baby Brand Name

Figure 5.1. The presentation of cobranded product towel

5.1.4.2 Dependent measures

Previously, in section 5.1.2, Johnson's Baby meanings were identified (i.e., pre-test (1)) and classified based on their specificity to the brand (i.e., pre-test (4)). The dependent measures were used to examine whether Johnson's Baby meanings could be activated when its signature scent was used as a cue for Johnson's Baby cobranded product.

Explicit meaning transfer measured using explicit measure

When explicit measure was used, Johnson's baby brand meanings (i.e., Baby, Distinctive scent, Loving, Memories, Calming, Natural, Relaxing, Smooth, Bath time, Clean, Pure, Soft) were presented in a random order and the participants were asked to indicate the extent to which each meaning was associated with a cobranded product (i.e., towel) using a 7-point Likert type scale (1 = Strongly disagree, 7 = Strongly agree). A higher score indicates that a cobranded towel is associated with the meaning of Johnson's Baby asked, and thus activated better than other Johnson's Baby meanings presented (See Appendix 7 for the survey questions used in Experiment 1).

Implicit meaning transfer measured using reaction time measure

The implicit measure used for this task was a simple reaction time task, asking participants to indicate 'yes' or 'no' to the question asked. Stimuli in the reaction time-based test were presented using Inquisit Web software by Millisecond (version 4.0) (2014). Inquisit Web software was selected as it can record reaction times with millisecond accuracy, and thus provides a sensitive measure for measuring reaction time. In order to perform the task, a participant has to download the Inquisit 4 Player app to their computer because this method enables to achieve precision timing even though the task is performed over the web.

Participants were exposed to the target brand name, Johnson's Baby, for 750 milliseconds, then the brand was replaced with either one of the meanings from the Johnson's Baby meanings previously identified or filler meanings which are not related to Johnson's Baby. The filler meanings used were Party, Strong, Sports, Stimulating, Masculine, Daring, Alcohol,

Fast, Summer, Unhealthy, Caffeine. The brand meaning appeared on the screen remained until a participant responded to the question.

Participants were instructed to press, as rapidly as possible, either a key for 'yes' or 'no' depending on whether the meaning appeared was associated with Johnson's Baby or not. A shorter time taken to answer either 'yes' or 'no' indicates a stronger association between the cobranded product and the meaning of Johnson's Baby. The order of presentation of the meanings was randomised to avoid any bias from order effects (Till, Baack, & Waterman, 2011). Also, the positions of keys indicating 'yes' and 'no' were randomised (see Table 6.1 and 6.2 in Appendix 6 for the demonstration of reaction time measure).

The way stimuli were presented employed a 2 (signature scent: present vs. not present) by 2 (Johnson's Baby brand name: present vs. not present) by 2 (order of measurement presentation: explicit measures first vs. implicit measure first) mixed design with the first two as between-subjects factors and the last one as a within-subject factor.

5.1.5 Procedure

As mentioned previously in section 5.1.3 Participants, the data collection was conducted across 7 workshops organised for Level 7 marketing papers at AUT university. The students participate in two workshops each week, one to reiterate the class contents and the other to discuss and receive advice on their group project, which is a compulsory task for those enrolled in these classes. The experiments were conducted during the latter type of workshop. The workshop studio is equipped with 8 computers, and the researcher set up a separate station at the back of the studio space using 5 of them. The workshop was three hours long and the students mostly spent the time discussing their project in a group. Each group consists of 4 to 5 students. During the course of a workshop, each group was randomly approached by the researcher and led to the station at the back of the studio to participate in the experiment.

The order of explicit and implicit measure was mixed group by group. For example, when one group of participants completed the explicit measure first, then the next group of participants completed implicit measure first. The survey using explicit measure was created online using Qualtrics and the one employing implicit measure was created using Inquisit Web software (version 4) by Millisecond. Millisecond provides access to Millisecond Test Library which contains a large numbers of scripts⁹, including source code, of implicit measures (e.g.,

⁹ The thesis adopted implicit measure from Brand Association Reaction Time Task by Till, Baack, & Waterman (2011), which is available at Millisecond Test Library. At the time of the experiment, however, this specific script was not available. Thus, the student collaborated on the creation of this specific test script with Dr Katja Borchert from Millisecond Software, LLC. Variation of the script was made to be specifically used in this experiment.

IAT, Approach Avoidance Task, and Extrinsic Affective Simon Task to name a few) that have been used in various areas of research such as psychology and marketing.

Once participants were seated in front of computers, they were asked to take out a towel from a zipper bag placed in front of the computer and to explore it as if they were buying a new towel for themselves at a store. The towel was kept inside a zipper bag to keep it clean and to keep its scent sustainable across the conditions. The participants were told not to discuss or talk to each other while assessing the towel. Also, they were given enough time to assess the towel at their own pace.

Once every participant in the session had completed this task, they were asked to read the instructions. One group of participants completed implicit measure before completing explicit measure. Meanwhile, the other group of participants completed explicit measure before completing implicit measure. Those who completed the implicit measure first read the following.

New Product Evaluation

This experiment consists of TWO stages. The task you will be doing in the FIRST STAGE of this experiment involves PRODUCT JUDGMENT. A brand name will be displayed, and you must decide whether it applies to a brand. You should respond AS RAPIDLY AS POSSIBLE, but don't respond so fast that you make many errors (Occasional errors are okay). The detailed instructions of the task will follow. After completing the task in first stage, you will be directed to the SECOND STAGE of the experiment. Please be sure to complete BOTH stages.

Then, they had a practice session which had the same structure as the actual test. Those who completed answering implicit measure from Inquisit software were automatically sent to Qualtrics to complete the explicit measure as well.

Those who answered the explicit measure first read that the experiment was about new product evaluation and consists of two stages. This was similar to what was shown to participants who answered the implicit measure first. However, the instruction on how to complete implicit measure was not given this time. In addition, due to the technical issue with the Millisecond, those who first completed the explicit measure from Qualtrics first could not be automatically redirected to the Inquisit web script, and therefore the researcher had to individually launch Inquisit software script for the participants.

At the end of the experiment, participants completed demand assessment questions by indicating whether there were any factors that influenced their rating of the cobranded towel. First, the participants were asked to select either yes or no to the question "You rated the product in the way you thought the experimenter wanted you to rate them." Then, three additional questions aimed at discovering the participants being aware of the purpose of the experiment were asked following funnelled debriefing technique. The questions were "In your opinion, what was the purpose of this study?", "During the study, did you ever have a thought

that its purpose might be something other than you were told? If so, when did this occur to you, and what were you thinking?”, and “Did you notice anything specific in the presentation of the product? If so, please describe what struck you as remarkable.” Next, a history effect was also measured as a news report, spread world-wide, about the loss of Johnson’s Baby in a lawsuit claiming that the fine-powder products cause ovarian cancer. There was a possibility that people who had read or heard about the news might be influenced in examining the cobranded towel with signature powdery scent on it. Thus, those participants in the conditions with the presence of signature scent on the cobranded towel were asked one more question, “Have you heard any incidence about Johnson’s Baby lately from the media? If you have, please describe what it is.” Then, in order to prevent any confusion that might be caused by switching between two different survey platforms, at the end of each survey the participants were asked to type in the last 4 digits of his/her student ID number. Lastly, the participants completed demographic questions asking their gender and age.

5.1.6 Results

The way stimuli were presented employed a 2 (signature scent: present vs. not present) by 2 (Johnson’s Baby brand name: present vs. not present) by 2 (order of measurement presentation: explicit measure first vs. implicit measure first) mixed design with the first two as between-subjects factors and the last one as a within-subject factor. The analyses of the data, however, was conducted in the context of an omnibus ANOVA F-test as the hypotheses developed focused on comparing the effects of sensory signature (i.e. signature scent of Johnson’s Baby) with other conditions, in isolation or in combination with brand name.

Among those who answered that they evaluated the product in the way that they thought the experimenter wanted them to, no one correctly guessed the purpose of the experiment. However, one participant, who indicated s/he did not rate the questions as the researcher wishes, was the most close to correctly identifying the purpose of the experiment (i.e., Brand associations and liking with some moderating influence, possibly olfactory). In addition, no participants reported of hearing any incidence about Johnson’s Baby recently, and thus no history effect was expected to influence the responses from participants.

5.1.6.1 Transfer of Johnson’s Baby-specific brand meanings

Appropriateness of the sample size to assess the meanings transfer

The number of students who participated in this experiment was 117 but some of them completed only one of either explicit or implicit measure survey. Thus, actual number of participants included in the analysis of the transfer of Johnson’s Baby-specific brand meanings were 115 for the measurement of explicit meanings transfer and 113 for implicit meanings transfer. In both cases, the sample size was sufficient to provide sufficient power ($1 - \beta > .80$) for

the statistical findings, as they had a high effect size f of .57 for explicit meaning transfer and a medium effect size f of .28 for implicit meaning transfer.

Explicit transfer of Johnson's Baby-specific brand meanings

The four Johnson's Baby brand meanings (i.e., Baby, Distinctive scent, Loving, and Memories) were combined, as they are classified as specific to Johnson's Baby brand, and the grouping of those four meanings was found to be both valid and reliable ($\alpha = .76$).

No significant difference was observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 5.20$ vs. $M_{\text{Explicit measure first}} = 4.97$, $F(1, 113) = 1.17$, $p = .28$). This result shows that whether implicit or explicit measures are used first does not influence the measure of transfer effects. Significant differences were observed between all four conditions ($F(3, 111) = 11.86$, $p < .001$) (See Table 5.3).

Table 5.3: The effects of brand cue(s) on explicit attributes judgment of Johnson's Baby-specific meanings

	1	2	3	4
Experiment conditions	No Brand Cue	Scent Only	Brand Name Only	Scent and Brand Name
Mean (SD)	3.91 ^a (1.05)	5.32 ^{b,c} (.96)	5.06 ^b (1.23)	5.60 ^c (.91)
<i>n</i>	20	37	27	31

Note. Different subscripts represent significant means difference at the .01 level (a vs. b, c) and at the .05 level (b vs. c).

A series of univariate ANOVA with planned contrasts via L matrix was adopted to test the effect of different types of brand cue on activation of the brand meanings, because this method is effective in capturing the difference between the means. Planned contrasts comparing the control condition (i.e., no brand cue) and treatment conditions (scent only, brand name only, and scent and brand name) reveal that presence of any brand cue is significantly more effective in transferring Johnson's Baby-specific brand meanings ($M_{\text{No Brand Cue}} = 3.91$ vs. $M_{\text{Scent Only}} = 5.32$, $F(1, 111) = 24.08$, $p < .001$; $M_{\text{No Brand Cue}} = 3.91$ vs. $M_{\text{Brand Name Only}} = 5.06$, $F(1, 111) = 14.33$, $p < .001$; $M_{\text{No Brand Cue}} = 3.91$ vs. $M_{\text{Scent and Brand Name}} = 5.60$, $F(1, 111) = 32.71$, $p < .001$). Thus, Hypotheses H1a, H2a, and H4a predicting the efficacy of brand cues, including the signature scent, are supported.

A planned contrast comparing the effects of Scent Only and Brand Name Only on brand meanings transferring effects reveals that the signature scent of Johnson's Baby is as effective as the brand name in activating the brand meanings from the cobranded product ($M_{\text{Scent Only}} = 5.32$ vs. $M_{\text{Brand Name Only}} = 5.06$, $F(1, 111) = .94$, $p = .34$), thus supporting Hypothesis H3a, which predicts the efficacy of sensory signature as a brand cue comparable to brand name. Additional contrasts compare the effects of Brand Name Only and Scent and Brand Name, and reveal that the presence of two brand cues are more effective than the presence of brand name alone in activating Johnson's Baby-specific brand meanings on a cobranded towel ($M_{\text{Brand Name Only}} = 5.06$

vs. $M_{\text{Scent and Brand Name}} = 5.60$, $F(1, 111) = 3.95$, $p < .05$). This finding supports Hypothesis H5a, which predicts the presence of both sensory signature and brand name is more effective in transferring the brand meanings compared to when only brand name is present on a cobranded product (See Figure 5.2).

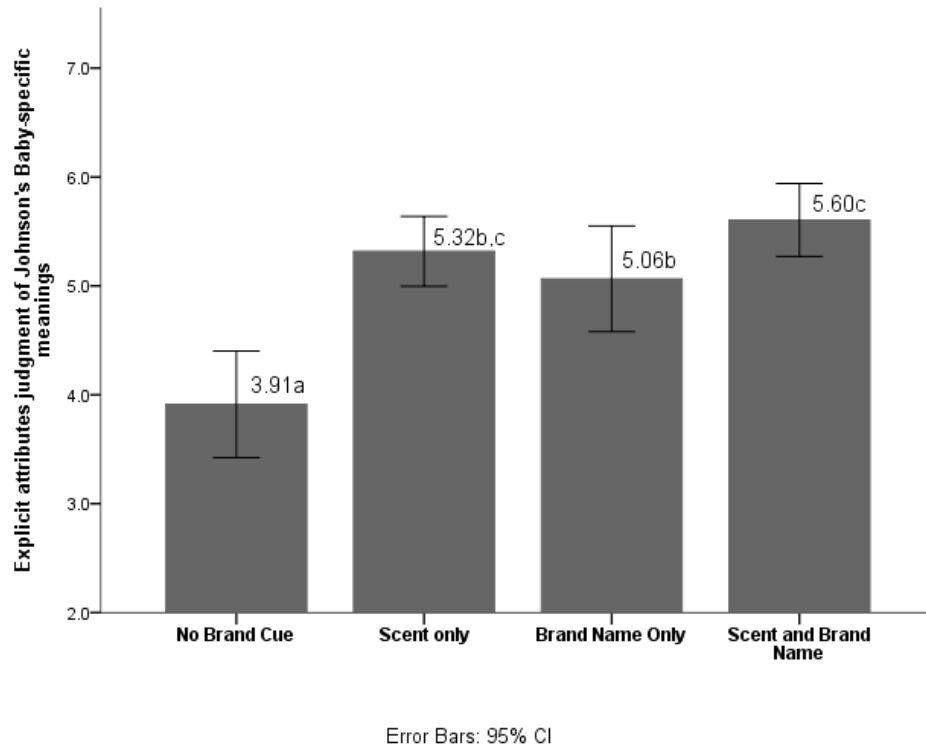


Figure 5.2. Explicit attributes judgments of Johnson's Baby-specific meanings

Implicit transfer of Johnson's Baby-specific brand meanings

For the analysis of implicit data, the outliers have first to be removed. Participants who had a response time longer than 10 seconds for any single response were excluded. Also, responses with above/below ± 2.0 standard deviations were removed (Ratcliff, 1993). Research using reaction time measure often uses a natural log transformation of the individual reaction times to reduce the skewness of the data (Fazio, 1990). However, if the skewness is not significant then this process can be avoided to prevent too much distortion of the data (Baack, 2006). As the skewness here was not severe, no natural log transformation of the data was conducted.

Only the meanings that participants answered 'Yes' to were considered for the analysis. This is because this experiment is only interested in examining brand meanings that actually transferred to a cobranded product (Till et al., 2011). The number of subjects for each condition is not consistent because only those who answered 'Yes' regarding the associations between Johnson's Baby-specific meanings and cobranded towel are considered. In order to compensate for the small and inconsistent sample size, two different approaches are used. First, instead of taking only those who answered 'Yes' across all four conditions, subjects who chose 'Yes' for at least one of the four meanings were considered and their reaction times for

each condition were averaged. The same procedure was conducted for those who answered 'Yes' for more than 2 meanings, and so on. Secondly, missing values were replaced with the average reaction time of those who answered 'Yes' for all four meanings at each condition.

Before analysing the transfer of Johnson's Baby-relevant meanings (i.e., Johnson's Baby-specific, the overlapping, and the towel-relevant meanings), the transfer of the filler meanings (i.e., meanings irrelevant to Johnson's Baby mentioned in 5.1.4.2. Dependent measures) to the cobranded product was investigated. It was expected that as filler meanings are irrelevant to Johnson's Baby, the meaning transfer effects should only be found for the brand relevant meanings but not for filler meanings. The comparison was made by comparing the responses indicating affirmative association between filler meanings and Johnson's Baby. Planned contrasts comparing the effects of the control condition (No Brand Cue) and treatment conditions (Scent Only, Brand Name Only, and Scent and Brand Name) reveal that no significant difference is present across different conditions, regardless of the type and number of brand cues used ($M_{\text{No Brand Cue}} = 1291.96$ vs. $M_{\text{Scent Only}} = 1091.04$ vs. $M_{\text{Brand Name Only}} = 1134.21$ vs. $M_{\text{Scent and Brand Name}} = 1138.18$, $F(3, 87) = .77$, $p = .52$).

The grouping of four Johnson's baby-specific meanings measured using implicit measure was $\alpha = .62$, which, although less than .70, is still considered acceptable (Hair et al., 2010). In the extant literature different types of reaction time measures have used Cronbach's alpha in examining the inter-item reliability of reaction time (e.g., Walhovd & Fjell, 2007). No significant difference is observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 966.00$ vs. $M_{\text{Explicit measure first}} = 911.82$, $F(1, 111) = 1.25$, $p = .27$). As discussed in the previous chapter, two different approaches were used to analyse the implicit data. First, subjects who answered 'Yes' for at least one of the four highly Johnson's Baby relevant meanings were considered until only participants who answered all four meanings were included in the analyses. Secondly, missing values were replaced with the average reaction time of those who answered 'Yes' for all four meanings. Replacing the missing values with the average reaction time may not be conventional, but certainly it is not something that has not been done before (Walhovd & Fjell, 2007). For example, in case of multi-trial tasks, there is a risk that reaction time on some trials can deviate much from the rest, so the reaction time on the first trial deviates hugely from the last trial. So in their analyses, missing values were replaced by the value estimated using known values. Although the task in this thesis was not strictly multi-trial task as participants had only answered once for each meaning, considering that meanings are grouped to represent a key concept, the reaction time measured for each meaning has the nature of multi-trial tasks. Thus, it would be also appropriate to replace missing values by using average of reaction times of other meanings. As a result, the implicit data is analysed using five different ways, and all of them yield a statistically significant result at the .05 level except the case when 'yes' to all four meanings were used for the analysis, which yields only a marginally significant difference at the .01 level (See Table 4.1 in Appendix 4 for the details).

When missing values replace the average reaction time of those who answered 'Yes' for all four meanings, significant differences are observed between all four conditions ($F(3, 113) = 3.48, p < .05$) (See Table 5.4).

Table 5.4: The effects of brand cue(s) on reaction time of Johnson's Baby-specific meanings

	1	2	3	4
Experiment conditions	No Brand Cue	Scent Only	Brand Name Only	Scent and Brand Name
Mean	1032.71 ^a	911.74 ^b	879.84 ^b	925.89 ^b
(SD)	(195.86)	(157.38)	(147.50)	(187.26)
n	21	37	28	31

Note. Different subscripts represent significant means difference at the .05 level.

Planned contrasts comparing the effects of the control condition (No Brand Cue) and treatment conditions (Scent Only, Brand Name Only, and Scent and Brand Name) reveal that presence of any brand cue is significantly more effective in implicitly transferring Johnson's Baby-specific brand meanings ($M_{\text{No Brand Cue}} = 1032.71$ vs. $M_{\text{Scent Only}} = 911.74, F(1, 113) = 6.72, p < .05$; $M_{\text{No Brand Cue}} = 1032.71$ vs. $M_{\text{Brand Name Only}} = 879.84, F(1, 113) = 9.61, p < .01$; $M_{\text{No Brand Cue}} = 1032.71$ vs. $M_{\text{Scent and Brand Name}} = 925.89, F(1, 113) = 4.90, p < .05$) (See Figure 5.3). As the faster reaction time infers a stronger connection between the brand cue and Johnson's Baby-specific meanings, the presence of brand cue(s) enables the transfer to be made with less effort compared to when no brand cue is present. Thus, Hypotheses H1b, H2b, and H4b predicting the efficacy of brand cues, including the signature scent, are supported.

Additional planned contrast test comparing the effects of Scent Only and Brand Name Only on implicitly transferring Johnson's Baby-specific reveals no significant difference between these conditions. In other words, the signature scent of Johnson's Baby is as effective as the brand name in transferring and retrieving these meanings from the cobranded towel ($M_{\text{Scent Only}} = 911.74$ vs. $M_{\text{Brand Name Only}} = 879.84, F(1, 113) = .56, p = .46$). This supports Hypothesis H3b, which predicts the efficacy of sensory signature as a brand cue comparable to brand name. The last planned contrasts compare the effects of Brand Name only (condition 3) and Scent and Brand Name (condition 4). The results revealed that the presence of two brand cues was not significantly different from the presence of the brand name in implicitly activating Johnson's Baby-specific brand meanings from the cobranded towel ($M_{\text{Brand Name Only}} = 879.84$ vs. $M_{\text{Scent and Brand Name}} = 925.89, F(1, 113) = 1.07, p = .30$). This finding does not support the Hypothesis H5b, which predicts the presence of both sensory signature and brand name is more effective in transferring the brand meanings compared to when brand name alone is present on a cobranded product. These effects of brand cues on implicit transfer of Johnson's Baby-specific meanings reflect the proposition developed under the Equal weight averaging model¹⁰ in

¹⁰ Refer to Section 3.2.3 Perspective 3: Equal Weight Averaging Model (Model 3).

Section 3.2.3. To reiterate, this model assumes that the importance or the weight of each information stimulus is the same so that the effect of brand name and sensory signature on meaning transfer would be the same. Thus, the result contends that both sensory signature and brand name are equally effective in retrieving Johnson's Baby-specific meanings no matter whether they are presented alone or presented together.

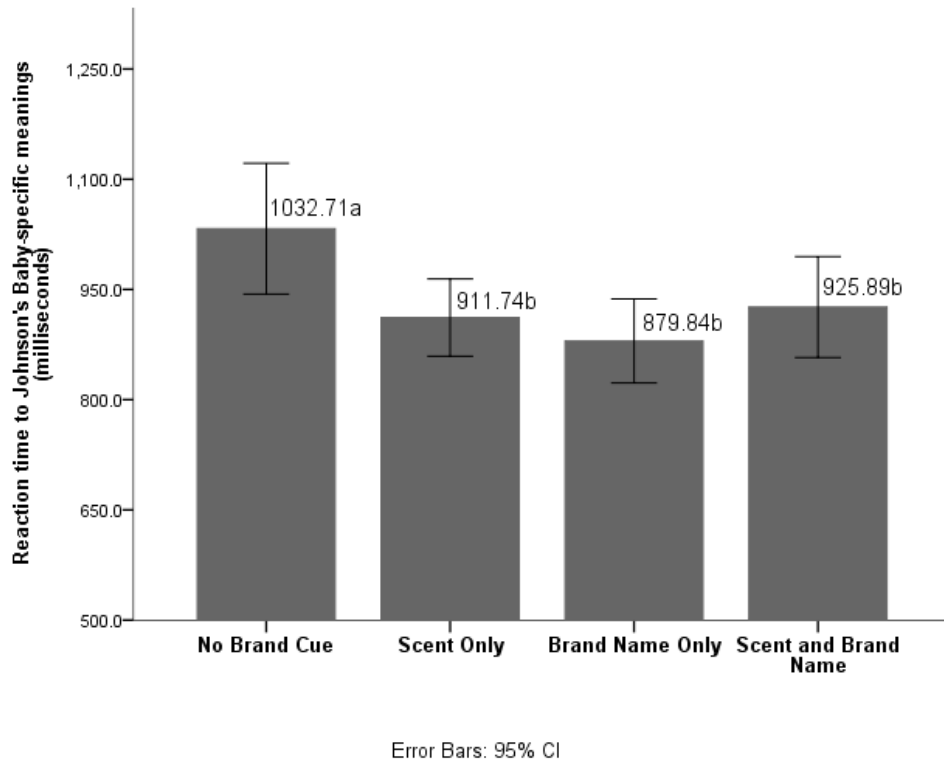


Figure 5.3. Reaction time to Johnson's Baby-specific meanings

5.1.6.2 Transfer of overlapping brand meanings

Johnson's Baby meanings that were identified to be overlapping with the characteristics of a towel (i.e., Calming, Natural, Relaxing, and Smooth) were combined and the grouping of those 4 meanings was found to be valid and reliable ($\alpha = .71$).

Explicit transfer of overlapping brand meanings

A marginally significant difference is observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 5.52$ vs. $M_{\text{Explicit measure first}} = 5.25$, $F(1, 115) = 3.45$, $p < .10$). No significant difference was observed between all four conditions when explicit measure was used ($F(3, 113) = .37$, $p = .77$), which implies that the overlapping meanings were not explicitly transferred from Johnson's baby to the cobranded towel (See Table 5.5).

Table 5.5: The effects of brand cue(s) on explicit attributes judgment of the overlapping brand meanings

	1	2	3	4
Experiment conditions	No Brand Cue	Scent Only	Brand Name Only	Scent and Brand Name
Mean (SD)	5.43 ^a (.81)	5.28 ^a (.93)	5.48 ^a (.83)	5.42 ^a (.69)
n	21	37	28	31

This result indirectly shows that the presence of Johnson's Baby-related brand cues do not contribute to the transfer of the meanings that are overlapping between Johnson's baby and the cobranded product category towel (See Figure 5.4). This occurred even though some of the overlapping meanings (i.e., calming, relaxing, and smooth) hold stronger associations with Johnson's Baby than some of Johnson's Baby-specific meanings. This implies that explicit activation of the overlapping meanings from the cobranded towel was not successful and thus, unless the brand meanings are specific to the ingredient brand, the transfer effect is unlikely to happen.

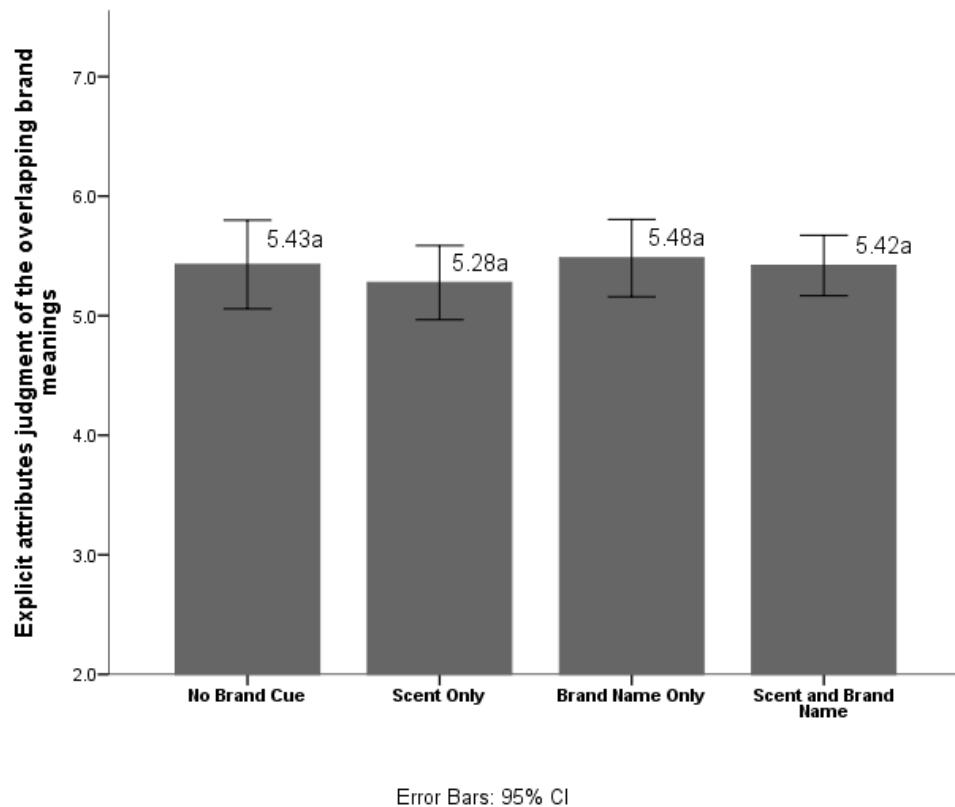


Figure 5.4. The explicit attributes judgment of overlapping brand meanings

Implicit transfer of overlapping brand meanings

The grouping of fur Johnson's baby and towel overlapping brand meanings (i.e., Calming, Natural, Relaxing, and Smooth) measured using implicit measure was found to be

valid and reliable ($\alpha = .70$). No significant difference was observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 905.50$ vs. $M_{\text{Explicit measure first}} = 918.36$, $F(1, 114) = .07$, $p = .80$).

While no significant difference is observed in explicit transfer of overlapping meanings, implicit transfer does occur when a brand cue is presented. Significant differences are observed across different techniques (i.e., all four of them except when all 'yes' responses to all four overlapping meanings were included) used for the analysis (See Table 5.6). Again, as when Johnson's Baby-specific meanings were transferred, the largest significant difference is observed when missing values are replaced with the average reaction time ($F(3, 111) = 3.58$, $p < .05$) level (See Table 4.2 in Appendix 4 for the details) (See Figure 5.5).

Table 5.6: The effects of brand cue(s) on reaction time of the overlapping brand meanings

	1	2	3	4
Experiment conditions	No Brand Cue	Scent Only	Brand Name Only	Scent and Brand Name
Mean	1027.77 ^a	816.90 ^b	818.28 ^b	854.46 ^b
(SD)	(434.49)	(198.96)	(209.00)	(177.74)
n	21	35	28	31

Note. Different subscripts represent significant means difference at least at the .05 level.

The results from the reaction time measure, however, is opposite to that found when explicit measures are used. This divergent finding demonstrates that under conscious, effortful processing of the transfer the overlapping meanings of brand name and sensory signature does not function as an effective brand cue, but they can yet implicitly transfer those meanings. Such implicit, effortless influence of a brand cue is considered crucial, as it has a greater impact than the explicit influence of brand cue on brand attitude (Gibson, 2008).

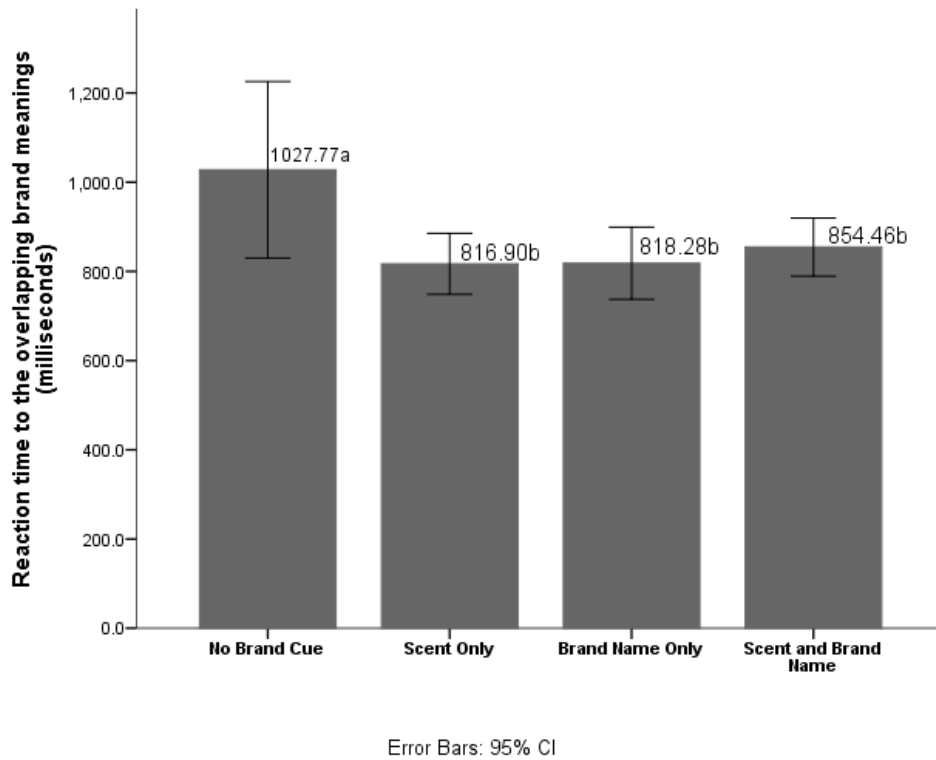


Figure 5.5. Reaction time to the overlapping brand meanings

5.1.6.3 Transfer of the towel-relevant brand meanings

The four Johnson's Baby meanings (i.e., Bath time, Clean, Pure, and Soft) were combined as they were classified as the meanings that were more closely related to a towel with low level of specificity to Johnson's Baby. This group of four meanings has $\alpha = .68$ which is less than .70 but it is still considered acceptable (Hair et al., 2010).

Explicit transfer of towel-relevant brand meanings

A significant difference can be observed due to the order of the two different types of measures used ($M_{\text{Implicit measure first}} = 5.92$ vs. $M_{\text{Explicit measure first}} = 5.54$, $F(1, 115) = 7.12$, $p < .01$). No significant difference, however, is noted between all four conditions when an explicit measure is used ($F(3, 113) = .16$, $p = .93$), which implies that the towel-relevant brand meanings were not explicitly transferred from Johnson's baby to cobranded towel (See Table 5.7). In other words, it implies that when brand meanings are considered to be more relevant to the characteristics of the cobranded towel than Johnson's Baby, those meanings are considered innate to the cobranded product, and are not necessarily considered transferred by the brand cue(s) representing the ingredient brand.

Table 5.7: The effects of brand cue(s) on explicit attributes judgment of towel-relevant brand meanings

	1	2	3	4
Experiment conditions	No Brand Cue	Scent Only	Brand Name Only	Scent and Brand Name
Mean (SD)	5.65 ^a (.90)	5.80 ^a (.75)	5.71 ^a (.85)	5.73 ^a (.74)
n	21	37	28	31

The ceiling effects observed in Figure 5.6 implies that for a cobranding strategy to perform effectively, resulting in favourable evaluation of a cobranding product, it is important to consider how brand-specific meanings are perceived by consumers. Thus, together with the results of the explicit transfer of Johnson's Baby-specific meanings and the overlapping brand meanings, Hypothesis H6a is supported. In other words, the impact of brand cues on explicit transfer of Johnson's Baby brand meanings is likely to be stronger, as the brand meanings are more specific to the ingredient brand.

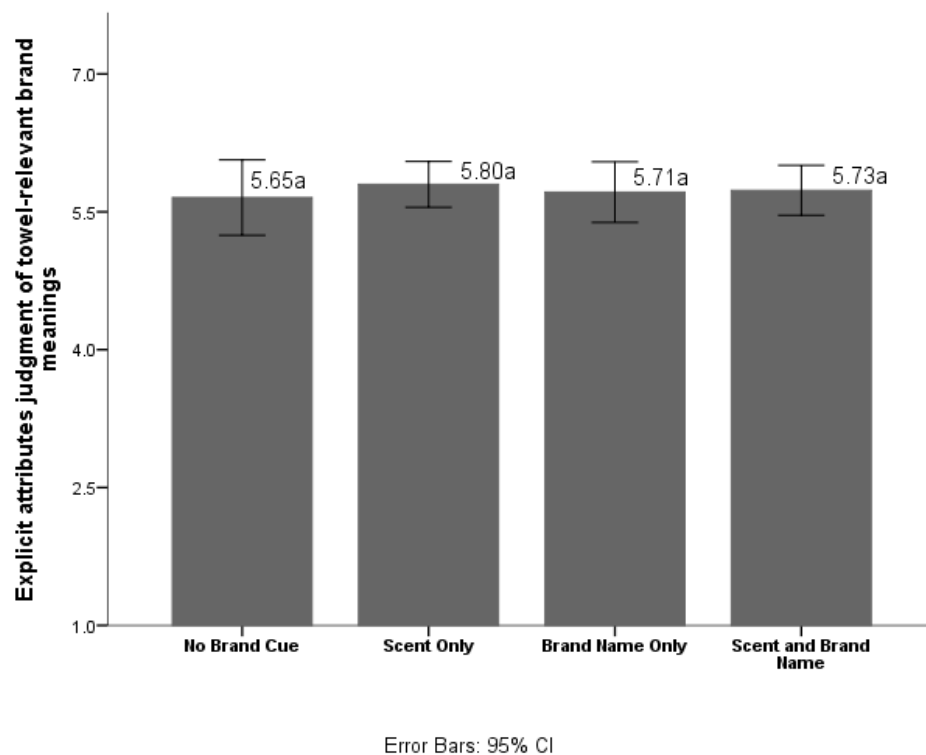


Figure 5.6. The explicit attributes judgment of towel-relevant brand meanings

Implicit transfer of the towel-relevant brand meanings

The grouping of four towel-relevant Johnson's baby meanings (i.e., Bath time, Clean, Pure, and Soft) measured using implicit measure are found to be valid and reliable ($\alpha = .74$). No significant difference due to the order of two different types of measures used exists (M_{Implicit}

measure first = 818.58 vs. $M_{\text{Explicit measure first}} = 804.82$, $F(1, 114) = .17$, $p = .68$). Again, no significant difference is present across different conditions, regardless of the type and number of brand cues used ($F(3, 112) = .93$, $p = .43$). (See Table 5.8)

Table 5.8: The effects of brand cue(s) on reaction time of the towel-relevant brand meanings

	1	2	3	4
Experiment conditions	No Brand Cue	Scent Only	Brand Name Only	Scent and Brand Name
Mean	862.23 ^a	799.77 ^a	780.52 ^a	822.84 ^a
(SD)	(175.03)	(168.55)	(156.58)	(203.91)
n	20	37	28	31

Note. The same subscripts represent there is no significant means difference among different conditions.

It is reasonable to assume that the towel-relevant brand meanings are relatively less indicative of Johnson's Baby compared to other Johnson's baby brand meanings, so that they seem to be perceived as more relevant to the towel rather than Johnson's baby, even implicitly (See Figure 5.7). Thus, together with the results of the implicit transfer of Johnson's Baby-specific meanings and the overlapping brand meanings, Hypothesis H6b is supported. In other words, the impact of brand cues on the implicit transfer of Johnson's Baby brand meanings is likely to be stronger, as the brand meanings are more specific to the ingredient brand.

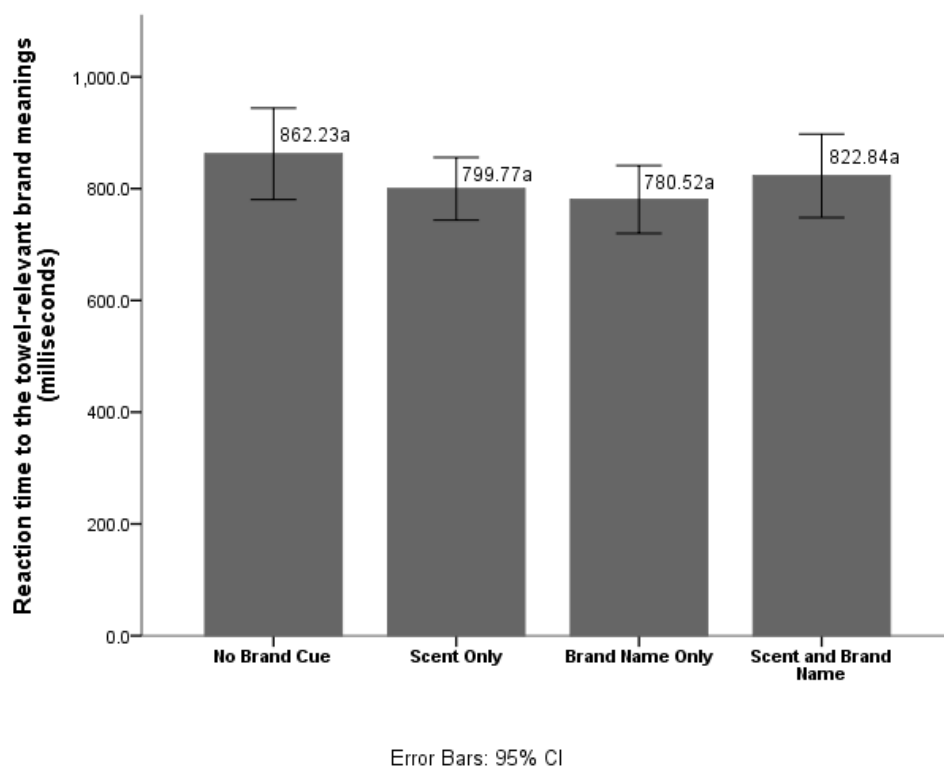


Figure 5.7. Reaction time to the towel-relevant meanings

5.1.7 Summary of Experiment 1 Results

Experiment 1 aimed to examine the efficacy of sensory signature as a brand cue by focusing on whether sensory signature can be an effective brand cue that is as diagnostic as brand name. The signature scent of Johnson's Baby exerts a significant influence implicitly and explicitly that is comparable to brand name in transferring the brand-specific meanings to a cobranded towel, even when the fit between the product categories is moderately incongruent. The findings should demonstrate the diagnostic nature of sensory signature as an effective brand cue. Subjects' explicit attribute judgements of overlapping and towel-relevant brand meanings demonstrate the ceiling effect, which shows the failure to better activate those meanings because participants perceive them to be strongly associated with the cobranded towel product. However, as there are no significant differences in terms of the activation of brand meanings between the 'no brand cue' condition versus the 'brand cue' condition, it is hard to argue that the presence of brand cue(s) transfer those brand meanings to the cobranded product. Thus, the signature scent of Johnson's Baby is found to be effective in transferring brand meanings to the cobranded product and its effects are found to be strong when the brand meanings are specific to Johnson's Baby. Table 5.9 below summarises the test of the hypotheses regarding efficacy of signature scent as an effective brand cue investigated in Experiment 1.

Table 5.9: Summary of hypotheses investigated in Experiment 1

Code	Hypotheses tested	Result
H1a	The explicitly-measured attribute judgments will be greater when signature scent alone is present on a cobranded product (C2) compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]	Supported
H1b	The reaction time measured for attribute judgments will be faster when signature scent alone present on a cobranded product (C2) compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]	Supported
H2a	The explicitly-measured attribute judgments will be greater when brand name alone is present on a cobranded product (C3) compared to when no brand cue is present on a cobranded product (C1): [C1 < C3]	Supported
H2b	The reaction time to implicitly measured attribute judgments will be faster when brand name alone is present on a cobranded product (C3) compared to when no brand cue is present on a cobranded product (C1): [C1 < C3]	Supported
H3a	When presented alone on a cobranded product, the impact of signature scent (C2) on explicitly measured attribute judgements is likely to be the same as the impact of brand name (C3) on a cobranded product: [C2 = C3]	Supported
H3b	When presented alone on a cobranded product, the impact of signature scent (C2) on reaction time used to implicitly measure attribute judgements is likely to be the same as the impact of brand name (C3) on a cobranded product: [C2 = C3]	Supported
H4a	The explicitly-measured attribute judgments will be greater when the signature scent and brand name are co-present on a cobranded product (C4) compared to when no brand cue is present on a cobranded product (C1): [C1 < C4]	Supported
H4b	The reaction time to implicitly measure attribute judgments will be faster when the signature scent and brand name are co-present on a cobranded product (C4) compared to when no brand cue is present on a cobranded product (C1): [C1 < C4]	Supported
H5a	The explicitly measured attribute judgments will be greater when the signature scent and brand name are co-present on a cobranded product (C4) compared to when only brand name is present on a cobranded product (C3): [C3 < C4]	Supported
H5b	The reaction time to implicitly measure attribute judgments will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when only brand name is present on a cobranded product (C3): [C3 < C4]	<i>Not Supported</i>
H6a	The impact of brand cues on meaning transfer effects explicitly measured by attribute judgements of cobranded product is likely to be stronger, when brand meanings are more specific to the ingredient brand.	Supported
H6b	The impact of brand cues on meaning transfer effects implicitly measured by reaction time of attribute judgements of a cobranded product is likely to be stronger, when brand meanings are more specific to the ingredient brand.	Supported

5.2 Experiment 2: The Route of the Meaning Transfer Process

Findings from Experiment 1 not only demonstrate that sensory signature cue can activate brand-relevant meanings but also verify its efficacy as an operable and effective brand cue. Both implicit and explicit attribute judgments of a cobranded product demonstrate successful meaning transfer effects driven by the sensory signature of Johnson's Baby scent. The ability of the signature scent of Johnson's Baby is not only found to be comparable to that of brand name cue but it also shows that when sensory signature and brand are presented together it creates synergistic effects, so that the transfer of brand meanings is conducted more effectively compared to when only a brand name is present.

Subsequent to these results, in Experiment 2 the efficacy of signature taste as a brand cue is examined. Section 5.2 is divided into seven subsections. I address the research objective and hypotheses in Section 5.2.1, and explain how the stimuli for the experiment was prepared I Section 5.2.2. I identify the participants and describe their characteristics in Section 5.2.3, introduce the materials and scales used in Section 5.2.4. Section 5.2.5. contains an explication of the procedure taken to conduct the experiment, whilst Section 5.2.6 contains the report of the results from the experiment. Lastly, the findings and the consequent opportunity for further experiment is discussed (Section 5.2.7).

5.2.1 Research Objective and Hypotheses

The purpose of Experiment 2 is twofold. First, is to re-examine the efficacy of a sensory signature, in this instance a taste rather than a scent signature. In addition, in Experiment 2 the transfer of semantic brand meanings is separately examined from perceptual brand meanings, so that it can be determined whether a sensory signature brand cue is strong enough to transfer indirectly associated, abstract, semantic, brand meanings. Second, using both perceptual and semantic brand meanings along with a path analysis, I will examine how these different types of brand meaning contribute to the meaning transfer process when a sensory signature (taste) is used as a brand cue.

Thus, this section first reviews the previous literature to demonstrate why a brand specific taste can work as sensory signature (Section 5.2.1.1). Next, I will discuss why perceptual and semantic brand meanings are used in this thesis and how this contributes to the understanding of the meaning transfer process. Based on this discussion, specific hypotheses are developed in Section 5.2.1.2, to assist examination of the efficacy of sensory signature, to determine its ability to transfer brand meaning, even semantic meaning, to a cobranded product. Finally, using perceptual and semantic brand meanings, the hypotheses predicting the route of meaning transfer process are developed; in Section 5.2.1.3, a path comparison is made between the situation where a sensory signature and a brand name is used as a brand cue.

5.2.1.1 Effectiveness of Taste as Sensory Signature

Certainly, it is difficult to accurately distinguish one taste from another, as our taste buds can detect only sweet, sour, salty, bitter and a newly discovered umami (Chaudhari, Landin, & Roper, 2000). Moreover, taste perception is most often influenced by cross-modal sensory interactions associated with eating (Auvray & Spence, 2008). For example, the visual appearance of foods, arranged on a plate or displayed in a visually more appealing way, influences not only the liking or acceptance of the food but also the amount of food consumed (see Wadhera & Capaldi-Phillips, 2014 for review). The background sounds a consumer hears while eating – such as music or the sounds of food being made – can influence taste perception for food and drinks, affecting certain characteristics of the foods (Spence & Shankar, 2010; Zampini & Spence, 2004). In addition, how the food smells can influence food consumption by way of enhancing taste (Auvray & Spence, 2008; Small & Prescott, 2005). Thus, development of taste perception also relies on inputs from other senses. Nonetheless, for any food or drink, the role of taste itself in acceptance and evaluation of a new food is critical and often overwhelming. For example, even though the durian is infamous with its powerful, and repulsive smell, because of its delicious, creamy taste the fruit has become the most popular and beloved fruit in the South East Asia (Guardian, 2014).

As the core value of a food item, taste of a product can help define what it is and what one thinks and remembers about the product. This is because, from an evolutionary perspective, taste recognition is one of the most important forms of memory for survival. For example, when animals experience a visceral malaise from food or drink, it is stored in their long-term memory so that later they can avoid a taste associated with that experience (Ferreira, Gutierrez, De La Cruz, & Bermúdez-Rattoni, 2002). Thus, people have naturally developed the ability to remember what certain foods taste like and the properties associated with those foods (Bermúdez-Rattoni, 2004). Moreover, the exposure to, or just thinking about, food can activate a simulation of food intake, which accompanies activation of related perceptions (Papies, Barsalou, & Custers, 2012). Even just reading food-related words (e.g., something is sweet) can elicit the same phenomenon by activating orbitofrontal cortex area of the brain, which is implicated in taste (Goldberg, Perfetti, & Schneider, 2006). Thus, just as a signature scent of Johnson's Baby did in Experiment 1, signature taste of brand is expected to have a diagnostic nature that can reach a whole range of brand meanings, not just those directly related to taste. Thus, in Experiment 2, I examine the effects of signature taste as a successful sensory signature of a brand used to transfer its meanings to a newly developed cobranded product.

5.2.1.2 Use of Perceptual Brand Meanings and Semantic Brand Meanings

Findings from Experiment 1 showed that the brand meaning-specificity constitutes a boundary condition for meaning transfer effects in a cobranding context. The more specific brand meanings are to the ingredient brand, the more effective is the transfer of brand meanings. In Experiment 2, I use a different categorisation of brand meanings; perceptual brand meanings and semantic brand meanings. Everyday information people perceive is multisensory

in nature, and items are interconnected with each other at both the perceptual and semantic levels (Calvert & Thesen, 2004; Chen & Spence, 2010; Martino & Marks, 1999, 2001). Even though both perceptual and semantic aspects of what people experience from a product may be distinguished conceptually (e.g., warm vs. gentle), these aspects are not isolated; thus perceptual and semantic meanings tend to be highly intertwined (Schifferstein, 2009). For example, consumers associate the shape of brand logo (i.e., a perceptual feature) with certain semantic properties; so that a round-shaped brand logo activates softness associations, whereas an angular-shaped logo creates associations of hardness (Jiang et al., 2016). Thus, it is reasonable to assume that perceptual and semantic brand meanings are woven together in such a way that perceptual meanings can influence the induction of semantic meanings. Thus, using both groups of perceptual meanings and semantic meanings, Experiment 2 will first examine whether the signature taste of a brand can function as sensory signature which can activate overarching brand meanings, even those of a semantic nature and, second, how meaning transfer processes operates.

Based on the discussion above, two different sets of hypotheses are developed. The first set focuses on the efficacy of a signature taste in comparison to brand name in terms of its ability to activate brand-related meanings. Favourable results will contribute by widening the scope of types of senses that can be used as a sensory signature of a brand (i.e., scent from Experiment 1 and taste from Experiment 2), and enhance the applicability of the grounded cognition perspective in a cobranding context. Thus, the first set of hypotheses are similar to the pattern of hypotheses in Experiment 1. I will compare control condition, in which no ingredient brand-related cue is present (C1), to a sensory signature only condition (C2), brand name only condition (C3), and the presence of both sensory signature and brand name condition (C4). The second set of hypotheses centres on investigating the path through which the meanings transfer when a sensory signature is used as a brand cue, and compares it to the path when a brand name is used as a brand cue.

i) Comparison between Control Condition (C1) and Signature Taste Only Condition (C2):

Re-experiencing the signature taste of a brand will be able to re-activate perceptual brand meanings that are directly associated with the taste. Even just reading the food-related word can activate taste-related brain region (Goldberg et al., 2006). Thus, it is hypothesised that:

H7: Exposure to signature taste alone on a cobranded product (C2) is more likely to result in greater meaning transfer effects measured by *perceptual attribute judgments*, compared to when no brand cue is present on a cobranded product (C1). Specifically:

H7a: The explicitly-measured *perceptual attribute judgments* will be greater when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]

H7b: The reaction time measured for *perceptual attribute judgments* will be faster when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C2]$

The taste of food can play a critical role in recollecting what people remember about the food. If the taste is distinctive and representative of a brand, then what can be retrieved from eating or drinking is not limited to perceptual meanings that are directly linked to the perceptual experience, but will also include those abstract, semantic brand meanings that are embedded in a perceptual brand experience. This is because cognitive thoughts are grounded in physical experience and, moreover, they are processed in the same modality-specific system(s) related to that experience (Barsalou, 1999, 2008). Thus, it is expected here that signature taste can work as an effective, brand-specific signal that can help individuals to access brand memory easily and thus to retrieve wide range of brand meanings. Therefore, it is hypothesised that;

H8: Exposure to signature taste alone on a cobranded product (C2) is more likely to result in greater meaning transfer effects measured by *semantic attribute judgments*, compared to when no brand cue is present on a cobranded product (C1). Specifically:

H8a: The explicitly-measured *semantic attribute judgments* will be greater when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C2]$

H8b: The reaction time measured for *semantic attribute judgments* will be faster when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C2]$

ii) Comparison between Signature Taste Only Condition (C2) and Brand Name Only Condition (C3):

From Experiment 1, the unique and distinctive characteristic of a sensory signature has been found to exert similar effects as brand name in its ability to transfer brand meanings and activate them from the cobranded product. Following the similar logic, “signatureness” of the taste will allow re-experience of the brand, which leads to the activation of overarching brand meanings.

First, before the comparison between the effects of signature taste and brand name is made, it is necessary to ensure that brand name is more effective in transferring both perceptual and semantic meanings. As a brand name contains a chunk of brand-related information (Richardson, Dick, & Jain, 1994), when used as a brand cue, it can activate overarching brand meanings. As perceptual and semantic brand meanings are obtained via

physical experiences of branded product, signifying brand name is expected to be enough to activate these meanings. Thus, it is hypothesised that;

H9: Exposure to brand name alone on a cobranded product (C3) is more likely to result in greater meaning transfer effects measured by *perceptual attribute judgments*, compared to when no brand cue is present on a cobranded product (C1). Specifically:

H9a: The explicitly-measured *perceptual attribute judgments* will be greater when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C3]$

H9b: The reaction time measured for *perceptual attribute judgments* will be faster when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C3]$

Similarly:

H10: Exposure to brand name alone on a cobranded product (C3) is more likely to result in greater meaning transfer effects measured by *semantic attribute judgments*, compared to when no brand cue is present on a cobranded product (C1). Specifically:

H10a: The explicitly-measured *semantic attribute judgments* will be greater when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C3]$

H10b: The reaction time measured for *semantic attribute judgments* will be faster when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C3]$

In terms of directly comparing the effect of signature taste (C2) and brand name (C3), it is expected that the signature taste will be more effective in activating perceptual brand meanings from cobranded product. As taste is directly associated with multiple sensory components (e.g., smell allows a consumer to distinguish wine from apple juice; Herz, 2007), experiencing signature taste is likely to accompany other sensory aspects associated with the ingredient brand, so that re-experiencing the signature taste will stimulate all the relevant perceptual features at the same time. In addition, as experience of these perceptual features immediately follows every taste experience, there should exist a strong tie between them. As the strength of associations between brand cue and the outcomes depends on the amount of information encoded in the relationship (Keller, 1993), it is predicted that signature taste is more likely to activate perceptual brand meanings than semantic brand meanings from a cobranded product. Thus, it is hypothesised that;

H11a: The explicitly-measured *perceptual attribute judgments* will be greater when signature taste alone is present on a cobranded product (C2), compared to when only brand name is present on a cobranded product (C3): [C2 > C3]

H11b: The reaction time measured for *perceptual attribute judgments* will be faster when only signature taste is present on a cobranded product (C2), compared to when only brand name is present on a cobranded product (C3): [C2 > C3]

In the case of semantic meanings, brand name may be more effective than signature taste at inducing semantic brand meanings from the cobranded product. Throughout the literature, it has been consistently found that extrinsic brand cues, such as brand name, can influence taste perception, implying that brand attributes associated with brand name are not only extensive but some of them are also more strongly associated with the brand so as to influence taste experience. For example, Allison and Uhl (1964) show that subjects' rating of the characteristics of taste of beer (e.g., strength, sweetness, or bitterness) are not different in a blind test where they could not distinguish the brands, but the ratings are higher for their favourite brands when the beers are labelled. In other words, information obtained from other than the taste can be more dominant than basic perceptual information such as sweet or bitter. Similarly, Hoegg and Alba (2007) show that a national orange juice brand received a better taste evaluation than a store brand, reflecting the expectation that national brand would use better oranges than store brand. These findings demonstrate that brand name is comprised of different attributes of the brand, and often the features other than those with perceptual nature are more strongly associated with brand name so as to override the effects of the taste. As semantic meanings are generally acquired through relatively indirect sources, such as advertisements of the brand, compared to direct taste experience, brand name is likely to be more strongly associated with semantic meanings compared to perceptual meanings. Brand name is seen more often with semantic features in advertising (e.g., In advertisements Red Bull places more emphasis on its semantic attributes, such as being energetic, rather than on its taste). Moreover, as brand name is unambiguous compared to a sensory signature, the former will be able to activate the associated meanings more easily, even those brand name that are not directly associated with the taste experience. Thus, it is hypothesised that;

H12a: The explicitly-measured *semantic attribute judgments* will be greater when brand name alone is present on a cobranded product (C3), compared to when signature taste alone is present on a cobranded product (C2): [C2 < C3]

H12b: The reaction time measured for *semantic attribute judgments* will be faster when brand name alone is present on a cobranded product (C3), compared to when signature taste alone is present on a cobranded product (C2): [C2 < C3]

iii) Comparison between Brand Name Only Condition (C3) and presence of both Sensory Signature and Brand Name Condition (C4):

Before making comparison between the effects of brand name (C3) and the presence of both brand name and sensory signature (C4), it is necessary to ensure that the two brand cues condition is more effective in transferring, and thus activating target brand-relevant meanings, from a cobranded product than is the control condition (C1). Even though Experiment 2 aims to examine the transfer of different types of brand meanings (i.e., categorisation based on direct vs. indirect perceptual brand experience), from Experiment 1 (i.e., categorisation based on level of brand specificity), the way brand cues activate and transfer those brand meanings to the cobranded product is based on a similar approach.

While brand name and sensory signature are expected to be more effective in activating semantic meanings and perceptual meanings respectively, because of the nature of the information encoded, co-presentation of them is still expected to function as an effective brand cue. As brand memory consists of a network of brand information that is interconnected via associative links, stimulating any brand cue can activate a wide array of brand meanings via these links. For example, sensory brand information is stored in consumer memory along with other brand-related cognitive concepts, and stimulating sensory signature is expected to lead to the activation of all the corresponding brand attributes, not just perceptual or semantic meanings. Thus, the hypotheses below propose that when two effective brand cues (sensory signature and brand name) are presented together on a cobranded product, they produce synergistic effects such that the transfer of brand meanings is likely to be more effective than when only brand name is present on the cobranded product, no matter whether the transferred brand meanings are perceptual or semantic.

H13: Exposure to the co-presence of signature taste and brand name on a cobranded product (C4) is more likely to result in greater meaning transfer effects measured by *perceptual attribute judgments*, compared to when no brand cue is present on a cobranded product (C1). Specifically:

H13a: The explicitly-measured *perceptual attribute judgments* will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C4]$

H13b: The reaction time measured for *perceptual attribute judgments* will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C4]$

Similarly:

H14: Exposure to the co-presence of signature taste and brand name on a cobranded product (C4) is more likely to result in greater meaning transfer effects measured by

semantic attribute judgments, compared to when no brand cue is present on a cobranded product (C1). Specifically:

H14a: The explicitly-measured *semantic attribute judgments* will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C4]$

H14b: The reaction time measured for *semantic attribute judgments* will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): $[C1 < C4]$

As signature taste and brand name are processed by the different modalities of gustatory and vision, they are processed using different attentional resources, so that their effects on transfer of brand meanings will not interfere with each other. Moreover, as the nature of how information is encoded can influence the strength of association (Keller, 1993), perceptual brand experience via sensory signature can be better encoded and remembered, contributing to enhancing or adding onto the brand name's accessibility to memory. Thus, co-presence of brand name and sensory signature on a cobranded product may produce synergistic effects so that consumers can access brand memory more easily, resulting in activation of more meanings on cobranded product compared to when only brand name is present, regardless of whether they are perceptual or semantic. Thus, it is hypothesised that;

H15: Exposure to the co-presence of signature taste and brand name on a cobranded product (C4) is more likely to result in greater meaning transfer effects measured by *perceptual attribute judgments*, compared to when only brand name is present on a cobranded product (C3). Specifically:

H15a: The explicitly-measured *perceptual attribute judgments* will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when only brand name is present on a cobranded product (C3): $[C3 < C4]$

H15b: The reaction time measured for *perceptual attribute judgments* will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when only brand name is present on a cobranded product (C3): $[C3 < C4]$

Similarly:

H16: Exposure to the co-presence of signature taste and brand name on a cobranded product (C4) is more likely to result in greater meaning transfer effects measured by *semantic attribute judgments*, compared to when only brand name is present on a cobranded product (C3). Specifically:

H16a: The explicitly-measured *semantic attribute judgments* will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when signature taste alone is present on a cobranded product (C3): [C3 < C4]

H16b: The reaction time measured for *semantic attribute judgments* will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when signature taste alone is present on a cobranded product (C3): [C3 < C4]

Taken together, Hypothesis 7 to hypothesis 16 constitute the first set of hypotheses regarding the prediction about the efficacy of signature taste as an effective driver of meanings transfer, and strongly resemble those hypotheses in the earlier, scent, experiment. In the next section, using perceptual and semantic brand meanings again, I predict how the process of meaning transfer will occur.

5.2.1.3 The Proposed Route of Meaning Transfer Process

This section provides additional predictions regarding how brand meanings are transferred in a cobranding context, in a way that influences consumer attitude toward the cobranded product. As Barsalou (2008) has made clear, grounded cognition and classic cognitivist views, such as the associative network model, can work together to create cognition. Thus, the way the bodily states influence conceptual processing can be jointly explained by integrating different perspectives. Classic cognitivists believe that sensory stimuli will not activate abstract concepts, as they assume that semantic information is processed dissociated from the brain region related with the processing of different senses (Tulving & Schacter, 1990). However, empirical evidence exists in the extant research demonstrating that physical experience functions as a priming cue. Modal Priming is one such mechanism, assuming that bodily experiences can function as effective primes, which activate the associated semantic concept via spreading activation (IJzerman & Koole, 2011; Landau, Meier, & Keefer, 2010; Zhang & Li, 2012). For example, Zhang and Li (2012) have found that the effect of carrying a heavy weight on eliciting the psychological concept, "importance," is fully mediated by weight-related concepts such as "heavy."

Some might argue that the link between sensory signature and semantic brand meanings proposed in the thesis does not square with conceptual metaphor effects mentioned above. However, in a broad sense, they share a common underlying assumption that body and mind are interconnected, such that people's earlier bodily experiences are the building blocks to understand abstract concepts. For example, the psychologically 'warm' feeling is scaffolded onto the sensations of physical warmth, such that holding a warm cup may simultaneously cue the processing of both physical warmth and the warmth-related concepts via associative links between them (Ackerman et al., 2010; Williams et al., 2009). Thus, modal priming via spreading

activation is also suitable to account for such an effect, and thus can be used as an underlying process of meaning transfer when sensory signature is used as a brand cue. Specifically, the correlation between physical experience and semantic meanings is expected to be mediated by the activation of perceptual meanings which are directly associated with sensory signature. This is because perceptual brand meanings are more strongly linked to the physical experience itself. Thus, the presence of a sensory signature cue on a cobranded product may enhance access to salient perceptual brand meanings which they may activate semantic brand meanings. Therefore, it is hypothesised that;

H17a: The impact of signature taste on cobranded product attitude will be indirectly mediated by activation of perceptual brand meanings and then semantic brand meanings associated with the target brand

Extant research examining factors influencing taste perception has consistently demonstrated that external sources, other than those intrinsic to the product itself such as brand name, advertising or word-of-mouth, influence the taste experience (e.g., Elder & Krishna, 2010; Lee, Frederick, & Ariely, 2006; Raghunathan, Naylor, & Hoyer, 2006). According to Lee, Frederick and Ariely (2006, p. 1054), such perceptual experience is under the influence of “bottom-up processes, which reflect characteristics of the stimulus impinging on the perceiver’s sensory organs, and top-down processes, which reflect the perceiver’s beliefs, desires, and expectations.” These processes may operate simultaneously. In assuming a joint influence, Lee and colleagues (2006) take an example of Jastrow’s rabbit-duck illusion (see Appendix 3 for Jastrow’s rabbit-duck image). People might just see what is in the image, but, at the same time, what they visually experience may be affected by their prior knowledge or expectation, for example, what a duck should look like. Or, both processes may operate separately. For example, participants evaluate mineral water more negatively when they drink from a low quality flimsy cup rather than a firm cup – this is a bottom-up process; but they are willing to pay a higher price for bottled water described to be sold in a firm and not a flimsy bottle (i.e., a top-down process) (Krishna & Morrin, 2008). In particular, when an extrinsic cue such as brand name is used, a more deliberative top-down processing mode is expected to operate, as this cue will influence what people can expect from the product, and extant research demonstrates that the conceptual information influences subjective perceptual experience. For example, both behavioural taste test and fMRI results demonstrate that brand knowledge biases preference (i.e., Coke is rated higher over Pepsi for preference in a brand-cued condition) while no preference exists in the anonymous task (McClure et al., 2004). In addition, seeing ‘soy label’ on the package negatively influenced the taste perceptions and attitudes in such a way as to lead people to rate the product as grainy and less flavourful compared to the product without a soy label (Wansink, Park, Sonka, & Morganosky, 2000). Therefore, it is expected that the brand name will activate prior knowledge accumulated via external sources, which will influence taste experience. Thus, it is hypothesised that;

H17b: The impact of brand name on cobranded product attitude will be indirectly mediated by activation of semantic brand meanings and then perceptual brand meanings associated with the target brand.

To summarise, Experiment 2 aims to investigate how perceptual and semantic brand meanings associated with Red Bull transfer to a cobranded product. Particularly, the efficacy of signature taste and brand name are compared in terms of the effectiveness of meanings transfer.

5.2.2 Stimulus Development

This section describes the method used to select brand meanings to be used in this experiment for efficacy of the signature taste of Red Bull. Specifically, it illustrates how perceptual and semantic Red Bull-related brand meanings are categorised to be used in Experiment 2 (Section 5.2.2.1), the procedure used to identify the product category for a partner brand of Red Bull, and to select a fictitious name to be used for the partner brand (Section 5.2.2.2). Section 5.2.2.3. contains a description of how the cobranded product (a lolly) was prepared.

5.2.2.1 Pre-test (1): Identification of brand meanings associated with Red Bull

In order to obtain a complete list of Red Bull-related brand meanings, this pre-test adopted the same modified Multi-Sensory Sculpting (MSS) method and its procedure¹¹ used in Experiment 1 for identification of Johnson's Baby-related meanings. Simply put, this modified MSS method consists of two phases; the selection of materials representing what Red Bull means to subjects and the follow-up semi-structure interview elucidates the meanings associated, using the materials chosen from the sensory toolkit. The sensory toolkit used in this pre-test was also the same as the one used in Experiment 1. This sensory toolkit contains various materials that can stimulate touch, taste, smell, hearing, and vision. This is because when placed in an environment in which all five senses can be stimulated, people can easily recall brand-related information (Krishna, 2010). In the interview, participants are asked questions such as why certain materials are selected, and how they represent Red Bull. This modified MSS method provides a basis for the generation of verbal and non-verbal brand-related metaphors which are accumulated from conscious and unconscious perceptual brand

¹¹ The only difference in the procedure was that participants were not asked to write down the product categories they associate with Red Bull. This was because Red Bull clearly represents energy drinks. Refer to Section 5.1.2.1 for detailed modified MSS method and its procedure.

experiences. This pre-test was approved by the Auckland University of Technology Ethics Committee on 10 August, 2015 (AUTEC reference number 15/278).

22 participants (Female = 50.00%, $M_{age} = 25.7$) were recruited from undergraduate and postgraduate students attending AUT university. The general procedure and the sensory toolkit used for this pre-test were the same as those used for Experiment 1. This pre-test was conducted individually in a small, quiet room and the completion of the test took, on average, 20 to 30 minutes per participant. After completing the experiment, participants received a \$10 Westfield voucher to compensate for their time. First, the participants explored the materials in the sensory toolkit. The Participants were then asked to select the materials that represent what Red Bull meant to them. The semi-structured interview asking the reasons of their selection of the materials followed. Lastly, the participants filled out the demographic information of age and gender.

The interview data was analysed using qualitative data analysis software QSR NVivo version 10. Following von Wallpach and Kreuzer (2013), the most frequently appearing meanings expressed through verbal and non-verbal metaphors were identified. From the analysis, thirty-five Red Bull-related meanings are identified. The unit of analysis is Red Bull brand attributes. First, any attributes that were mentioned in relation to the materials from the sensory toolkit were identified, which resulted in a total of 23 attributes.

Then, based on the interpretive coding of those attributes and how broadly they are linked to different senses, Red Bull-related brand meanings were broadly categorised into perceptual and semantic meanings. Semantic meanings are more abstract in nature and focus more on social, introspective and affective information, while perceptual meanings focus more on perceptual information. Thus, the brand meanings to be used in Experiment 2 were selected based on the number of times the specific meaning was mentioned and how many senses were used to represent that meaning. Particularly, in terms of the perceptual Red Bull meanings, sourness was included as sweetness is a prevalent feature of other soft drinks, such as Coca Cola or Sprite. Fizzy is also often found with other soft drinks, but this characteristic was mentioned more than 30 times so it was included as one of the perceptual brand meanings. (See Table 5.9).

Table 5.10: Categorisation of Red Bull-related meanings

Types of Meanings	Selected Red Bull-related meanings
Perceptual meanings	Distinctive flavour (9), Distinctive scent (7), Fizzy (32), Sour (4)
Semantic meanings	Caffeine (46 via 3 senses which are sound, scent, and touch), Energetic (51 via all 5 senses), Exciting (36 via sound, vision, touch), Sports (43 via all 5 senses)

5.2.2.2 Pre-test (2): Partner category and fictitious partner brand name selection

Product category selection The next task was to select the partner product category that can make a plausible cobranded product in combination with Red Bull, which is an energy drink. Since the purpose of this experiment is to examine whether the signature taste of Red Bull can transfer brand meanings, the product category for a cobranded product should be something edible. Importantly, any additional ingredient required, or the process of making the cobranded product, should not distort the taste of Red Bull. Lastly, since the cobranded product to be used in the experiment was to be made by the researcher herself, products that requires a complicated manufacturing process were excluded from the potential cobranded product list.

66 undergraduate students at AUT university (Female = 71.2%, $M_{age} = 20.1$) participated. They were the same group of participants who participated in the selection of product category for Johnson's Baby. The four product categories proposed were marshmallows, lollies¹², jellybeans and candy. Participants were asked to rate what they think of the match between Red Bull and the product category proposed if they were combined into a single product (1 = poorly matched, 7 = well matched). Lollies showed the highest match with Red Bull ($M = 4.61$), followed by candy ($M = 4.08$), jellybeans ($M = 3.71$); marshmallow was found to be poorest-fitting with Red Bull ($M = 2.15$). Thus, the product category lollies was selected as a partner product category.

Partner brand name selection Three different fictitious brand names (i.e., Powell, Baren, and Albanese) were proposed for the lolly product. They were drawn from a focus group discussion with six postgraduate students at AUT university (Female = 66.77%, $M_{age} = 24.7$) and the researcher's search of lolly brand name via internet. In the focus group discussion, the participants were asked to brainstorm the brand names that might be suitable for a lollies brand. The brand name Powell resulted in from the focus group discussion, and Baren and Albanese were the names of brand/store of lollies/sweets found from the search from internet.

55 undergraduate students at AUT university (Female = 63.6%, $M_{age} = 22.2$) participated, and they rated their familiarity with the brand names on one item using a 7-point scale (1 = unfamiliar, 7 = familiar), and their attitude toward these brand names on three items using a 7-point scale (1 = negative / unfavourable / bad, 7 = positive / favourable / good). The grouping of these 3 meanings was found to be valid and reliable ($\alpha_{Powell} = .95$, $\alpha_{Baren} = .99$, and $\alpha_{Albanese} = .99$). Lastly, they were asked whether the brand name reminded them of anything, and if yes, then to indicate what. All the names were found to be unfamiliar ($M_{Powell} = 1.48$ vs. $M_{Baren} = 1.39$ vs. $M_{Albanese} = 1.35$) and neutral in liking ($M_{Powell} = 3.83$ vs. $M_{Baren} = 3.66$ vs. $M_{Albanese} = 3.68$). the brand name Powell was finally selected, on the basis of being neutral ($M = 3.83$) and unfamiliar ($M = 1.48$); also some participants indicated that the *Baren* name reminded

¹² In New Zealand, lollies refer to a category of gelatine-based, chewable product, such as soft wine gums or gummies.

them of word “barren,” which means infertile or sterile, and the *Albanese* name reminded them of a specific country, Albania.

5.2.2.3 Pre-test (3): Preparation of the cobranded product

Preparation of Red Bull lolly Based on the results from pre-test (1) and pre-test (2) above, a Red Bull-taste lolly branded as “Powell” was determined as a suitable cobranded product for the experiment. As this experiment manipulates the presence of Red Bull-taste in lollies, two different types of lollies were required; one with and one without a Red Bull taste. The Red Bull-tasting lolly was made of gelatine powder and Red Bull. First, in order to remove the fizziness, the Red bull container was left open for 24 hours. Next, 4.5 tablespoons of gelatine powder and 425ml of Red Bull were combined, mixed, and then melted in a microwave for 2 minutes. Then, this was poured into a mould and left in a fridge for at least 3 hours. A small 12-cup silicone muffin mould was used. For the non-Red Bull taste lollies, 4.5 table spoons of gelatine powder, and 3.5 table spoons of sugar, 315ml of water, and 1ml of yellow food colouring were combined and went through the same procedure. The drop of yellow food colouring was added in to match the colour of the Red Bull lollies. Disposable gloves were worn during the whole procedure for hygienic purposes.

Reliability of signature scent of Red Bull lolly It was necessary to examine whether the lolly made from the above recipe tasted the same as Red Bull drink. Eight postgraduate students at AUT University (Female = 75%, $M_{age} = 30.13$) assisted. First, participants cleaned their mouth with a sip of water and then they tasted one lolly each. They did not need to finish the whole thing but were required to have enough to feel confident to answer the questions in the survey. They indicated their attitude toward the taste of the lolly on three items, using a 7-point scale (1 = very unpleasant / do not like at all /not at all familiar, 7 = very pleasant / like a lot / very familiar; $\alpha = .95$), and the liking of the taste on three items using a 7-point scale (1 = very unpleasant / do not like at all /not at all familiar, 7 = very pleasant / like a lot / very familiar; $\alpha = .87$). They were then asked to rate the specifics related to the lolly, such as sweetness and sourness on one item each using a 7-point scale (1 = not at all, 7 = very much). Next, they rated how much they like lollies in general on one item using a 7-point scale (1 = not at all, 7 = very much). Participants were also asked to indicate whether the taste reminded them of any brand and, if yes, then to write down the brand name. Those who wrote down any brand names were asked to indicate how confident they were with their guess of the brand name on the scale of 0 to 100 (0 = not at all, 100 = very much). Then, participants rated how familiar they are with the taste of Red Bull on one item using a 7-point scale (1 = not at all, 7 = very familiar). Lastly, they indicated their gender and age.

Participants indicated a neutral attitude toward lollies in general ($M = 4.25$), and, for Red Bull lolly, their liking of the scent ($M = 4.46$) and the taste ($M = 4.17$) were also neutral. They also answered that the lolly was more sour than sweet but it was not significantly different to the drink ($M_{sour} = 3.38$ vs. $M_{sweet} = 3.00$; $t(7) = .6$, $p = .57$). Participants indicated that they are

familiar with the taste of Red Bull ($M = 5.25$) and five out of eight students were able to correctly associate the taste of the lolly with Red Bull (62.5%) with 84.6% confidence with their choice of the brand name. Thus, it seemed that the Red Bull lolly as prepared was suitable to be used in the experiment.

The main experiment which follows next was approved by the Auckland University of Technology Ethics Committee on 9 May, 2016 (AUTEC reference number 16/61).

5.2.3 Participants

Initially, 176 undergraduate students at AUT university participated in the experiment. It was conducted across nine workshop classes organised for the students enrolled in level 6 (i.e., second-year BBus) papers. Because participants being aware of the purpose of the experiment could distort the outcomes of the indirect measure, the information about the purpose of the study provided was slightly changed, as in the previous set of experiments. As each participant only received one experimental manipulation the chance for a participant being aware of the experimental task was reduced. Detailed description of how the students were recruited and participated in the experiment are provided in section 5.2.5, "Procedure."

Similar to Experiment 1, there was a deviation in number of participants across different conditions as only one web script of reaction time measure could be utilised at a time (The details of the software program used for the reaction time measure (Inquisit from Millisecond) and how it was utilised in the experiment are already described in detail earlier, in section 5.1.4.1 above. Section 5.2.4.2 "Dependent measures" will be a brief reiteration of the explanation in section 5.1.4.2. Thus, students in the same workshop were assigned into the same condition. That is the reason why unequal number of participants are assigned to the experimental conditions. However, the assignment of workshop into the experimental condition was, again, performed randomly.

Eleven participants were excluded during the analysis because they did not complete the survey. So, the responses from 165 undergraduate students (Female = 65.3%, $M_{\text{age}} = 20.68$) were used in the analysis. The actual sample size used for the analysis is larger than the desired sample size ($N = 128$) suggested by G*Power 3 (Faul et al., 2007). Thus, I expect that the findings will have sufficient power to be provide statistical reliability.

5.2.4 Materials and Scales

5.2.4.1 Stimulus material presentation

The lollies were made following the recipe explained in section 5.2.2.3, "Preparation of cobranded product." As a small muffin mould was used, they had the shape of a cone with the

top half removed. The top of the lolly was 3cm in diameter, the bottom was 5cm in diameter, and the height 1cm. Each lolly was individually wrapped with plastic wrap and presented to the participants contained in a glass jar with a different brand names (depending on condition). The brand names were printed on opaque paper and wrapped around the jar. The height of the paper band was about one third of the glass jar, and the brand names were printed on the middle. The fonts of Red Bull brand name printed on the band is exactly the same as the one shown on actual Red Bull. Figure 5.8 below illustrates how the lollies were presented to participants when the presence of brand name was manipulated.



Without Red Bull Brand name



With Red Bull Brand name

Figure 5.8. The presentation of cobranded product lolly

To reiterate, in No Brand Cue and Taste Only condition, only the fictitious lolly brand name Powell was present while Brand Name only and Taste and Brand Name condition had both Red Bull and Powell presented with the lollies. Lollies with Red Bull taste were only given to participants in Taste Only and Taste and Brand Name condition, and the lollies in two other conditions had only the sweet taste from sugar.

5.2.4.2 Dependent measures

Previously, in section 5.2.2.1, Red Bull-relevant meanings to be used in this experiment were identified and classified based on whether they are perceptual or semantic. The dependent measures were used to examine whether these Red Bull meanings could be activated on cobranded product when the signature taste of Red Bull was used as a cue for the transfer of its brand meanings.

Explicit meaning transfer measured using explicit measure

When the explicit measure was used, Red Bull-relevant meanings (i.e., Distinctive scent, Distinctive taste, Fizzy, Sour, Caffeine, Energetic, Sports, Exciting) were presented in a

random order asking participants to indicate the extent to which each meaning was associated with a cobranded lolly, using a 7-point Likert type scale (1 = Strongly disagree, 7 = Strongly agree). A higher score indicates that a cobranded lolly is associated with the meaning of Red Bull. In addition, Participants were asked to indicate their liking of the cobranded lolly using three items on a 7-point scale (1 = bad / boring / unfavourable, 7 = good / interesting / favourable; $\alpha = .81$) (See Appendix 8 for the survey questions used in Experiment 2).

Implicit meaning transfer measured using reaction time measure

The same simple reaction time measure used in Study 1 was also used in this experiment. Therefore, the way the task was organised and conducted was the same as in Study 1; the participants were exposed to the target brand name, Red Bull, for 750 milliseconds, then the brand was replaced with one of the meanings from the list of brand meanings (including both filler meanings and Red Bull-relevant meanings). Participants were instructed to press, as rapidly as possible, either a key for 'yes' or 'no' depending on whether the meaning appeared describes Red Bull or not. The reaction time was measured using Inquisit Web software by Millisecond 9 version 4.0) (2014). The shorter time taken to answer either yes or no indicates stronger association between the cobranded lolly and the meaning of Red Bull. The order of presentation of the meanings was randomised to avoid any bias from order effects (Till et al., 2011). The position of 'yes' and 'no' was also randomised. Filler meanings were also added in the questionnaire for the implicit measure. The filler meanings used were Bath time, Clean, Calming, Caring, Pink, Mum, Warm, Natural, Soft, Baby. The brand meaning appeared on the screen remained until a participant responded to the question.

The way stimuli were presented employed a 2 (signature taste: present vs. not present) by 2 (Red Bull brand name: present vs. not present) by 2 (order of measurement presentation: explicit measures first vs. implicit measure first) mixed design with the first two as between-subjects factors and the last one as a within-subject factor.

5.2.5 Procedure

As mentioned previously, in section 5.2.3 "Participants," the data collection was conducted across nine workshops organised for Level 6 marketing papers at AUT university. The students participate in one three-hour workshop per week. The workshops were conducted in a compact classroom with six round tables. These tables could accommodate up to seven students and have six laptop computers placed within each table. Thus, participants can participate in the implicit measure survey using them, but they could also use their own laptop if they wished.

At the beginning of the workshop, the researcher briefly explained what the experiment was about – to understand what consumers might think of the new lollies – and invited them to participate in the experiment. During the introduction they were shown a glass jar containing and labelled with either lollies named Powell or cobranded lollies by Red Bull and Powell,

depending on the experimental condition (see Figure 5.8 above). At the end of the introduction, participants were warned that if they are allergic to any food ingredients, or were feeling unwell, then they must not participate in the experiment, as the experiment involves eating a lolly. They were then given a consent form to sign. The researcher walked around the room with the jar open and brand name band wrapping the jar facing participants, and only those who wanted to participate picked a lolly from the jar themselves. When all the participants were ready, they tasted the lolly and also were told to take enough time to savour the taste. Once they were done with the tasting, they could start to answer the surveys. The participants were told not to discuss or talk to each other while tasting the lolly and answer the survey.

As for Experiment 1, the survey using an explicit measure was created online using Qualtrics and the one employing an implicit measure was created using Inquisit Web software (version 4) by Millisecond (see Table 6.1 and 6.2 in Appendix 6 for the demonstration of reaction time measure). For each workshop, half of the participants conducted the explicit survey first, while the other half completed the implicit survey first. The class was split into two groups depending on which side of the room they sat, and then each group was given a different link to either survey. As before, those who completed the implicit measure survey first were automatically redirected to the explicit measure, but because of a technical issue participants who completed the explicit measure survey first had to type in the link to the explicit measure survey themselves. At the end of the experiment, participants completed demand assessment questions by indicating whether there were any factors that influenced their rating of the product. First, the participants were asked to select either yes or no to the question “You rated the product in the way you thought the experimenter wanted you to rate them.” Then, three additional questions aimed at discovering if the participants were aware of the purpose of the experiment were asked, following funnelled debriefing technique. The questions were “In your opinion, what was the purpose of this study?” “During the study, did you ever had a thought that its purpose might be something other than you were told? If so, when did this occur to you, and what were you thinking?” Finally, “Did you notice anything specific in the presentation of the product? If so, please describe what struck you as remarkable.” Then, in order to prevent any confusion that might be caused by switching between the two different survey platforms, at the end of each survey the participants were asked to type in the last four digits of his/her student ID number. Lastly, the participants completed demographic questions asking their gender and age.

5.2.6 Results

The way stimuli were presented employed a 2 (signature taste: present vs. not present) by 2 (Red Bull brand name: present vs. not present) by 2 (order of measurement presentation: explicit measures first vs. implicit measure first) mixed design with the first two as between-subjects factors and the last one as a within-subject factor. The analyses of the data, however, was conducted in the context of an omnibus ANOVA F-test, as the hypotheses developed focus on comparing the effects of sensory signature taste of Red Bull with other conditions, either in

isolation or in combination with a brand name. Among those who answered that they evaluated the product in the way that they thought the experimenter wanted them to, no one correctly guessed the purpose of the experiment.

5.2.6.1 Transfer of perceptual brand meanings

Appropriateness of the sample size to assess the meanings transfer

The number of students who participated in this experiment was 176, but some of them completed only one of either the explicit or implicit measure survey. Thus, the actual number of participants included in the analysis of the transfer of Red Bull-relevant perceptual brand meanings is 165 for the measurement of explicit meanings transfer and 138 for the implicit meanings transfer. In both cases, the sample size is enough to have sufficient power ($1 - \beta > .80$) of the statistical findings, as they have a high effect size f of .47 for explicit meaning transfer and medium effect size f of .36 for implicit meaning transfer.

Explicit transfer of perceptual brand meanings

The four Red Bull meanings – Distinctive flavour, Distinctive scent, Fizzy, and Sour – were combined as they were classified as perceptual in nature and directly associated with the brand. The grouping of those four meanings is both valid and reliable ($\alpha = .78$). Marginally significant differences are observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 4.35$ vs. $M_{\text{Explicit measure first}} = 3.93$; $F(1, 126) = 3.24$, $p < .10$). The order effect, however, was not expected to influence the transfer effects as implicit-explicit correlations were found not to be influenced by a function of order (Greenwald, Nosek, & Banaji, 2003). Significant differences are observed between all four conditions when the explicit measure is used to measure the transfer of perceptual brand meanings ($F(3, 161) = 12.90$, $p < .001$) (See Table 5.10).

Table 5.11: The effects of brand cue(s) on explicit attributes judgment of perceptual meanings of Red Bull

	1	2	3	4
Experiment conditions	No brand cue	Taste only	Brand Name only	Taste and Brand Name
Mean (SD)	3.13 ^a (1.29)	4.46 ^b (1.10)	3.91 ^c (1.42)	4.87 ^b (.98)
n	39	48	52	26

Note. Different subscripts represent significant means difference at least at the .05 level

Planned contrasts comparing the control condition (i.e., No Brand Cue) and treatment conditions reveal that the presence of any brand cue is significantly more effective in transferring perceptual brand meanings of Red Bull ($M_{\text{No Brand Cue}} = 3.13$ vs. $M_{\text{Taste Only}} = 4.46$, $F(1, 161) = 24.73$, $p < .001$; $M_{\text{No Brand Cue}} = 3.13$ vs. $M_{\text{Brand Name Only}} = 3.91$, $F(1, 161) = 8.72$, $p < .01$;

$M_{\text{No Brand Cue}} = 3.13$ vs. $M_{\text{Taste and Brand Name}} = 4.87$, $F(1, 161) = 30.65$, $p < .001$). Thus, Hypotheses H7a, H9a, and H13a predicting the efficacy of brand cues, including the signature taste, are supported.

A significant difference is found between Taste Only and Brand Name Only ($M_{\text{Taste only}} = 4.46$ vs. $M_{\text{Brand Name only}} = 3.91$; $F(1, 161) = 4.98$, $p < .05$). This shows that the signature taste of Red Bull is more effective in transferring perceptual brand meanings than the brand name (H11a is supported). Moreover, a significant difference between Brand Name only and Taste and Brand Name condition ($M_{\text{Brand Name only}} = 3.91$ vs. $M_{\text{Taste and Brand Name}} = 4.87$; $F(1, 161) = 10.44$, $p < .001$) demonstrates that the activation of perceptual meanings on the cobranded lolly is more effective when both signature taste and brand the name of Red Bull are presented (H15a is supported). No significant difference was found between Taste Only and Taste and Brand Name ($M_{\text{Taste only}} = 4.46$ vs. $M_{\text{Taste and Brand Name}} = 4.87$; $F(1, 161) = 1.83$, $p = .18$), which implies that when the signature taste of Red Bull is used as a brand cue, the transfer of perceptual meanings is as effective as when the two different types of brand cues are present (See Figure 5.9). This finding corresponds to the propositions made assuming the dominant effect of a sensory signature in transferring brand meanings (i.e., Sensory Cue Dominance Model (Section 3.2.4.2)). The sensory cue dominance model proposes that meaning transfer by sensory signature can be efficient as brand meanings, and can be activated through physical experience with little or no attention, and those meanings activated can be more fluently processed than those activated by other brand cue such as brand name. Thus, perceptual brand meanings are expected to be more responsive to sensory signature than brand name.

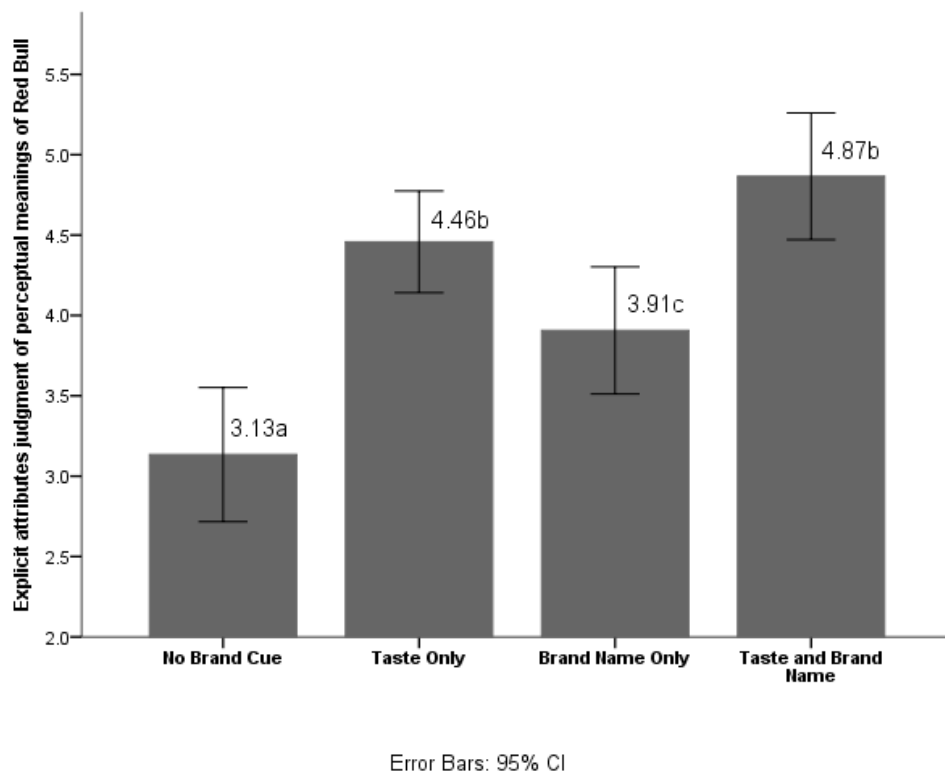


Figure 5.9. Explicit attributes judgments of perceptual meanings of Red Bull

Implicit transfer of perceptual meanings

The grouping of four perceptual Red Bull meanings measured using implicit, reaction time measure was $\alpha = .56$, which was less than .70 but it is still generally considered acceptable. Hinton, Brownlow, McMurray, and Cozens (2004) have suggested that Cronbach's alpha exceeding .90 indicates excellent internal reliability, between .70 and .90 indicates high internal reliability, from .50 to .70 indicates moderate internal reliability, and below .50 is low. A marginally significant difference is observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 1271.31$ vs. $M_{\text{Explicit measure first}} = 1103.80$; $F(1, 106) = 3.12, p < .10$).

Again, among five different approaches used to analyse the implicit data, three approaches yield statistically significant results regarding implicit transfer of the perceptual brand meanings. (See Table 5.1 in Appendix 5 for details) The result presented here is for when participants responded 'yes' to the association between the cobranded lolly and the perceptual meanings of Red Bull more than once. This is selected as it shows the most significant and meaningful result. Significant differences are observed between all 4 conditions when the implicit measure was used ($F(3, 104) = 5.02, p < .01$) (See Table 5.1).

Table 5.12: The effects of brand cue(s) on reaction time measure to perceptual meanings of Red Bull

	1	2	3	4
Experiment conditions	No Brand Cue	Taste Only	Brand Name Only	Taste and Brand Name
Mean	1525.94 ^a	1024.19 ^b	1186.78 ^{b,c}	1273.96 ^c
(SD)	(678.10)	(284.39)	(477.58)	(459.76)
n	18	37	30	23

Note. Different superscripts represent significant means difference at the .05 level.

Planned contrasts comparing the control condition of No Brand Cue and treatment conditions in which brand cue(s) were present reveal that the presence of any brand cue is significantly more effective in implicitly transferring perceptual brand meanings of Red Bull ($M_{\text{No Brand Cue}} = 1525.94$ vs. $M_{\text{Taste Only}} = 1024.19, F(1, 104) = 14.42, p < .001$; $M_{\text{No Brand Cue}} = 1525.94$ vs. $M_{\text{Brand Name Only}} = 1186.78, F(1, 104) = 6.12, p < .05$; $M_{\text{No Brand Cue}} = 1525.94$ vs. $M_{\text{Taste and Brand Name}} = 1273.96, F(1, 104) = 3.03, p < .01$). As the faster reaction time infers the stronger connection between the brand cue and the perceptual meanings of Red Bull, it can be claimed that the presence of brand cue(s) enables the transfer to be made with less effort compared to when no brand cue is present. Thus, Hypotheses H7b, H9b, and H13b, predicting the efficacy of brand cues including the signature taste, are supported. The finding implies that that Red Bull-related perceptual meanings could implicitly transfer whenever brand cue(s) is present, no matter what type of brand cue it is (See Figure 5.10).

No significant difference is found between Taste Only and Brand Name Only ($M_{\text{Taste only}} = 1024.19$ vs. $M_{\text{Brand Name only}} = 1186.78$; $F(1, 104) = 2.07, P = 1.53$). This shows that, unlike more substantial effects signature taste has on explicit transfer of perceptual meanings, the

signature taste and brand name exert similar impacts on implicit transfer of perceptual brand meanings (H11b not supported). This shows that while the signature taste of Red Bull is found to be more receptive to a perceptual brand experience when explicitly measured, brand name could automatically activate perceptual brand meanings as effectively as the sensory signature. However, when Taste only and Taste and Brand Name conditions are compared, Taste Only is found to be statistically more significant than Taste and Brand Name ($M_{\text{Taste only}} = 1024.19$ vs. $M_{\text{Taste and Brand Name}} = 1273.96$; $F(1, 104) = 4.18, p < .05$). This finding demonstrates that the activation of perceptual meanings on the cobranded product is more effective when only signature taste is present on the cobranded product, and the presence of both brand cues does not enhance the transfer of perceptual brand meanings. In addition, no significant difference was found between Brand Name Only and Signature Taste and Brand Name condition ($M_{\text{Brand Name only}} = 1186.78$ vs. $M_{\text{Taste and Brand Name}} = 1273.96$; $F(1, 104) = .47, p = .50$). This indicates that, unlike findings from the explicit meaning transfer case, the presence of two brand cues is not more effective than brand name cue only in implicitly transferring perceptual brand meanings to the cobranded product (H15b not supported). These findings might be due to the confusion, or subjective difficulty, in matching the taste and the brand name. As reaction time measure required participants to respond to the question as quickly as possible, they might have found it hard to instantly examine the taste and match it with the brand name. This might due to be due to the inhibiting effects from the presentation of multiple brand cues as proposed by the Cue Inhibition Model in Section 3.2.4.2. Participants might have needed some time to switch between two different modalities (i.e., gustatory to vision or vice versa) while they are evaluating while they are evaluating the cobranded product.

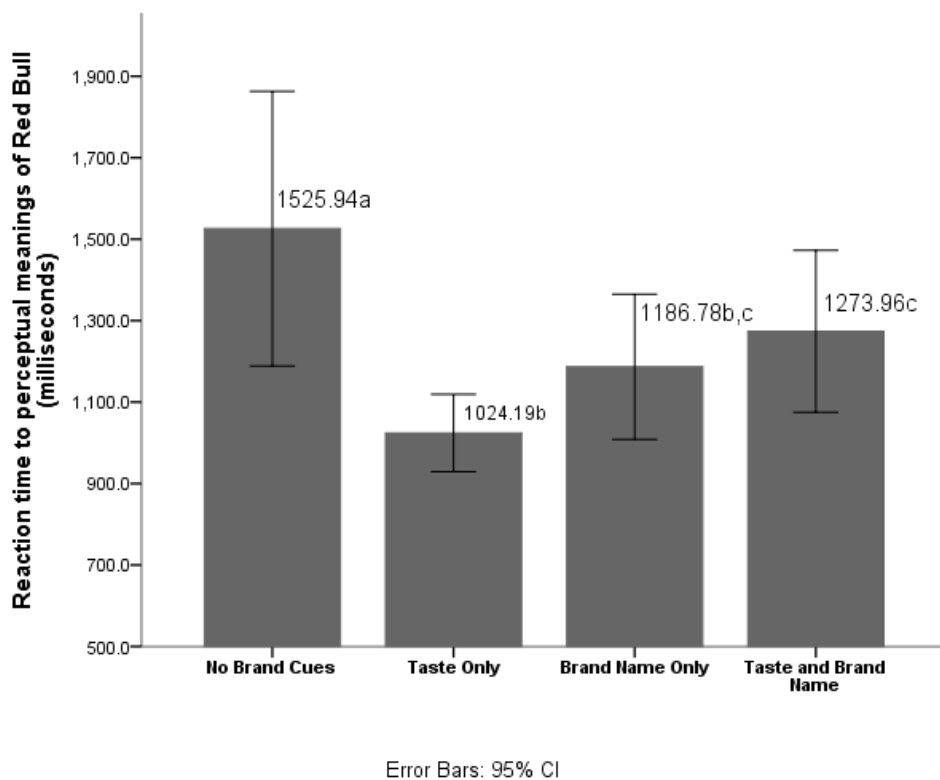


Figure 5.10. Reaction time to perceptual meanings of Red Bull

5.2.6.2 Transfer of semantic brand meanings

Appropriateness of the sample size to assess the meanings transfer

The number of students who participated in this experiment is 176, but some of them completed only one of either the explicit or implicit measure survey. Thus, the actual number of participants included in the analysis of the transfer of Red Bull-relevant perceptual brand meanings is 167 for the measurement of explicit meanings transfer and 117 for implicit meanings transfer. In both cases, the sample size should have sufficient power ($1 - \beta > .80$) to yield a satisfactory statistical finding, as they have a high effect size f of .54 for explicit meaning transfer, and f of .47 for implicit meaning transfer.

Explicit transfer of semantic brand meanings

The four semantic Red Bull meanings of Caffeine, Energetic, Exciting, and Sports were combined, as they were directly associated with Red Bull and semantic in nature, and the grouping of those four meanings is valid and reliable ($\alpha = .82$). Again, a significant difference is observed due to the order of two different types of measures used ($M_{\text{Implicit measure first}} = 4.50$ vs. $M_{\text{Explicit measure first}} = 3.88$; $F(1, 159) = 10.92, p < .01$). The order effect, however, is not expected to influence the transfer effects, as implicit-explicit correlations were found not influenced by a function of order (Greenwald et al., 2003). Significant differences are observed between all four conditions when the explicit measure is used to measure transfer of the semantic brand meanings ($F(3, 163) = 16.10, p < .001$) (See Table 5.12).

Table 5.13: The effects of brand cue(s) on explicit attributes judgment of semantic meanings of Red Bull

	1	2	3	4
Experiment conditions	No brand cue	Taste only	Brand name only	Taste and Brand name
Mean (SD)	3.15 ^a (1.15)	4.28 ^b (1.13)	4.46 ^b (1.46)	5.15 ^c (.83)
n	39	50	52	26

Planned contrasts comparing the control condition (i.e., No Brand Cue) and treatment conditions again reveal that the presence of any brand cue is significantly more effective in transferring semantic brand meanings of Red Bull ($M_{\text{No Brand Cue}} = 3.15$ vs. $M_{\text{Taste Only}} = 4.28, F(1, 163) = 19.10, p < .001$; $M_{\text{No Brand Cue}} = 3.15$ vs. $M_{\text{Brand Name Only}} = 4.46, F(1, 163) = 26.12, p < .01$; $M_{\text{No Brand Cue}} = 3.15$ vs. $M_{\text{Taste and Brand Name}} = 5.15, F(1, 163) = 42.99, p < .001$). Thus, the Hypotheses H8a, H10a, and H14a, which predict the efficacy of brand cues including the signature taste, are supported.

No significant difference is found between Taste Only and Brand Name Only ($M_{\text{Taste Only}} = 4.28$ vs. $M_{\text{Brand Name Only}} = 4.46; F(1, 163) = .57, p = .45$). This implies that the signature taste of

Red Bull alone is as effective as brand name, which is the most commonly used brand cue, in transferring the semantic Red Bull-related meanings (H12a supported). In addition, there is a significant difference between Taste Only and Taste and Brand Name ($M_{\text{Taste Only}} = 4.28$ vs. $M_{\text{Signature Taste and Brand Name}} = 5.15$; $F(1, 163) = 9.02$, $p < .01$), which implies that the signature taste of Red Bull enhances the transfer effects when co-presented with brand name. Such an enhanced transfer effect observed from co-presence of signature taste and brand name on the cobranded product is further supported when comparing it with that of the Brand Name Only condition. The transfer of semantic meaning is more effective when both brand cues are present compared to when only brand name is present on the cobranded product ($M_{\text{Taste Only}} = 4.28$ vs. $M_{\text{Taste and Brand Name}} = 5.15$; $F(1, 163) = 5.78$, $p < .05$) thus H16a is also supported (See Figure 5.11).

The findings regarding explicit transfer of the semantic brand meanings relates to the Adding (Weighted Average) Model (Section 3.2.1). This model proposes that the representativeness (i.e., weight) of brand cues will contribute to the transfer of brand meanings. As both brand name and sensory signature are unique and distinctive to the brand, the co-presence of both brand cues will enhance the transfer of the brand meanings. In addition, the meaning transfer effects will be more effective when the information is obtained via two different modalities compared to only one. This is because the stimuli presented in the different modalities are processed using independent attentional resources and thus not interfering the meaning transfer effects derived from the different types of brand cues (e.g., gustatory and visual cues). Thus, the explicit transfer of semantic brand meanings is more effectively attained when both brand name and sensory signature are presented on the cobranded product compared to when only one of the brand cues is present.

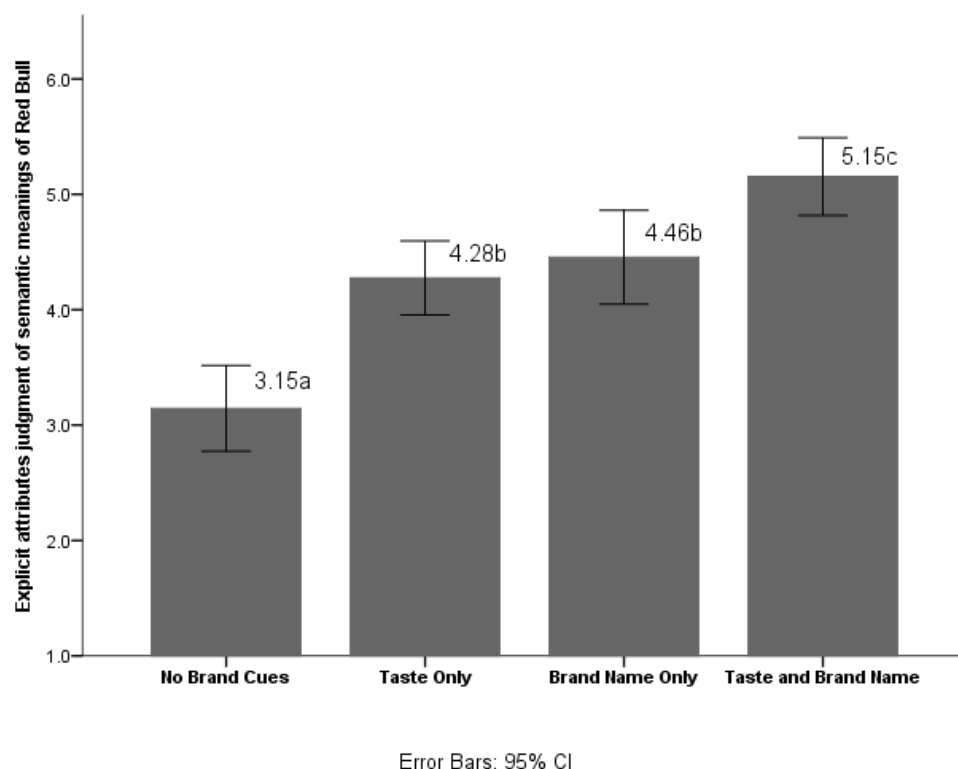


Figure 5.11. Explicit attributes judgments of semantic meanings of Red Bull

Implicit transfer of semantic meanings

The same analysis as before is used in this situation as well. So, the grouping of four semantic Red Bull meanings measured using implicit, reaction time measure is $\alpha = .66$ but it is still considered acceptable. A significant difference is again observed due to the order of two different types of measures used ($M_{\text{implicit measure first}} = 1110.90$ vs. $M_{\text{explicit measure first}} = 960.44$; $F(1, 109) = 7.33$, $p < .01$). The significant order effect, however, was not expected to influence the transfer effects as implicit-explicit correlations were found not influenced by a function of order (Greenwald et al., 2003).

Again, among five different approaches used to analyse the implicit data, three yield statistically significant results regarding the implicit transfer of perceptual brand meanings. (See Table 5.2 in Appendix 5 for details). As in the prior research reported above, the result presented here is when participants responded 'yes' to the association between the cobranded lolly and the perceptual meanings of Red Bull more than once. This is selected as it shows the most significant and meaningful result. Significant differences are observed between all 4 conditions when the implicit measure was used ($F(3, 113) = 7.94$, $p < .001$) (See Table 5.13).

Table 5.14: The effects of brand cue(s) on reaction time measure to semantic meanings of Red Bull

	1	2	3	4
Experiment conditions	No Brand Cue	Taste Only	Brand Name Only	Taste and Brand Name
Mean	1362.52 ^a	980.82 ^b	953.99 ^b	1058.38 ^c
(SD)	(378.63)	(272.70)	(300.86)	(345.67)
n	19	38	36	24

Note. Different subscripts represent significant means difference at least at the .05 level.

Planned contrasts, comparing the control condition of No Brand Cue and treatment conditions in which brand cue(s) are present, reveal once more that the presence of any brand cue is significantly more effective in implicitly transferring semantic brand meanings of Red Bull ($M_{\text{No Brand Cue}} = 1362.52$ vs. $M_{\text{Taste Only}} = 980.82$, $F(1, 113) = 18.54$, $p < .001$; $M_{\text{No Brand Cue}} = 1362.52$ vs. $M_{\text{Brand Name Only}} = 953.99$, $F(1, 113) = 20.85$, $p < .001$; $M_{\text{No Brand Cue}} = 1362.52$ vs. $M_{\text{Taste and Brand Name}} = 1058.38$, $F(1, 113) = 9.86$, $p < .01$). As the faster reaction time infers a stronger connection between the brand cue and the semantic meanings of Red Bull, it can be said that the presence of brand cue(s) enables the transfer to be made with less effort compared to when no brand cue is present. Thus, Hypotheses H8b, H10b, and H14b, predicting the efficacy of brand cues including the signature taste, are supported. The finding implies that that Red Bull-related semantic meanings could implicitly transfer whenever brand cue(s) are present, no matter what type of brand cue it is (See Figure 5.12).

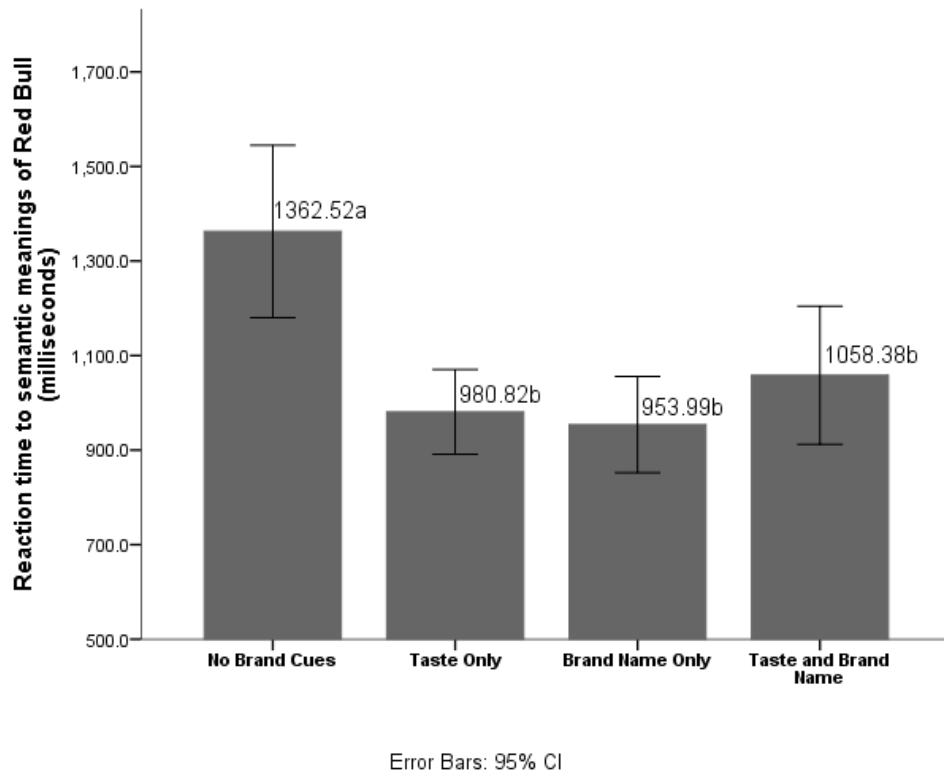


Figure 5.12. Reaction time to semantic meanings of Red Bull

No significant difference is found between Taste Only and Brand Name Only ($M_{\text{Taste only}} = 980.82$ vs. $M_{\text{Brand Name only}} = 953.99$; $F(1, 113) = .13$, $p = .72$). This result is similar to the effects respective signature taste and brand name had on the explicit transfer of semantic brand meanings. This implies that the signature taste exerts a similar effect to the brand name in implicitly transferring semantic brand meanings, demonstrating the effectiveness of signature taste as a brand cue; thus H12b is not supported. This shows that while the signature taste of Red Bull is found to be more receptive to perceptual brand experience when explicitly measured, brand name can automatically activate perceptual brand meanings as effectively as the sensory signature. In fact, no significant differences are found among treatment conditions with brand cues. No significant difference is found between Brand Name Only and Signature Taste and Brand Name conditions ($M_{\text{Brand Name only}} = 953.99$ vs. $M_{\text{Taste and Brand Name}} = 1058.38$; $F(1, 113) = 1.58$, $P = .21$). This indicates that, unlike findings from the explicit meaning transfer, the presence of two brand cues is not more effective than brand name cue alone in implicitly transferring semantic brand meanings to the cobranded product, so H16b is not supported. These effects of brand cues on implicit transfer of semantic brand meanings reflect the proposition developed under the Equal weight averaging model in Section 3.2.3. To reiterate, this model assumes that the importance, or the weight, of each information stimulus is the same so that the effect of brand name and sensory signature on meaning transfer is the same. Thus, based on the result from implicit transfer of semantic meanings, it can be assumed that both sensory signature and brand name are equally effective in retrieving semantic brand meanings of Red Bull, supporting the effectiveness of sensory signature as an effective brand cue.

5.2.6.3 Mediation analysis

To further analyse the path by which meanings transfer to a cobranded product and the effects of brand cue to the liking cobranded product, a mediation test was conducted using the PROCESS computational macro for SPSS (Hayes, 2013). This mediation approach uses the default bootstrapping procedure as it is more efficient means of testing indirect effects than the Sobel's test (Preacher & Hayes, 2004). As this research aims to examine the direct path and indirect path that brand meanings transfer and its effects on the attitude toward a cobranded product, the use of PROCESS macro seemed appropriate (Hayes, Montoya, & Rockwood, 2017).

It was expected that the path which shows the effects of Red Bull brand name or its signature taste on the cobranded lolly will be via transfer of brand meanings, as Glaser and colleagues (2013) demonstrated that the liking of an object is driven by the assessment of its properties. Serial mediation (Model 6) was conducted in order to examine the causal link between different types of meanings (i.e., mediators). The data was collapsed into two different conditions (i.e., No Taste vs. Taste; No Brand name vs. Brand name) to run the serial mediation analysis. Figure 5.13 below demonstrates the estimates from the path coefficients.

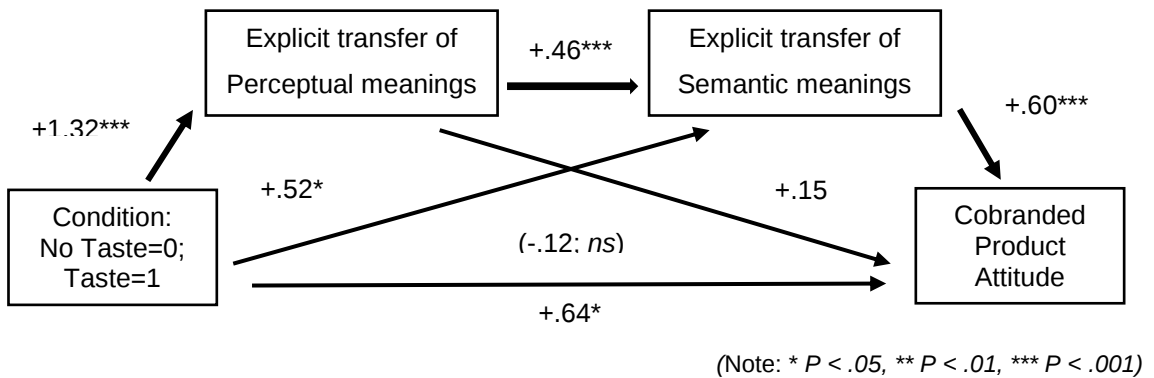


Figure 5.13. Path coefficients for serial mediation model for the effects of signature taste on cobranded product attitude

No significant effect of taste manipulation on cobranded product attitude exists for the transfer implicit meanings. However, a significant indirect effect exists for the transfer of explicit meanings (95% CI [.14, .55]). In other words, signature taste serially influences the explicit transfer of perceptual meanings and semantic meanings which, in turn, increases the liking of the cobranded lolly with 95% confidence. This result implies that while signature taste affects the liking of the cobranded product, the sensory features (e.g., sourness, fizziness) of the cobranded lolly causes participants to associate the semantic meanings (e.g., energetic, sports), which increases the liking of a cobranded lolly. Thus, it clearly shows one of the paths that could explain how people form an attitude toward a cobranded product. Hypothesis 17a is thus supported.

Another serial mediation was conducted to examine the effects of the presence of a mature brand's brand name, Red Bull, brand name on a cobranded lolly has on the cobranded

product (See Figure 5.14). Again, no significant effect of brand name manipulation on cobranded product attitude exists for the transfer of implicit meanings.

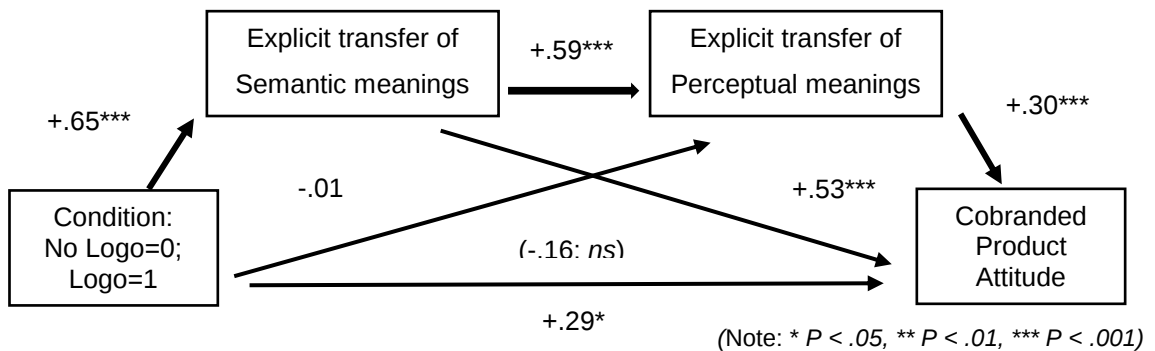


Figure 5.14. Path coefficients for serial mediation model for the effects of brand name on cobranded product attitude

Examination of path coefficients revealed that the presence of the brand name influenced the attitude toward a cobranded product through explicit transfer of semantic meanings and explicit transfer of perceptual meanings (95% CI [.24, .70]). The presence of brand name could also elicit explicit transfer of semantic meanings which, in turn, has positive effects on cobranded product attitude (95% CI [.05, .24]). These findings indicate that the presence of a brand name elicits explicit transfer of semantic meanings, which in turn could influence cobranded product attitude via explicit transfer of perceptual meanings or positively affect cobranded product directly. Hypothesis 17b is also supported.

5.2.7 Summary of Experiment 2 Results

To summarise, Experiment 2 first focuses on providing evidence that can illustrate the diagnostic nature of sensory signature as shown in Experiment 1, but by examining the effects of signature taste on the transfer of different types of perceptual and semantic brand meanings. In terms of explicit meanings transfer, it is found that the signature taste of Red Bull is more effective than brand name in explicitly transferring perceptual brand meanings, while no significant difference is found between them in terms of their effects of transferring semantic meanings. This implies that the signature taste of Red Bull is unique and distinctive of Red Bull, just like its brand name, such that the sensory signature can function as an effective brand cue. In terms of implicit meanings transfer, the presence of a brand cue itself, no matter of what types or how many, activates both perceptual and semantic brand meanings from the cobranded product, implying that implicit meanings transfer takes place.

In addition, mediation analysis was conducted to discover the path through which the sensory signature influences the transfer of brand meanings, which lead to cobranded product attitude. The finding reveal that sensory signature could influence the attitude toward the cobranded product via transfer of perceptual and semantic brand meanings, while brand name influences the attitude via transfer of semantic and perceptual brand meanings. This

demonstrates one of the many possible paths by which brand cues drive the meaning transfer process.

However, it remains unclear whether it really is the unique, signatory nature of the taste of Red Bull, and not the difference in perceived intensity of the taste of between Red Bull taste present vs Red Bull taste not present conditions. In order to elucidate this issue, a follow-up experiment (Experiment 3) is conducted. Thus, the purpose of Experiment 3 is to demonstrate that effectiveness of signature taste in retrieving the various brand meanings is not derived from the difference in perceived strength of the taste from different experimental conditions. Table 5.15 below summarises the test of the hypotheses regarding efficacy of signature taste as an effective brand cue investigated in Experiment 2.

Table 5.15: Summary of hypotheses investigated in Experiment 2

Code	Hypotheses tested	Result
H7a	The explicitly-measured perceptual attribute judgments will be greater when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]	Supported
H7b	The reaction time measured for perceptual attribute judgments will be faster when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]	Supported
H8a	The explicitly-measured semantic attribute judgments will be greater when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]	Supported
H8b	The reaction time measured for semantic attribute judgments will be faster when signature taste alone is present on a cobranded product (C2), compared to when no brand cue is present on a cobranded product (C1): [C1 < C2]	Supported
H9a	The explicitly-measured perceptual attribute judgments will be greater when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): [C1 < C3]	Supported
H9b	The reaction time measured for perceptual attribute judgments will be faster when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): [C1 < C3]	Supported
H10a	The explicitly-measured semantic attribute judgments will be greater when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): [C1 < C3]	Supported
H10b	The reaction time measured for semantic attribute judgments will be faster when brand name alone is present on a cobranded product (C3), compared to when no brand cue is present on a cobranded product (C1): [C1 < C3]	Supported
H11a	The explicitly-measured perceptual attribute judgments will be greater when signature taste alone is present on a cobranded product (C2), compared to when only brand name is present on a cobranded product (C3): [C2 > C3]	Supported
H11b	The reaction time measured for perceptual attribute judgments will be faster when only signature taste is present on a cobranded product (C2), compared to when only brand name is present on a cobranded product (C3): [C2 > C3]	<i>Not Supported</i>
H12a	The explicitly-measured semantic attribute judgments will be greater when brand name alone is present on a cobranded product (C3), compared to when signature taste alone is present on a cobranded product (C2): [C2 < C3]	Supported

H12b	The reaction time measured for <i>semantic attribute judgments</i> will be faster when brand name alone is present on a cobranded product (C3), compared to when signature taste alone is present on a cobranded product (C2): [C2 < C3]	<i>Not Supported</i>
H13a	The explicitly-measured <i>perceptual attribute judgments</i> will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): [C1 < C4]	Supported
H13b	The reaction time measured for <i>perceptual attribute judgments</i> will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): [C1 < C4]	Supported
H14a	The explicitly-measured <i>semantic attribute judgments</i> will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): [C1 < C4]	Supported
H14b	The reaction time measured for <i>semantic attribute judgments</i> will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when no brand cue is present on a cobranded product (C1): [C1 < C4]	Supported
H15a	The explicitly-measured <i>perceptual attribute judgments</i> will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when only brand name is present on a cobranded product (C3): [C3 < C4]	Supported
H15b	The reaction time measured for <i>perceptual attribute judgments</i> will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when only brand name is present on a cobranded product (C3): [C3 < C4]	<i>Not Supported</i>
H16a	The explicitly-measured <i>semantic attribute judgments</i> will be greater when the signature taste and brand name are co-present on a cobranded product (C4), compared to when signature taste alone is present on a cobranded product (C3): [C3 < C4]	Supported
H16b	The reaction time measured for <i>semantic attribute judgments</i> will be faster when the signature taste and brand name are co-present on a cobranded product (C4), compared to when signature taste alone is present on a cobranded product (C3): [C3 < C4]	<i>Not Supported</i>
H17a	The impact of signature taste on cobranded product attitude will be indirectly mediated by activation of perceptual brand meanings and then semantic brand meanings associated with the target brand	Supported
H17b	The impact of brand name on cobranded product attitude will be indirectly mediated by activation of semantic brand meanings and then perceptual brand meanings associated with the target brand	Supported

5.3 Experiment 3: The Efficacy of Sensory Signature as Brand Cue

Findings from Experiment 2 demonstrate that the signature taste of Red Bull is an effective brand cue that can transfer both perceptual and semantic brand meanings relevant to Red Bull to the cobranded product. Experiment 3 is conducted to avoid one of several alternative explanations of why the transfer effects occurred. As the strength of the perceptual experience can influence the processing of cognitive concepts (Connell & Lynott, 2012), Experiment 3 aims to investigate whether the intensity of the Red Bull taste (vs. No Red Bull taste) influenced the transfer of Red Bull-relevant brand meanings found in Experiment 2.

Section 5.3 is divided into 6 subsections. First, the objective of Experiment 3 is declared in Section 5.3.1, followed by an explanation of the research design in Section 5.3.2. Section 5.3.3 contains discussion of the sample size determination and a brief description of participants. Next, the experimental materials and the dependent measures are discussed (Section 5.3.4) and, after that, the procedures taken to conduct the experiment is introduced (Section 5.3.5). Lastly, a report of the results of Experiment 3 are contained in Section 5.3.6.

5.3.1 Research Objective

The purpose of Experiment 3 is to ensure that it was the distinctive, brand-specific taste of Red Bull, and not the perceived difference of the intensity of taste between Red Bull taste lollies vs. No Red Bull taste lollies that influenced the evaluation of the cobranded lolly. As Ares and Deliza (2010) found that the sensory characteristics such as colour and size of the label and packaging can alter the liking of the product, the perceived strength/intensity of the perceptual experience in this experiment series may also influence attitude toward the product. In fact, previous research has found that the perceived intensity of a physical experience is capable of influencing the processing of cognitive concepts (e.g., Connell & Lynott, 2012). Therefore, it is expected that the difference in terms of perceived intensity of the taste might have contributed to the transfer of brand meanings, which led to favourable evaluation of the cobranded lolly in Experiment 2. Thus, this experiment was conducted to provide the further evidence that can support the efficacy of signature taste of Red Bull as an effective brand cue that can transfer brand meanings and influence consumers to have a favourable attitude toward the cobranded product.

5.3.2 Research Design

As the aim of this study is to examine the efficacy of the signature taste of Red Bull, only the presence of its taste was manipulated, while both conditions used the same brand name, Powell. The brand name Red Bull was not included, as it is another brand-specific cue that can interfere with the examination of the true effect of signature taste on meaning transfer effects. In addition, only explicit meaning transfer effects are examined, as these effects were

directly influenced by the manipulation of signature taste in Experiment 2. Implicit meaning transfer effects occur regardless of the type of brand cue used. Thus, this experiment employs a 2 (Red Bull taste: present vs. not present) between-subject design.

5.3.3 Participants

In order to estimate the sample size that could at least replicate the main results from Experiment 2, power analyses using G*Power 3 was conducted (Faul et al., 2007). The target of elucidation was the transfer effects of perceptual and semantic meanings which yield a Partial eta squared (η^2) of .194 and .229 each, and an η^2 of .194 from the perceptual meanings transfer effect was chosen for the sample size estimation, to take a conservative standard. This value translates to an effect size f of .491 (Cohen, 1988). According to power analyses applying this large effect size, sample sizes of 36, 40, 46, and 56 are required to achieve power levels of 80%, 85%, 90%, and 95%, respectively.

52 undergraduate students at AUT university (Female = 53.8%, $M_{\text{age}} = 21.29$) participated in the experiment, achieving a power of 93%. Thus, the number of participants was enough to validate the meaningfulness of the statistical findings from the study. The participants drawn were also university students, as the previous study, who were enrolled in the same course as those who participated in Experiment 2.

5.3.4 Material and Scales

5.3.4.1 Stimulus material

The same recipes¹³ with the same ingredients and proportions were used to make Red Bull lollies and plain lollies, as in Experiment 2. Also, just as for Experiment 2, they were presented to the participants wrapped in a clear paper, and contained in a glass jar with opaque paper band around it, printed with brand name "Powell."

5.3.4.2 Dependent measures

Participants indicated the perceived strength, or intensity, of the taste of the lolly on a 7-point scale (1 = not strong at all, 7 = very strong). Among the four perceptual brand meanings used in the previous experiment, only Sourness and Fizziness were used in this experiment. The other two perceptual brand meanings, Distinctive taste and Distinctive scent, were not included as they are not as descriptive of the perceptual nature of Red Bull. To assess whether brand meanings were successfully transferred to a cobranded product, participants were asked

¹³ Red Bull, gelatine powder for Red Bull taste lolly, and sugar, gelatine powder, yellow food colouring for non-Red Bull taste lolly.

to indicate their level of agreement or disagreement to the statement describing the characteristics of the lollies from Powell regarding their perceptual attributes of sourness and fizziness; ($r = .33$) and semantic nature (i.e., caffeine and being energetic; $r = .48$) on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Liking of this new cobranded product was measured using three items on a 7-point scale (1 = bad / boring / unfavourable, 7 = good / interesting / favourable). Three attitude items used were combined and the grouping found to be valid and reliable ($\alpha = .85$). Lastly, to rule out the potentially confounding effect of hunger, the hunger level of participants was measured. Participants indicated their hunger level on a single item, using a 7-point scale (1 = not hungry at all, 7 = very hungry) (See Appendix 9 for survey instrument used for Experiment 3).

5.3.5 Procedure

Participants were given two different types of lollies; one with Red Bull taste and the other without Red Bull taste. The Red Bull taste lollies were contained in jar number 1 and no-Red Bull taste lollies were in jar number 2. These lollies were put in a jar with the same brand name, Powell, printed on the opaque paper band wrapper. Participants were first randomly assigned different numbers, either 1 or 2, and they were given a lolly from the appropriately numbered jar. Then, participants wrote down the assigned number on the first page of the survey, and then were asked to taste the lolly. Once everybody had finished the tasting phase, they started to answer the survey.

5.3.6. Results

5.3.6.1 Perceived intensity of taste

The possible covariate proposed, level of hunger, is not significant, and is thus removed from further analysis. Perceived strength of the taste of the lolly is not significantly different among participants in the two different conditions ($M_{\text{No Red Bull Taste}} = 3.15$ vs. $M_{\text{Red Bull Taste}} = 3.69$, $F(1, 50) = 2.07$; $p = .16$). This implies that it was not the intensity of the taste of cobranded lollies that led participants in Experiment 2 to associate the product with Red Bull-relevant meanings or to have favourable attitude toward the cobranded product.

5.3.6.2 Transfer of brand meanings

Perceptual meanings transfer

As mentioned, the possible covariate proposed, level of hunger, is not significant, and is thus removed from further analysis. As expected, an ANOVA reveals that perceptual meanings transfer more effectively in the Red Bull Taste condition than in the No Red Bull Taste condition ($M_{\text{No Red Bull Taste}} = 1.54$ vs. $M_{\text{Red Bull Taste}} = 3.40$, $F(1, 50) = 45.72$, $p < .001$) (See Figure 5.15).

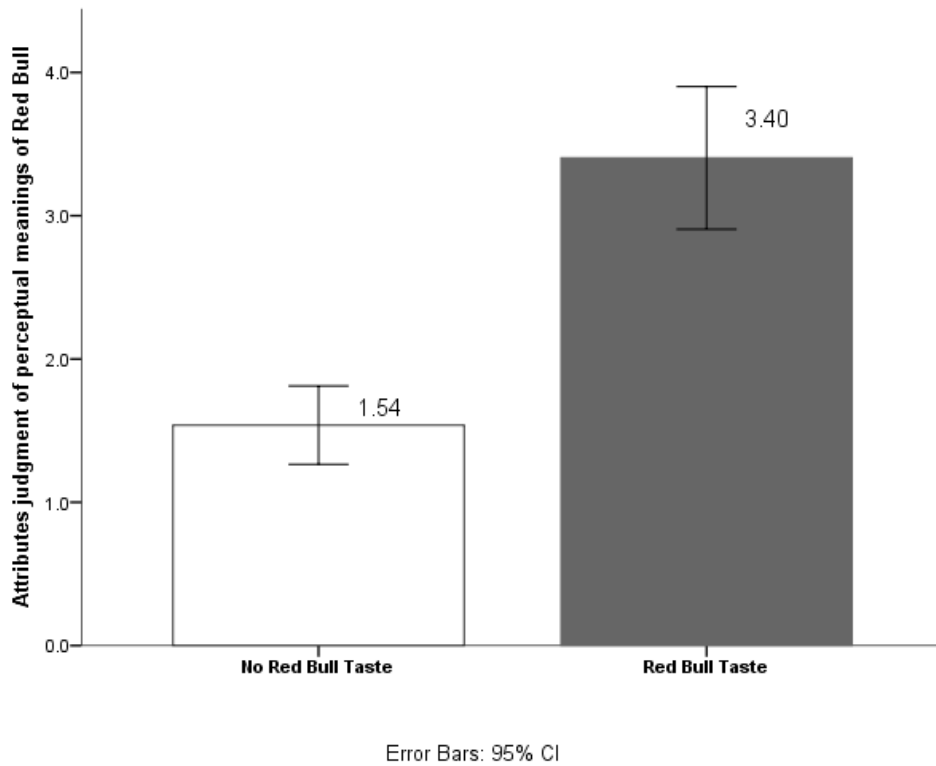


Figure 5.15. Attributes judgment of perceptual meanings of Red Bull

Semantic meanings transfer

The statistically insignificant level of hunger is also removed from this analysis. Again, as expected, an ANOVA reveals that the semantic brand meanings transfer more effectively when signature taste is present than it is not present ($M_{\text{No Red bull Taste}} = 2.19$ vs. $M_{\text{Red Bull Taste}} = 3.38$, $F(1, 50) = 9.66$, $p < .01$). These results are visually presented in Figure 5.16.

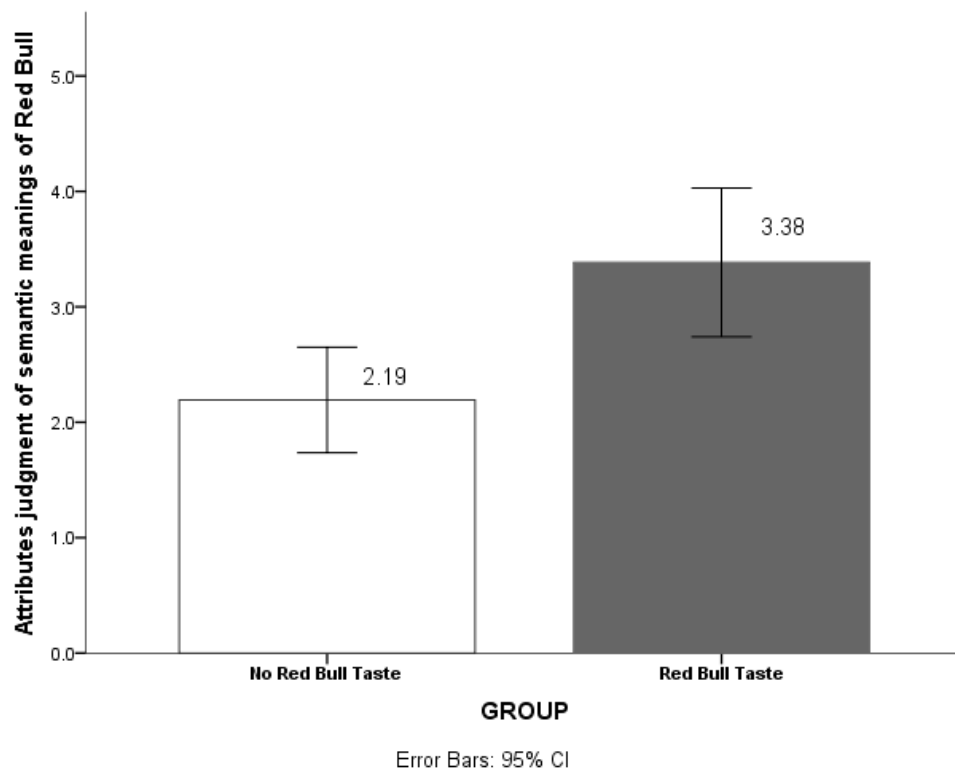


Figure 5.16. Attributes judgment of semantic meanings of Red Bull

Attitude toward the product

In addition, participants in Red Bull Taste condition prefer this taste-based cobranded lolly than the plain taste lolly in the No Red Bull Taste condition ($M_{\text{No Red Bull Taste}} = 3.12$ vs. $M_{\text{Red Bull Taste}} = 3.86$, $F(1, 50) = 4.84$, $p < .05$). This result indicates that the taste of Red Bull had a positive effect on the evaluation of the lollies (See Figure 5.17).

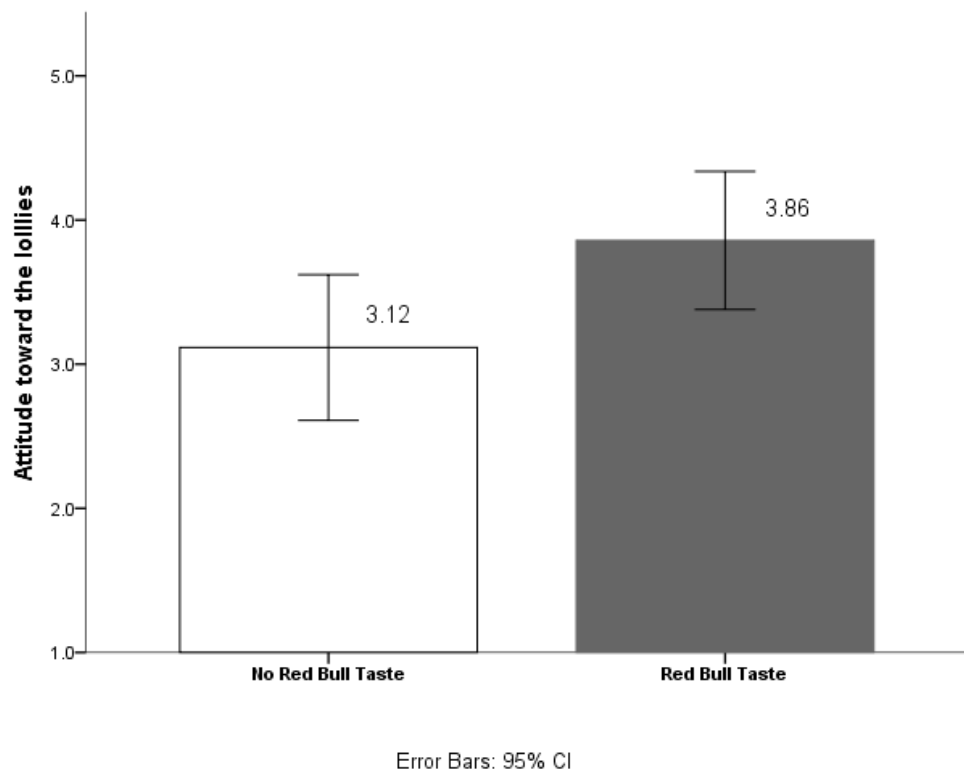


Figure 5.17. Attitude to the lollies

5.3.7 Summary of Experiment 3 Results

The purpose of this experiment is to provide evidence that efficacy of the signature taste of Red Bull in transferring brand meanings is actually derived from its signatory characteristics and not from the perceived difference in terms of the intensity of the taste of lollies between 'Red Bull taste present' and 'Red Bull taste not-present' conditions. The results of this experiment support this assumption by showing that the meaning transfer effect occurs only when the signature taste exists (vs. no taste), while the perceived intensity of the tastes are the same across conditions.

5.4 Experiment 4: The Efficacy of Description of Sensory Signature as Brand Cue

The previous three experiments were conducted by allowing participants to actually taste the lollies that have the signature taste of Red Bull. In reality, however, participants hardly ever get to taste a new product before they purchase it. Thus, this experiment aims to compare whether the description of the sensory signature of a cobranded product can influence consumers' evaluation of the product as effectively as the taste of the product can.

More specifically, this section is subdivided into 6 sub-sections. First, the objective of Experiment 4 is discussed in Section 5.4.1, followed by presentation of the research design in Section 5.4.2. Sample determination, size and a brief participant description are contained in Section 5.4.3. Next, the experiment materials and the dependent measures are discussed (Section 5.4.4), and procedural matters used to control and conduct the experiment are introduced (Section 5.4.5). The final section, 5.4.6., contains a report of the results from Experiment 4.

5.4.1 Research Objective

The purpose of Experiment 4 is to support the claim that simulation of a physical experience of signature taste is a sufficient condition to activate semantic meanings. According to Zhang and Li (2012), a physical experience is neither a necessary nor a sufficient condition to activate a metaphorically linked concept. Following their logic, a verbal description of a signature taste should be able to activate semantic meanings, because such information can activate relevant brand meanings via a spreading activation memory pattern. If a verbal description of signature taste cannot activate semantic meanings on a cobranded product while perceptual meanings are retrieved, then it means that at least simulation from physical experience can be a sufficient condition.

If such an incidence happens, one might argue that unlike conceptual metaphor (e.g., the link between “heavy” and “importance”), the link between perceptual and semantic attributes is inherently vague (e.g., the link between “salty” and “energetic”) so that semantic spreading activation is not meant to occur. However, if signature taste is found to be as diagnostic as brand name cue, then it demonstrates that brand meanings are interconnected, with signature taste being at the centre, within a network, providing paths for spreading activation. Elder and Krishna (2012) have demonstrated that exposure to the visual image of a bowl of yogurt with a spoon oriented to the dominant hand facilitates higher mental simulation compared to the condition with the same visual image without a spoon or with spoon oriented to the non-dominant hand. What is interesting in their study is that conditions without spoon and spoon oriented toward non-dominant hand show similar consequences on purchase intentions and mental simulation. They conclude that it is not just the presence of visual stimulation that leads to mental simulation but a particular visual depiction, such as a particular orientation, that

facilitate the simulation. Thus, for effective meaning transfer effects to occur so as to be able to retrieve semantic meanings from a cobranded product, it will take more than a random sensory cue, but a sensory signature might be sufficient.

5.4.2 Research Design

As the aim of this experiment is to examine the efficacy of a description of the signature taste of Red Bull, only the descriptions of characteristics of the new cobranded jellies were manipulated. Thus, this experiment has a 3 (Description of Red Bull-related information: No information of Red Bull characteristics vs. Perceptual characteristics of Red Bull vs. Semantic characteristics of Red Bull) between-subject design. Brand name for the cobranded product is Red Bull & Powell as this study is only interested in examining if the verbal descriptions of different types of brand meanings (i.e., perceptual and semantic brand meanings) can influence the transfer of those meanings on a new cobranded product. In a real-life setting, a cobranded product keeps the partner brand names on the packages to make it clear to prospective purchasers that it is made from contributions from both brands. In addition, it is commonly found that the package contains information about the product itself. Only explicit meaning transfer effects, the activation of perceptual and semantic meanings associated with the target brand, are examined, as these effects were directly influenced by the manipulation of signature taste in Experiment 2.

5.4.3 Participants

In order to estimate the sample size required, power analyses using G*Power 3 was conducted (Faul et al., 2007). *A priori* power analysis reveals that a minimum sample size of 158 should have adequate power ($1 - \beta > .80$) with medium effect size ($f = .25$), incorporating a significance level of .05 (Faul et al., 2007).

167 participants recruited from Amazon M-Turk (Female = 40.2%, $M_{\text{age}} = 34.08$ ranged between 18 and 64) participated in the experiment. The number of participants for each condition ranged between 54 and 59; 56 for the No information condition, 54 for the perceptual meanings condition, and 59 for the semantic meanings condition.

5.4.4 Material and Scales

5.4.4.1 Stimulus material

In this experiment written information about the new cobranded jellies¹⁴ is used to explicitly manipulate the characteristics of the cobranded product. Also, I measure the effects

¹⁴ The cobranded product category used in Experiments 4 and 5 were jellies as it is the most similar

the manipulated features have on the activation of brand meanings and attitudes toward the brand under the control of external influences. All the written descriptions involve a new cobranded jelly brand Red Bull & Powell® Jellies. The information used in the control condition only concerns information introducing two different brands engaging in a cobranding partnership, while the information used in the experimental conditions introduced either a verbal description of the signature taste or semantic features from the target brand (i.e., Red Bull). The written descriptions across different conditions were kept the same in terms of length and structure. Participants were randomly assigned to one of the three different conditions.

The information used in the control condition, with no information of Red Bull-related features, is:

Powell® is a jelly brand recently introduced in the market. While **Powell®** has not been on the market long, the brand has settled down quite well and its jellies have been enjoyed by many people across America. **Red Bull** has always been interested in collaborating with other brands to create a new product. Recently, **Red Bull** and **Powell®**, a jelly making brand, sat down together to develop the new **Red Bull & Powell® Jellies**. The new product targets a variety of adult consumers such as athletes, busy professionals, college students and travelers on-the-go. These new **Red Bull & Powell® Jellies** will bring enjoyment to you anywhere you go or whatever you do!

The information used to describe the product with the signature sour taste of Red Bull is:

Powell® is a jelly brand recently introduced in the market. While **Powell®** has not been on the market long, the brand has settled down quite well and its jellies have been enjoyed by many people across America. **Red Bull** has always been interested in collaborating with other brands to create a new product. Recently, **Red Bull** and **Powell®**, a jelly making brand, sat down together to develop the new **Red Bull & Powell® Jellies** with **SOUR taste**. The new product targets a variety of adult consumers such as athletes, busy professionals, college students and travelers on-the-go. These new **Red Bull & Powell® Jellies** with **Sour taste** will bring enjoyment to you anywhere you go or whatever you do!

The information used to describe the product with the most salient semantic feature of Red Bull (i.e., energetic) is:

product in the U.S to what is categorised as lollies in New Zealand.

Powell® is a jelly brand recently introduced in the market. While **Powell®** has not been on the market long, the brand has settled down quite well and its jellies have been enjoyed by many people across America. **Red Bull** has always been interested in collaborating with other brands to create a new product. Recently, **Red Bull** and **Powell®**, a jelly making brand, sat down together to develop the new **Red Bull & Powell® Jellies** that can make you feel more **ENERGETIC**. The new product targets a variety of adult consumers such as athletes, busy professionals, college students and travelers on-the-go. These new **Energy Red Bull & Powell® Jellies** will bring enjoyment to you anywhere you go or whatever you do!

5.4.4.2 Dependent measures

After reading the written description, participants indicated their overall liking of the cobranded product using three items on a 7-point scale (1 = bad / negative / unfavourable, 7 = good / positive / favourable). The three attitude items used were combined and the grouping of them found to be valid and reliable ($\alpha = .97$). To assess whether brand meanings are successfully transferred to a cobranded product, participants were asked to indicate their level of agreement or disagreement to the statement describing the characteristics of the cobranded jelly regarding its perceptual (i.e., tartness and fizziness; $r = .34$) and semantic nature (i.e., sports and being exciting; $r = .57$) on a 7-point scale (1 = strongly disagree, 7 = strongly agree). While the perceptual measure of tartness and fizziness has relatively low inter-item correlations, according to Clark and Watson (1995), especially with few items, it is recommended to keep the inter-item correlation between .15 and .50 to be able to capture the unidimensionality of a scale more appropriately.

The familiarity of Red Bull was also measured on a 7-point scale (1 = unfamiliar, 7 = familiar) to ensure that participants are knowledgeable enough to recognise that the featured characteristic of the cobranded jellies is from Red Bull. From Experiment 1, it was found that if the meanings associated with a cobranded product are interpreted as innate to the product itself, no meaning transfer occurs. To rule out potential confounding effects, the liking of Red Bull and liking of Powell as well as the liking of jellies in general were measured, using one item on a 7-point scale (1 = not likeable, 7 = likeable). In addition, the liking of a sour taste was also measured on the same 7-point scale (1 = not likeable, 7 = likeable) (See Appendix 10 for the survey questions used in Experiment 4).

5.4.5 Procedure

The survey was created online using Qualtrics and then the survey link was uploaded to Amazon M-Turk. At the beginning of the survey, the participants were briefly notified that the survey is to understand consumer feelings and attitudes toward the new product about to be introduced in the survey. In order to increase the internal validity, they were told that it is very important that they complete all questions without any distractions, such as watching TV,

listening to music, instant messaging, or chatting. They were also asked not to complete the survey while completing other surveys at the same time. Participants' consent to participate in the survey was complete by clicking the button that leads to the next page.

After agreeing to participate in the survey, they read a brief instruction asking them to read the information given about a new product and to answer the questions. Participants were randomly assigned into one of the three conditions. After reading the written description, participants answered a brief questionnaire asking their attitude toward the new cobranded product. Then, in the next page, the participants indicated their level of agreement regarding different characteristics of the new cobranded product from the written description. They then filled out questions relating to the brand Red Bull and Powell. Next, participants were asked how much they like sour tastes and jellies in order to alleviate potential confounding effects from these variables. After that, they were asked to answer general demographic questions.

5.4.6 Results

5.4.6.1 Evaluation of a cobranded product

First, the effects of a description of Red Bull-related meanings on attitude toward Red Bull & Powell Jellies were measured. It was expected that the attitude toward Red Bull & Powell Jellies would be more favourable when the description of Red Bull-related meaning is presented in the written description about this new cobranded product (i.e., **Red Bull & Powell® Jellies with SOUR taste** or **Red Bull & Powell® Jellies** that can make you feel more **ENERGETIC**) than when no description of Red Bull-related meaning is presented (i.e., only the name of the new cobranded product Red Bull & Powell® Jellies appeared). An analysis of covariance (ANCOVA) was performed to assess the effects of perceptual or semantic Red Bull meaning descriptions have on the evaluation of Red Bull-cobranded jellies. Prior attitudes toward the partner brands (i.e., liking of Red Bull, liking of Powell) and the cobranding product category (i.e., liking of jellies) served as covariates as in previous cobranding research (e.g., Swaminathan et al., 2015).

As expected, there is a significant effect of the description of Red Bull-related meaning on evaluation of the cobranded product after controlling for the effect of liking of Red Bull, liking of Powell, and liking of jellies ($M_{\text{No Information}} = 3.82$ vs. $M_{\text{Perceptual Meanings}} = 3.96$ vs. $M_{\text{Semantic Meanings}} = 4.63$, $F(2, 162) = 6.11$; $p < .01$). (See Table 5.14). All the covariates are significantly related to the effects of description of Red Bull-related meaning; Liking of Red Bull ($F(1, 162) = 66.48$, $p < .01$), liking of Powell ($F(1, 162) = 13.62$, $p < .01$), and liking of jellies ($F(1, 162) = 9.64$, $p < .01$).

Table 5.16: The effects of Red Bull-related meanings on attitude toward the cobranded product

Experiment conditions	1	2	3
	No Information	Perceptual meanings	Semantic meanings
Mean (SD)	3.82 ^a (.18)	3.96 ^a (.18)	4.63 ^b (.17)
n	56	54	58

Using planned contrast analysis, the effects of the description of Red Bull-related meanings on the attitude toward the cobranded jelly were further analysed. A significant difference was found between No Information (i.e., the control condition) and Description of Semantic meanings ($M_{\text{No Information}} = 3.82$ vs. $M_{\text{Semantic Meanings}} = 4.63$; $F(1, 162) = 10.64$, $p < .001$), and a marginally significant difference was also identified between Description of Perceptual meanings and Description of Semantic meanings ($M_{\text{Perceptual Meanings}} = 3.96$ vs. $M_{\text{Semantic Meanings}} = 4.63$; $F(1, 162) = 7.12$, $p < .10$), as shown in Figure 5.18.

Compared to the findings from Experiment 2, which demonstrate the effectiveness of signature taste on the attitude toward the cobranded product, the effects of signature taste inducing positive attitude of cobranded product is not effective when the signature taste is described verbally, rather than when it was actually tasted. The description of semantic meanings, however, is found to favourably influence the attitude toward the cobranded product.

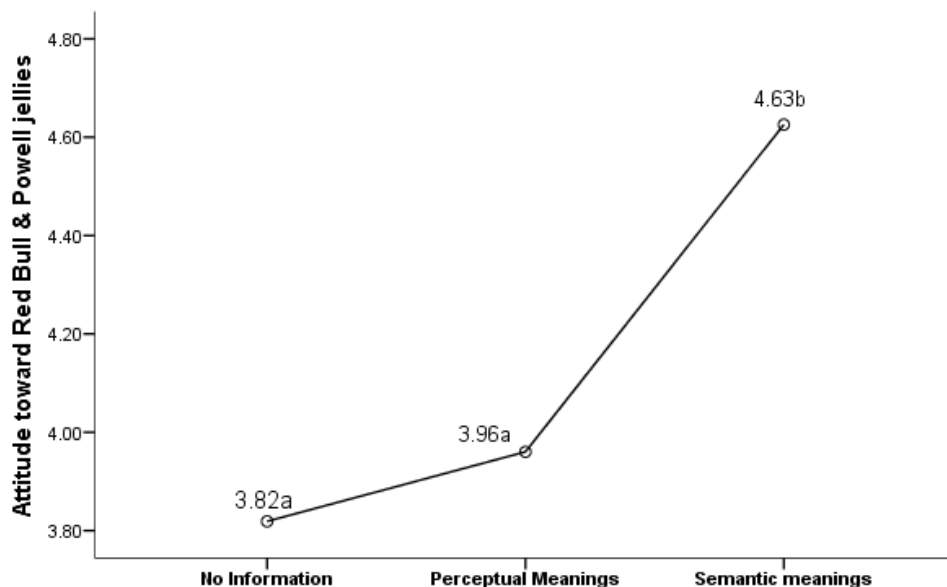


Figure 5.18. Effects of Red Bull-related meanings description on attitude toward the cobranded jellies

5.4.6.2 Evaluation of transfer of brand meanings

In addition to testing the effects that a description of the target brand's meanings have on a cobranded attitude, whether such verbal descriptions of target brand's features could influence the activation of relevant brand meanings on a cobranded product was also examined.

Transfer of Perceptual Meanings

Fizziness and Tartness are the 2 features that participants were asked whether they can associate with the new cobranded jellies. It was expected that a verbal description of the perceptual brand meanings associated with sensory signature would be activating all the relevant brand meanings. An analysis of covariance (ANCOVA) was performed to assess the effect the written description of perceptual Red Bull characteristics has on the activation of the relevant meanings on co-branded jellies. Prior attitudes toward the partner brands and the cobranding product category serve as covariates as in previous cobranding research (e.g., Swaminathan et al., 2015). In addition, as the written description involves the signature sour taste of Red Bull, liking of a sour taste was also added to the analysis as a covariate.

As expected, there is a significant effect for the description of perceptual Red Bull-related meaning on the activation of perceptual features on the cobranded product, after controlling for the effect of liking of Red Bull, liking of jellies, and liking of sour taste ($M_{\text{No Information}} = 4.00$ vs. $M_{\text{Perceptual Meanings}} = 4.49$ vs. $M_{\text{Semantic Meanings}} = 3.93$, $F(2, 162) = 3.23$; $p < .05$) (See Table 5.15). Two of the covariates are significantly related to the effect of the description of Red Bull-related meaning; liking of Red Bull ($F(1, 162) = 4.01$, $p < .05$), and liking of sour taste ($F(1, 162) = 5.86$, $p < .05$). Liking of jellies is not significantly related to the effects of the written description of perceptual features, but contained in the analysis ($F(1, 162) = 1.68$, $p = .20$).

Table 5.17: The effects of description of perceptual Red Bull-related meanings on activation of brand meanings on the cobranded jellies

	1	2	3
Experiment conditions	No Information	Perceptual meanings	Semantic meanings
Mean (SD)	4.00 ^a (.18)	4.49 ^b (.18)	3.93 ^a (.17)
n	56	54	58

Using planned contrast analysis, the effects of the description of perceptual Red Bull-related meanings on the activation of the brand meanings on the cobranded jelly were further analysed. Significant differences are found between the control condition, of No Information, and Description of Perceptual meanings ($M_{\text{No Information}} = 4.00$ vs. $M_{\text{Perceptual Meanings}} = 4.49$; $F(1, 162) = 4.11$, $p < .05$), and also between the Description of Perceptual meanings and Description of Semantic meanings ($M_{\text{Perceptual Meanings}} = 4.49$ vs. $M_{\text{Semantic Meanings}} = 3.93$; $F(1, 162) = 5.62$, $p < .05$), as shown in Figure 5.19.

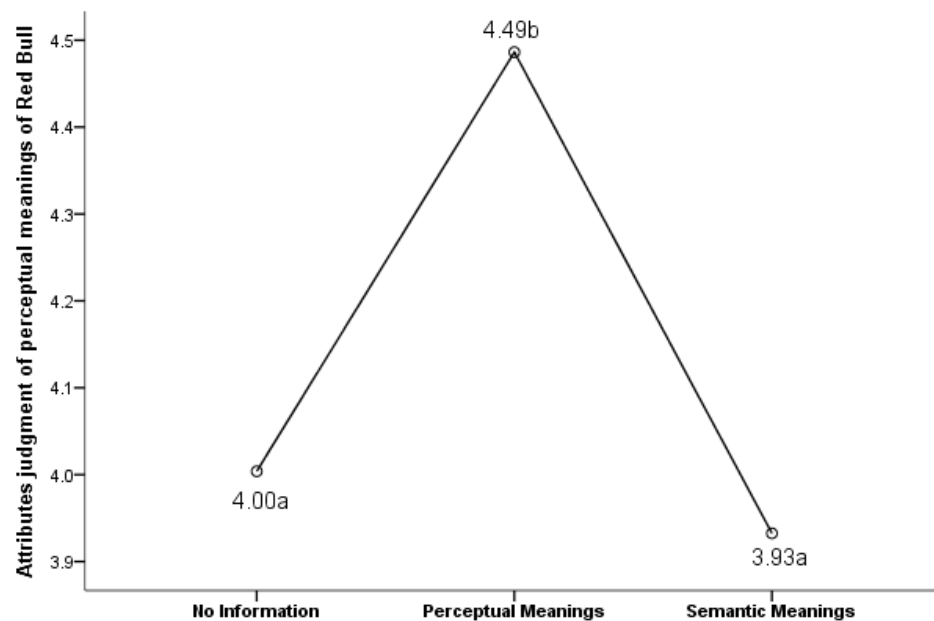


Figure 5.19. Effects of description of Red bull-related meanings on transfer of perceptual meanings

These findings show that the description of the signature sour taste of Red Bull was effective in activating the perceptual Red Bull meanings of tartness and fizziness from the cobranded product, but the description of the key, energetic, semantic nature of Red Bull does not activate the perceptual Red Bull meaning. Thus, I demonstrate that a sensory signature can exert its influence as an effective brand cue when it is directly experienced via the relevant sense. This is contrary to the simulation account, which assumes that re-experiencing the object, even reading about it, can re-enact the object-related associations. The reason why simulation account was not active might be due to the fact that while sourness is the closest feature of the signature taste of Red Bull, it might not be representative enough, so that it is not sufficient to activate the overarching brand meanings, including semantic ones.

Transfer of Semantic Meanings

Sports and Exciting were the two semantic meanings of Red Bull used to examine whether different verbal descriptions of Red Bull features can transfer to the cobranded jellies. It was expected that a verbal description of semantic brand meanings would be limited in activating all the relevant brand meanings other than the semantic features. An analysis of covariance (ANCOVA) was performed to assess the effects of the written description of key semantic Red Bull characteristic (i.e., energetic) has on the activation of Red Bull-related meanings on cobranded jellies. Prior attitudes toward the partner brands and the cobranding product category again serve as covariates as in previous cobranding research (e.g., Swaminathan et al., 2015).

There is a significant effect for the description of semantic Red Bull-related feature on the activation of semantic meanings on the cobranded product, after controlling for the effect of liking of Red Bull, liking of jellies, and liking of sour taste ($M_{\text{No Information}} = 4.38$ vs. $M_{\text{Perceptual Meanings}} = 4.52$ vs. $M_{\text{Semantic Meanings}} = 4.91$, $F(2, 164) = 3.16$; $p < .05$) (See Table 5.16). The covariates are significantly related to the effects of the description of Red Bull-related meaning; Liking of Red Bull ($F(1, 164) = 35.79$, $p < .001$), liking of jellies ($F(1, 164) = 16.53$, $p < .001$).

Table 5.18: The effects of description of key semantic Red Bull feature on activation of brand meanings on the cobranded jellies

Experiment conditions	1	2	3
	No Information	Perceptual Meanings	Semantic Meanings
Mean (SD)	4.38 ^a (.16)	4.52 ^a (.16)	4.91 ^b (.15)
n	56	54	59

Using planned contrast analysis, the effects of the verbal description of the key semantic Red Bull feature on the activation of Red Bull-relevant brand meanings on the cobranded jelly were further analysed. Significant differences are found between No Information (i.e., the control condition) and the Description of Semantic meanings ($M_{\text{No Information}} = 4.38$ vs. $M_{\text{Semantic Meanings}} = 4.91$; $F(1, 164) = 5.84$, $P < .05$). A marginally significant difference is found between Description of Perceptual meanings and Description of Semantic meanings ($M_{\text{Perceptual Meanings}} = 4.52$ vs. $M_{\text{Semantic Meanings}} = 4.91$; $F(1, 164) = 3.07$, $P < .10$), as shown in Figure 5.20.

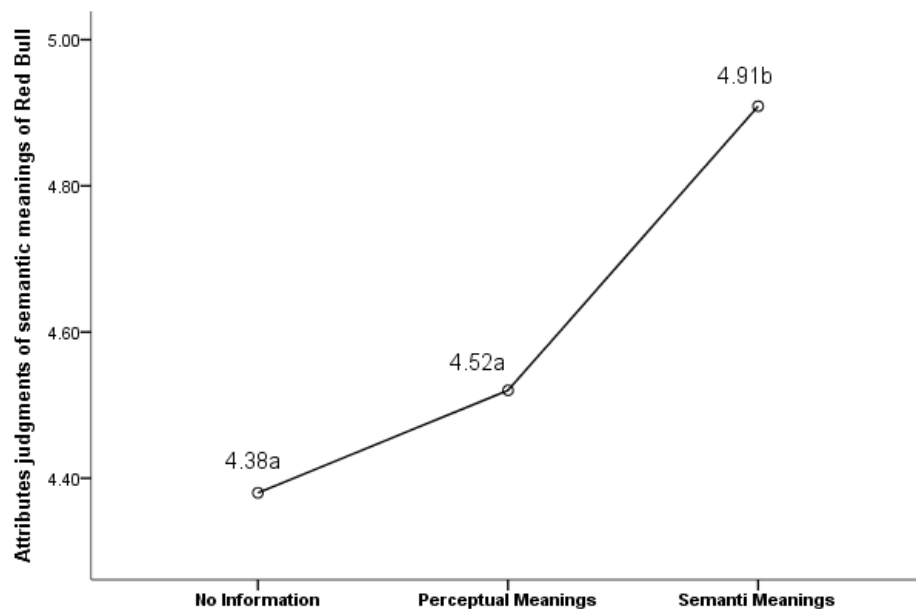


Figure 5.20. Effects of description of Red bull-related meanings on transfer semantic meanings

This shows that the verbal description of key semantic feature of Red Bull do activate the sports and excitement semantic meanings of Red Bull but do not activate the perceptual meanings of Red Bull from the cobranded product.

5.4.7 Summary of Experiment 4 Results

The purpose of this experiment is to compare whether the verbal description of the sensory signature of the Red Bull ingredient brand can influence the transfer of the relevant meanings to the cobranded product, as the signature taste of Red Bull does in Experiment 2. The description of the key perceptual feature, the sour taste of Red Bull, activates perceptual meanings of tartness and fizziness from the cobranded product but, unlike direct perceptual experience of signature taste, the verbal description could not activate the semantic brand meanings. The verbal description of the key semantic feature, energetic, aids retrieval of semantic meanings (e.g., sports and exciting) of the cobranded product but not the perceptual brand meanings. In addition, attitude toward the new cobranded jelly is found to be positively influenced by the description of semantic features but not by the description of perceptual features. The results show that the verbal description of the signature sour taste of Red Bull is not an effective brand cue in transferring brand meanings, nor does it have an impact on the attitude toward the cobranded product. Thus, in cases when direct perceptual experience is not available, such as a typical shopping trip, it would be better to emphasise the semantic meanings associated with functional or image benefits consumers get from consuming the product.

5.5 Experiment 5: The Effects of Presence of Product Picture on the Efficacy of Brand Cue

Previous experiments focused on demonstrating the efficacy of sensory signature in transferring the brand meanings to the cobranded product. Using actual perceptual experience of sensory signature of a brand, Experiment 1 and 2 examined the effects of sensory signature. These experiments compared the capability of a sensory signature to activate various brand meanings to the ability of a brand name, and found that sensory signature is as effective as brand name in transferring brand meanings to the cobranded product. In addition, it was found that the presence of both sensory signature and brand name drives meaning transfer to the cobranded product more effectively than when only brand name is present. The findings from Experiment 4 show that, unlike experiencing the actual sensory signature, a verbal description of a sensory signature cannot transfer semantic brand meanings to the cobranded product. In addition, the findings demonstrate that, when sensory signature cannot be directly experienced by a related sense, it is better to emphasise the functional benefit associated with key semantic brand meaning, to assist people develop a favourable attitude toward the product. Thus, Experiment 5 aims to further examine the efficacy of a verbal description of key semantic brand meaning found in Experiment 4 when the picture of a product is present. It is expected that the product's picture will help to simulate the perceptual experience of the product. So, here, a comparison is made between the effects of a verbal description of some perceptual feature, such as a sweet taste, on attitude toward the product, and the verbal description of the semantic brand meaning of Red Bull (energy-boosting), with or without a picture of the product being present.

Section 5.5 consists of 6 sub-sections. First, the objective of Experiment 5 is discussed in Section 5.5.1, followed by the discussion of the research design in Section 5.5.2. Then, Section 5.5.3 contains information about how sample size is decided and who the participants are. Next, the experiment materials and the dependent measures are discussed (Section 5.5.4) and, after that, the procedure taken to conduct the experiment is introduced (Section 5.5.5). Lastly, the results from Experiment 5 are reported, in Section 5.5.6.

5.5.1 Research Objective

The aim of Experiment 5 is to examine whether the presence of the product picture supports the verbal description of key semantic brand meaning to function as an effective brand cue. There are two main differences from Experiment 4, which shows that the verbal description of semantic brand meaning positively influences the attitude toward the cobranded jelly, compared to the verbal description of the signature taste, sourness. First, the new cobranded product category, candy, was used. Unlike Experiment 4, the key semantic brand meaning (i.e., energy-boosting) is not only a specific ingredient of the brand Red Bull, but it is also highly related to the cobranded product, candy. Thus, it is expected that the semantic brand meaning

will not influence the attitude toward Red Bull cobranding candy differently from the verbal description of the perceptual feature of the product (i.e., sweet taste).

Second, the use of the product picture is expected to make a difference on the attitude derived from using the verbal description of perceptual feature versus semantic meaning. According to grounded cognition (Barsalou, 2008), when people encounter an object, the perceptions that have been created via previous sensorial experiences of the object are simulated so that people can retrieve information about the object (e.g., what it looks like, or how it tastes) and what it represents (e.g., when it is used or the benefits it can provide upon consumption). Several neuroimaging studies support this proposition by demonstrating neural activation of the same sensory regions of the brain during mental simulation of an object (e.g., activation of the olfactory cortex while reading a word like cinnamon) (Barsalou, 2008; González et al., 2006; Zatorre & Halpern, 2005). Consumer research demonstrates that this mental simulation can occur not only by texts or verbal instruction used in advertising (e.g., Escalas, 2004; Mandel, Petrova, & Cialdini, 2006) but also simply with exposure to a picture of the product (e.g., Eelen, Dewitte, & Warlop, 2013; Elder & Krishna, 2012). Visual presentations of food are particularly powerful in initiating mental simulations which influences preferences, attitudes, and purchase intention of the product (Elder & Krishna, 2012; Xie, Minton, & Kahle, 2016). Taking these research findings into the current context, the presence of the picture of Red Bull cobranding candies should activate the taste cortices in the brain, eliciting simulation of the signature taste of Red Bull. Thus, when the product picture is present, the description of Red Bull-relevant taste other than its signature taste is less likely to exert favourable influence on the attitude toward the cobranding candy, while the description of the semantic meaning is not influenced by the presence of the picture.

5.5.2 Research Design

The focus of this experiment is to examine whether the presence of the product picture influences the effect the verbal descriptions of sweetness and energy-boosting Red Bull-related features have on attitude toward the new cobranding product. Thus, this experiment has a 2 (Picture of the product; Present vs. Not present) x 2 (Red Bull name; Present vs Not present) x 2 (Description of the candy feature: Sweet taste vs. Energy-boosting) between-subjects design.

5.5.3 Participants

In order to estimate the sample size required, power analyses using G*Power 3 was conducted (Faul et al., 2007). A *priori* power analysis reveals that a minimum sample size of 171 to have adequate power ($1 - \beta > .90$) with medium effect size ($f = .25$), incorporating a significance level at .05 (Faul et al., 2007).

176 participants recruited from Amazon M-Turk (Female = 52.9%, $M_{\text{age}} = 35.59$) whose age ranged between 18 and 69yrs, participated in the experiment. The number of participants was 68 each when the experiment conditions were distinguished based on whether the brand name Red Bull appeared information about the product. When the descriptions of the candy features were considered as a factor, the number of randomly-assigned participants for each condition ranged between 84 and 92.

5.5.4 Material and Scales

5.5.4.1 Stimulus material

In the current experiment, the presence of the ingredient brand name, Red Bull, is manipulated as well as the presence of the product picture. In addition, a written information chunk about different features of new cobranded candies is used to explicitly manipulate the characteristics of the product and measure the effects of the manipulated features on the attitudes toward the product. The information introduces the candy either as having a sweet taste or an energy-boosting feature. An excerpt from Experiment 4 is used as the product picture is included for some of the experimental conditions. These written descriptions are kept the same, in terms of length and structure, across different conditions. Participants were randomly assigned to one of the eight different conditions.

The following material demonstrates a few examples of the excerpts where the ingredient brand name, Red Bull, is not present, but does contain the product picture. The first excerpt contains information about the perceptual product feature, sweet taste:

Sweet Baron candies

These new candies with a **Sweet taste** target a variety of adult consumers such as busy professionals, college students and travellers on-the-go. The new candies are individually wrapped so that you can enjoy them anytime and anywhere!



The next excerpt example contains information about the semantic meaning of Red Bull, energy-boosting:

Energy Baron candies

These new **Energy-boosting** candies target a variety of adult consumers such as busy professionals, college students and travellers on-the-go. The new candies are individually wrapped so that you can enjoy them anytime and anywhere!



Full information regarding the stimuli used are provided in Appendix 11.

5.5.4.2 Dependent measures

After reading the written description, participants indicated their overall liking of the cobranded product using three items on a 7-point scale (1 = bad / negative / unfavourable, 7 = good / positive / favourable). Three attitude items used were combined and the grouping of them found to be valid and reliable ($\alpha = .97$).

To rule out potentially confounding effects, liking of candies was measured using one item on a 7-point scale (1 = not likeable, 7 = likeable). In addition, the familiarity of the name of candy brand used in this study was also measured on a 7-point scale (1 = unfamiliar, 7 = familiar), to ensure that participants are not influenced by any associations from the brand name Baron.

5.5.5 Procedure

The survey was created online using Qualtrics and then the survey link was uploaded to Amazon M-Turk. Before answering the questions in the survey, the participants were informed that the survey is to understand consumer feelings and attitudes toward the new product about

to be introduced in the survey. In order to increase the internal validity, they were told that it is very important that they complete all questions without any distraction. They were also asked not to complete the survey while completing other surveys at the same time. Participants' consent to participate in the survey was completed by clicking the button to the next page.

After agreeing to participate in the survey, they read brief instruction asking them to read the information given about a new product and to answer the questions. Participants were randomly assigned to one of the six conditions. After reading the written description, participants answered a brief questionnaire asking their attitude toward the new candy. Next, participants were asked how hungry they feel and the liking of candies, in order to alleviate potential confounding effects from these variables. In addition, they were also asked whether they are familiar with the candy brand "Baron." Finally, they were asked to answer some general demographic questions.

5.5.6 Results

The effects of the descriptions of candy features on attitude toward the new candies were measured. It was expected that the attitude toward Red Bull & Baron cobranded candies would be influenced by the presence of the product picture, because of the mental simulation the picture provides. While sweet taste is one of perceptual features of Red Bull, the most significant taste arising from the simulation should be the signature sour taste, so that emphasising the sweet taste of the Red Bull cobranded product will not have a positive influence on the product. Rather, the candies without the Red Bull brand name are more likely to be positively affected by such a description, as the sweet taste is often a key feature of candies in general. In addition, for these Red Bull & Baron cobranded candies, the attitude toward the product is expected to be more favourable when energy-boosting is the product feature described than when sweet taste information is provided about the candies. Lastly, the description of another Red Bull meaning, energy-boosting, is expected to influence participants to have a comparatively more favourable attitude toward "Red Bull & Baron" candies than "Baron" candies.

An analysis of covariance (ANCOVA) was performed. Prior attitudes toward the product category (i.e., liking of candies) served as a covariate, as in previous cobranding research (e.g., Swaminathan et al., 2015). The covariate is significantly related to the effects the description of candy features has on attitude toward the candies; Liking of Candy ($F(1, 167) = 39.39, p < .001$). Other possible covariates, such as the level of hunger, are not significant, so were removed from further analysis. The candy brand name Baron was found to be unfamiliar to the participants ($M_{\text{familiarity}} = 1.79$), and thus it was safe to assume that no particular associations with the name would influence the evaluation of the new candies.

The $2 \times 2 \times 2$ ANCOVA on the Red Bull name measure (i.e., whether the brand name Red Bull is present on the product or not) shows a significant main effect, $F(1, 167) = 8.42; p$

< .01, such that consumers tend to have a more favourable attitude toward the candies when the brand name Red Bull is not present ($M_{\text{Red Bull Not Present}} = 5.06$) compared to when the brand name is present ($M_{\text{Red Bull Present}} = 4.43$). In addition, analysis also reveals a marginally significant three-way interaction ($F(1, 167) = 3.18; p < .10$).

The follow-up analysis focused on the effect the presence of a product picture has on the attitude toward the product by presence or not of the brand name Red Bull, for each of the verbal descriptions of the candy features. When the product picture is not present, the main effects for the Red Bull name ($F(1, 79) = 1.44; p = .24$) and Description of the candy feature ($F(1, 79) = .04; p = .84$) are not significant, as shown in Figure 5.21. This implies that, unlike the finding in Experiment 4, that the description of key semantic meaning of Red Bull (i.e., energy-boosting) does not influence the attitude toward the cobranded product. This could be due to the fact that energy-boosting is the feature associated with the candy as well; so that this information did not encourage participants to favourably evaluate the cobranded product. In the previous experiment, the cobranded product category chosen was the jellies, for which energy-boosting is not a key feature.

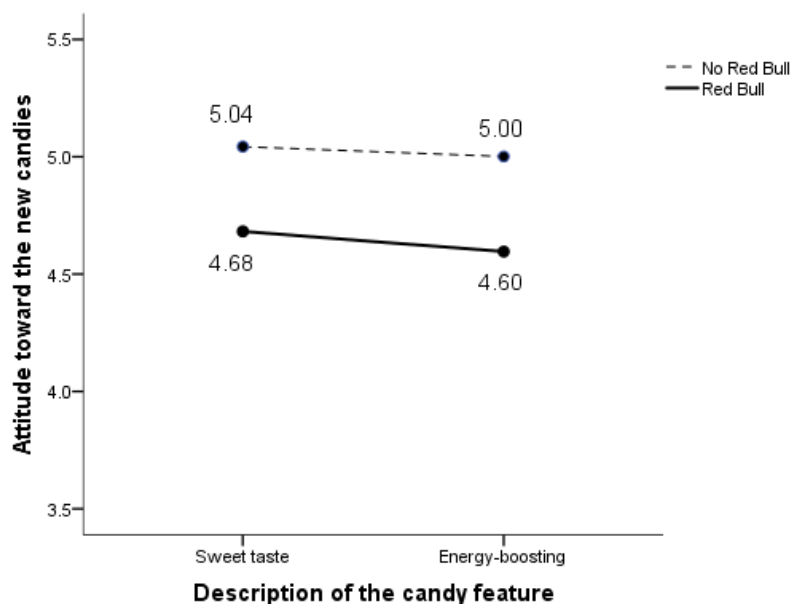


Figure 5.21. Effects of description of candy features on attitude toward the candies when product picture is not present

The significant main effect is found again for the Red Bull name ($M_{\text{Red Bull Not Present}} = 5.06$ vs. $M_{\text{Red Bull Present}} = 4.26$, $F(1, 87) = 7.12; p < .01$) when the product picture is present. There is also a significant interaction between the presence of the Red Bull name and the Description of the candy feature ($F(1, 87) = 6.40; p < .05$) (See Figure 5.22). In other words, the effect of the description of candy features on attitude toward candy is different depending on whether the brand name Red Bull is present within the candy information or not (i.e., Baron candies versus Red Bull & Baron candies). Similarly to when the product picture was not present, if the name

Red Bull is not present then attitudes toward the new candies are not significantly different no matter which feature of the candies is emphasised ($M_{\text{Sweet Taste}} = 5.30$ vs. $M_{\text{Energy-boosting}} = 4.81$, $F(1, 87) = 1.35$; $p = .25$). However, when the brand name Red Bull is present, emphasising the semantic feature of energy-boosting makes a more significant difference on attitude toward the new candies that when emphasising the sweet taste of the product emphasised ($M_{\text{Sweet Taste}} = 3.76$ vs. $M_{\text{Energy-boosting}} = 4.77$, $F(1, 87) = 5.93$; $p < .05$). In addition, when the candy is described to have a sweet taste, participants have a significantly less favourable attitude toward Red Bull cobranded candies compared to non-Red Bull candies ($M_{\text{Red Bull Not Present}} = 5.30$ vs. $M_{\text{Red Bull Present}} = 3.76$, $F(1, 87) = 14.27$; $p < .001$). These findings correspond to predictions made based on mental simulation, which assumes that the visual presentation of food can activate taste-related cortices which, in turn, influence the information people retrieve about the food. Thus, the most likely and strongly activated taste from the visual presentation is the signature taste, so that the description of a sweet taste is not able to elicit as favourable an attitude toward Red Bull cobranded candies as the description of the key semantic meaning of Red Bull (i.e., energy-boosting).

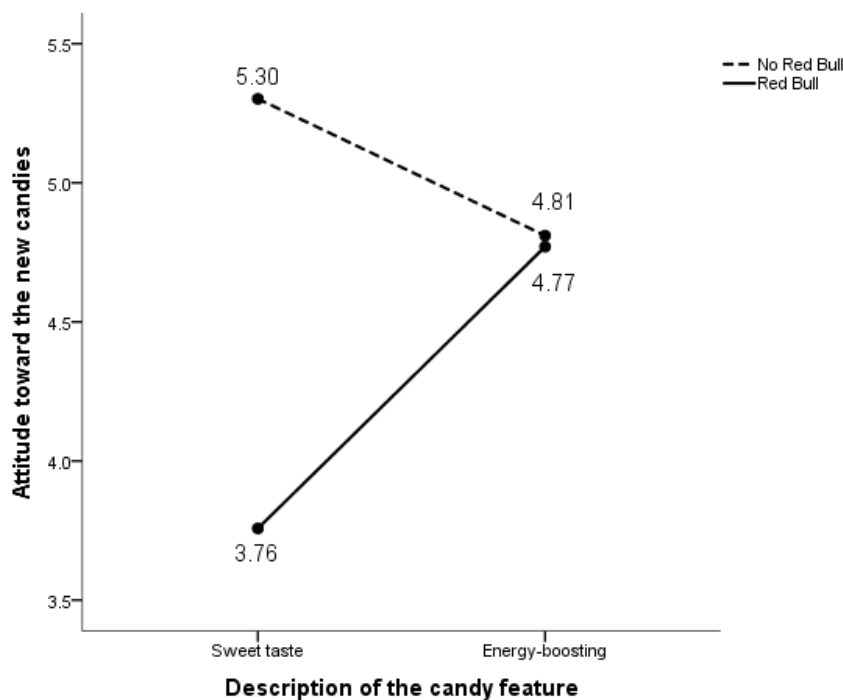


Figure 5.22. Effects of description of candy features on attitude toward the candies when the product picture is present

5.5.7 Summary of Experiment 5 Results

The purpose of this experiment is to investigate whether the presence of the product picture can support the verbal description of key semantic brand meaning to perform as an effective brand cue that can positively influence the attitude toward the cobranded candies. Its effect was compared to when the generic perceptual feature of the candies, sweet taste, is

emphasised. The findings demonstrate that the verbal description of the semantic feature of Red Bull (i.e., energy-boosting) exerts a favourable influence on attitude toward the cobranded candies. In addition, the attitude toward energy-boosting candies is favourable compared to the cobranded product which emphasises its sweet taste, as the product picture might have encouraged the simulation of the signature sour taste.

Chapter 6 CONCLUSION AND GENERAL DISCUSSION

The purpose of this thesis was to investigate the efficacy of the sensory signature of a brand as a brand cue that can transfer brand meanings in a cobranding context. The previous five chapters have introduced the overarching research question (Chapter One), reviewed the relevant literature required to address the research question in Chapter Two, and proposed the role of sensory signature as a brand cue and developed propositions regarding how multiple brand cues (i.e., sensory signature and brand name) can contribute to the transfer of brand meanings in Chapter Three. An explanation of the research methodology used and a proposed conceptual framework of how sensory signature would function in the transfer of brand meanings is made in Chapter Four, whilst Chapter Five reports the procedure for, and results of, the five main experiments used to investigate the efficacy of sensory signature in transferring brand meanings in a cobranding context.

This chapter concludes the thesis by reiterating the overall research purpose (Section 6.1), the findings of each main experiment (Section 6.2), Section 6.3 claims and supports a contribution to theory and Section 6.4 explains the implications for marketing practice. Section 6.5, exposes the limitations of the research and subsequent opportunities and directions for future research directions and the concluding remarks of the researcher are included in a short Section 6.6.

6.1 Overall Research Purpose

Prior to this thesis, the effect of sensory input, based upon a perceptual brand experience, on the consumer evaluation of a brand or product had been investigated at a generic, rudimentary level. While the relevant research has found that a sensory cue can elicit abstract, semantic meanings, such as the association between colour green and eco-friendliness, the nature of, and the way sensory cue influences, brand evaluation is still under-investigated. This thesis proposes and examines whether a sensory signature can function as an effective brand cue that is comparable to a brand name in transferring brand meanings in a cobranding context. Similarly, the efficacy of sensory signature is investigated by determining whether it can retrieve brand meanings from a cobranded product created by a partner brand with a moderately incongruent fit. In addition, the processes by which sensory signature, versus a brand name, influences the transfer of brand meanings is explored.

The overall purpose of this thesis is to investigate the efficacy of sensory signature as an effective brand cue, capable of transferring brand meanings in a cobranding context. This purpose is reiterated into the overarching research question posed in Chapter One:

“Whether and how can a sensory signature contribute to the transfer of brand meanings in a cobranding context?”

The answer to this broad research questions was sought through five experiments. The overall findings highlight that a sensory signature of brand does indeed function as an effective brand cue, that it is comparable to a brand name. The specifics of the findings from each experiment are illustrated in the next section.

6.2 Discussion of the Research Findings

Across Five main experiments, I found empirical evidence demonstrating the efficacy of sensory signature as a brand cue in transferring brand meanings in a cobranding context. Each experiment aimed to examine this effectiveness in various different ways.

Experiment 1 aimed to investigate the efficacy of sensory signature as a brand cue by focusing on whether sensory signature can be an effective brand cue that is as diagnostic as brand name. I predicted that if sensory signature is diagnostic, then it implies that the cue can encompass various array of brand-related meanings and is representative of the brand so as to effectively differentiate the brand from its competitors. Experiment 1 investigated whether sensory signature has diagnostic nature of a brand cue by examining the transfer effects of brand meanings with different level of specificity to Johnson's Baby (i.e., Johnson's Baby-specific brand meanings vs. the brand meanings that are overlapping between Johnson's Baby and the cobranded towel product vs. the brand meanings that are more relevant to the cobranded product).

Before conducting the main experiment, a list of brand meanings of Johnson's Baby was obtained by employing part of the Multi-Sensory Sculpting (MSS) approach. Unlike widely used solely cognition-based brand meaning elicitation methods, such as word association tests, MSS enables subjects to express what they think of the brand by encouraging them to physically re-experience the brand experience. In this way, I could acquire brand meanings that are rich in connotation, better representing consumers' perception of the brand and more responsive to sensory signature. For the main experiment, the brand meanings obtained from MSS were categorised based on their specificity to Johnson's Baby.

The results of Experiment 1 are summarised into two key findings. First, the signature scent of Johnson's Baby exerted a significant influence that is comparable to brand name in transferring the brand-specific meanings to a cobranded towel, even when the fit between the product categories is moderately incongruent. The fact that the results were obtained from the use of both explicit and implicit measures, helps to strengthen the finding and demonstrate the diagnostic nature of sensory signature as an effective brand cue. Second, the impact of brand cue(s) on the cobranded product is stronger as the brand meanings are specific to Johnson's Baby. The explicit attribute judgements of activation of overlapping and towel-relevant brand meanings show a ceiling effects, which demonstrates the failure to better activate those meanings as participants perceive them to be strongly associated with the towel, cobranded product. However, as there are no significant differences in terms of the activation of brand

meanings between the “no brand cue” and the “brand cue” conditions, it is hard to argue that the presence of brand cue(s) transferred those brand meanings to the cobranded product. Thus, considering that the main purpose to engage in cobranding is to take advantage of the positive brand meanings of partner brand, if the transferred brand meanings do not add value to the evaluation of cobranded product, then this needs to be taken into consideration when deciding partner brands.

The purpose of Experiment 2 was twofold. First was to examine the efficacy of sensory signature by using different modalities. While the signature scent of Johnson’s Baby was used in Experiment 1 to examine its capability to activate the brand meanings from the cobranded towel, the signature taste of Red Bull was used as the brand cue to be used for the cobranded lollies. Second, more importantly, using serial mediation analyses, the path by which brand meanings are transferred when sensory signature (vs. brand name) was examined. Signature taste was expected to exert strong influence in activation of Red Bull-related brand meanings. This is because as sensory signature has a strong associative link with brand information, it can function as an unambiguous cue, similarly to a brand name, that can grab consumers’ attention relatively easily and influence their subsequent judgment about the cobranded product without the need for effortful processing.

The findings from Experiment 2 provide additional support for the prediction that the sensory signature of a brand can act as an effective brand cue that can transfer brand meanings to a cobranded product. The findings show that, again, the signature taste of Red Bull performs as an effective brand cue in transferring brand meanings, no matter whether they are perceptual or semantic. The signature taste is more effective than brand name in activating perceptual brand meanings from the cobranded lolly and, for activation of semantic brand meanings, it was as effective as brand name. In terms of the implicit transfer, the presence of the brand cue exerts more significant effects compared to the no brand cue condition. This indicates that the signature taste of Red Bull is strongly associated with the brand and is perceived as distinctive and representative of it. These findings imply that a physical experience is a necessary condition for sensory input to activate semantic meanings. This is contrary to Zhang and colleagues’ view (2012), who found that physical experience is neither a necessary nor a sufficient condition for activation of abstract meaning associated with that physical experience (i.e., carrying a heavy bag and the concept of importance). This divergent finding may be due to the fact that the relationship between sensory signature and semantic meanings examined in this thesis is non-metaphorical, while the relationship tested by Zhang and colleague is metaphorical.

The results of the path analysis of the brand meanings reveal that the signature taste of Red Bull serially influences the transfer of perceptual meanings and semantic meanings which, in turn, increases the liking of the cobranded lolly. More importantly, it is also found that this signature taste could directly activate semantic brand meanings. This finding adds to the

previous findings that demonstrate the brand-representative nature of a sensory signature. This is because unless a solid, strong connection exists between the brand and its sensory signature, such as the one a strong brand name possesses, the direct activation of abstract, semantic meanings is unlikely to occur. Thus, the findings from Experiment 2 provide the evidence that supports the efficacy of sensory signature as an effective brand cue and shows how brand meanings are transferred in a cobranding context.

The aim of Experiment 3 is to demonstrate that effectiveness of signature taste in retrieving the various brand meanings is not derived from the difference in perceived strength of the taste in different experimental conditions. The reason for this prediction is that previous literature showed that the intensity of physical experience can influence the processing of cognitive concepts (e.g., Connell & Lynott, 2012; Gatti, Bordegoni, & Spence, 2014). Both the Red Bull taste lollies and No Red Bull taste lollies used in this experiment were made using the same formula used in Experiment 2. The results reveal that, while the perceived intensity of the tastes of both types of lollies was the same, a significant difference existed in evaluation of the cobranded lollies across conditions. This implies that it is not the difference between the perceived intensities of the taste, but the signature taste of Red Bull itself, that drove the transfer of brand meanings to the cobranded product.

Experiment 4 aimed to compare whether the description of the sensory signature of a cobranded product can influence consumers' evaluation of the product as effectively as the signature taste of Red Bull. The reason for this prediction is based on the simulation account of grounded cognition. According to the simulation account, just reading the food-related word should be good enough to activate semantic brand meanings because the taste-related brain region will be re-activated. The results, however, show that the verbal description of a signature taste cannot transfer semantic meanings. In addition, only a semantic verbal description of Red Bull features, not the perceptual description, has a positive effect on attitude toward the cobranded product. These results imply that in situations when tasting a cobranded product is not available, and the communication means to consumers is limited to verbal description, then it is better to emphasise the key semantic meanings of the brand.

The purpose of Experiment 5 aims to further examine the efficacy of a verbal description of key semantic brand meaning found in Experiment 4 when the picture of a product is present. Its effect was compared to when the generic perceptual feature of the candies, sweet taste, is emphasised. The findings demonstrate that the verbal description of the semantic feature of Red Bull (i.e., energy-boosting) exerts a favourable influence on attitude toward the cobranded candies. In addition, the attitude toward energy-boosting candies is favourable compared to the cobranded product which emphasises its sweet taste, as the product picture

might have encouraged the simulation of the signature sour taste. These findings correspond to predictions made based on mental simulation, which assumes that the visual presentation of food can activate taste-related cortices which, in turn, influence the information people retrieve about the food. Thus, it can be concluded that the effects of sensory signature can meaningfully influence the attitude people have toward the new cobranded product when visual information about the product is present.

In summary, the efficacy of sensory signature as a brand cue that can transfer and activate the array of relevant brand meanings was investigated and confirmed by conducting a series of experiments. The sensory signature of a brand is found to have a diagnostic nature such that it is found to have strong associative links with the brand meaning and function as effectively as brand name in transferring brand meanings to the cobranded product. The transferred brand meanings that could actually benefit the host brand were those specific to the ingredient brand; implying that specificity of brand meaning needs to be considered in the selection of a partner brand. The efficacy of a sensory signature was further supported by comparing the effect it has on the attitude toward the cobranded product. Contrary to the valid effect of actually tasting the signature taste on activating semantic brand meanings, its verbal description failed to have the same effect. As this does not correspond to what the simulation account has assumed, it suggests further research is required. The verbal description of a taste similar to the signature taste was found to have an unfavourable influence on the attitude toward the cobranded product compared to when the signature semantic feature is emphasised.

6.3 Contributions to Theory

This thesis offers substantial theoretical contributions. First, this thesis contributes to the branding literature by demonstrating sensory signature as an effective brand cue comparable to brand name. Brand name has been widely used in various instances where relevant brand information is required to be retrieved from consumer memory. Cobranding is one such instance where the brand cue should be representative enough, and hold strong connections with relevant brand meanings, so that partnering with another brand cannot dilute its influence onto the cobranded product. Sensory signature exerts similar influences as brand name in retrieving the brand meanings, even semantic ones, and such influence is supported by the results of both explicit and implicit measures.

In addition, the efficacy of a sensory signature is further supported by the fact that it could transfer brand meanings even when the fit between the partner product categories is moderately incongruent. While there are many studies demonstrating that high fit between product categories of partner brands is necessary for favourable evaluation of cobranded product, many other researchers indicate that a moderately incongruent fit can generate better brand attitudes. The use of a sensory signature is also found to be effective enough to resolve

the suspicion and uneasy feeling that might arise from an incongruent fit, and transfer the brand meanings to a cobranded product. In addition, the transfer is effective even when the fit between the product categories is moderately incongruent supports the current literature arguing that the judgment of fit can be influenced by relatedness of the key feature of ingredient brand to cobranded product category.

Second, another important contribution is made to the use and understanding of Meaning Transfer Model. Previously, how brand meanings are transferred in a cobranding context was not so clear (Miller & Allen, 2012). Strictly speaking, meaning transfer model is not a mechanism per se but rather phenomenon. Many researchers have tried to how meanings transfer from one party to the other. For example, misattribution theory was one to explain such how factor. The path analysis conducted with a serial mediation reveals modal priming as one of the possible routes by which brand cue drives the transfer of brand meanings to influence the attitude toward the cobranded product. This research used sensory brand cue, which has not been tested as a brand cue in cobranding context before, and compared the path it delivers brand meanings by with that of brand name, which has been the most popularly-used brand cue in the literature. The findings not only contributed to the literature of the Meaning Transfer Model by demonstrating the process by which meaning transfers occur, but also sheds light on the extant Grounded Cognition literature by adding evidence of modal priming performing as an underlying mechanism when sensory signature was used as the cue. The presence of a sensory signature cue on a cobranded product increased the access to salient perceptual brand meanings, which may then activate semantic brand meanings.

Lastly, this thesis makes an important contribution to the application of grounded cognition in consumer research by adding new evidence on how physical experience contributes to the cognitive processing of a concept. Based on findings from the serial mediation analysis, it is found that re-experiencing the signature taste not only activates abstract, semantic brand meanings via activation of the taste-related perceptual meanings, but also it can directly activate semantic brand meanings. The verbal description of signature taste, however, could not activate semantic brand meanings. Thus, while this thesis emphasises the importance of direct physical experience on processing of brand information, it contends that simulation based on a product's taste-related words is not very effective. This is because the exact nature of brand-specific features such as a sensory signature is hard to deliver linguistically, and a generic description of a sensory feature may not be good enough. For example, the signature taste of Red Bull was described as either 'distinctive taste' and describing the taste as 'sour' was not good enough to activate the semantic brand meanings.

6.4 Contributions to Practice

Along with its theoretical contributions, the findings of this thesis have a range of practical implications useful for marketing managers. The findings demonstrate that the usefulness of sensory aspects associated with the brand is not limited to the visual effect, but

can be extended to the relatively less researched and applied sensory aspects of scent and taste. This lack of research is partly due to the fact that visual information is most widely used and easily distinguishable sensory information. However, as the signature scent and signature taste can exert substantial influence on evaluation of the related product, marketing practitioners need to consider how to develop and embed a sensory signature into their product.

As this thesis suggests that the efficacy of sensory signature in transferring brand meanings in cobranding context is comparable to a brand name, the brand managers searching for partner brands with which to employ cobranding strategy with can consider whether the prospective partner brand has a sensory signature and, and if there is, how it would be incorporated. In this way, brand managers can make more informed decisions on choosing the right partner brand that can bring the most benefit to the brand, establishing competitive advantage over competing brands (Roy, 2010).

Moreover, the findings also highlight the need to emphasise the semantic features of partner brands when the perceptual features cannot be directly experienced, such as in advertising. As a description of a semantic feature of a product is found to exert a more significant influence than the description of signatory perceptual features on consumers' evaluation of cobranded product, the former should be emphasised in advertising, or on the front of the packaging. If the main driver of engaging in cobranding is to incorporate a sensory signature of the partner brand, however, then making the picture of the product prevalent can improve the attitude toward the new cobranded product.

6.5 Limitations and Future Research Directions

This thesis has a number of limitations that may be addressed in future research. One key limitation is that the use of reaction time measure could have been made with more precision. The number of participants in each condition varied because only one reaction time script can be operated at a time, so that if the attendance of the workshop was low then the number of participants in the condition tested in that workshop was low. In addition, of those who answered the reaction time measure the first participants might have been primed with the ingredient brand (e.g., Johnson's Baby or Red Bull) as they were exposed to the list of the brand-related meanings, and it might have influenced the responses to the subsequent explicit measures. In other words, the transfer effects observed could be due to the priming effect which occurred while responding to the reaction time measure, and not by experiencing the signature scent or signature taste. This might be the reason why order effects were observed. Thus, in order to argue that the observed transfer effects are truly due to the sensory signature, the procedure needs to be more accurate and strategic.

Future research could attempt to manipulate the signature brand cues in various other ways than explored here. In order to strengthen the effectiveness of sensory signature as a brand cue, the investigation on whether the findings in this thesis would apply to other senses,

such as sound or colour, would be needed. As sensory signature is a sensory brand cue linked to the brand strongly enough to be recognised as representative feature of the brand, the generalisability of its effects across different modalities would strengthen the efficacy of sensory signature as a brand cue. Moreover, the efficacy of sensory signature found in this thesis provides the justification on why brands should concentrate on developing representative perceptual feature of their brands.

While the interest of this thesis is in demonstrating the effects of a brand cue that has signatory sensory nature, there also exist verbal signatures, such as “Red Bull gives you wings” or “Just Do It” from Nike. As these brand-specific slogans also have a signatory nature, how they contribute to the transfer of brand meanings and how their effects are different from a sensory signature of the brand might provide evidence of another brand cue that can be utilised in various branding strategies.

Lastly, as the efficacy of sensory signature was demonstrated, it may function as an effective brand cue in other types of cobranding, other than the ingredient cobranding strategy examined in this thesis. For example, the Global Fund to Fight AIDS introduces “Product Red” with its partners, such as Coca Cola or Starbucks, to support HIV/AIDS programs. As the name Product Red implies, the collaborated product has signatory red colour. Would, then, the intention to purchase the product or meanings transferred from the cause to the brand be higher for Coca Cola compare to Starbucks, as the signatory colour of the former matches with the Product Red better? This would also contribute to developing deeper understanding on bi-directional transfers of brand meanings in a cobranding context. While the meaning transfer model has been useful in understanding the movement of meaning through marketing and consumption, the major limitation of this model is that it conceptualises the meaning transfer as a one-way trajectory (McKechnie & Tynan, 2006). With few empirical studies examining this reciprocal and equal transfer of meaning between partner brands, one of the contributions of this in the future will lie in empirical demonstration of bidirectional nature of meaning transfer, particularly when sensory signature is used.

6.6 Concluding Remarks

This thesis will provide novel insights to the literature on cobranding, Meaning Transfer Model and Grounded Cognition. The findings of this thesis demonstrate the efficacy of sensory signature as an effective brand cue that is comparable to brand name in transferring brand meanings to a cobranding product. Overall, this thesis highlights the importance and the need to better understand perceptual brand experiences via the influences that sensory signature has on product evaluation. With the rapid increase in the number of cases adopting cobranding strategies, the effectiveness of sensory signature will become a more prominent topic for both academics and practitioners.

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Appendix 1

Classifications of different cobranding types

Hierarchical ¹⁵ typology of Co-branding				Definition	Outcome	Examples
High Integration ¹⁶ (Newmeyer et al., 2014, p. 105)	Physical Alliance (James, 2006);	A separate and unique product (Washburn et al., 2000)	Composite cobranding (Cao & Sorescu, 2013)	Composite cobranding occurs "when both brands have a significant contribution to the formulation and positioning of the cobranded product, and when no similar version of this product was available in the marketplace prior to the cobranding agreement." (Cao & Sorescu, 2013, p. 947)	Single product	Sonicare Crest IntelliClean toothbrush system Samsung and Nokia handsets Betty Crocker Hershey's Ultimate Fudge
		Physical product integration	Ingredient cobranding (Cao & Sorescu, 2013, p. 947)	Ingredient cobranding is "an agreement whereby the secondary brand is an identifiable ingredient that contributes to product formulation, for products that were previously available in similar forms when they were single branded. The secondary brand is featured on the package; however, the primary brand's characteristics remain clearly dominant." (Cao & Sorescu, 2013, p. 947)	Single product	Diet Coke with Splenda Intel-inside (manufacturer and supplier relationship: Boeing and GE ← B2B ingredient co-branding relationships)
	Symbolic Alliance	Joint promotion	Endorsement cobranding (Cao &	Endorsement cobranding occurs "when the secondary brand makes no contribution to product formulation but only appears on the package of the	Two separate brands	Crest Barbie toothpaste Disney – McDonald's alliance tied to movie characters

¹⁵ Hierarchical in terms of integration of cobranding partnership.

¹⁶ Integration refers to the extent to which the partner brands are intertwined in form and function.

Low Integration		Joint advertising	Sorescu, 2013, p. 946)	cobranded product for promotional purposes. The two brands are “endorsing” each other as they took to leverage the other brand’s positive associations.” (Cao & Sorescu, 2013, p. 947)		Starbucks Coffee in a Barnes & Noble store Retailing cobranding
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Appendix 2

The list of materials included in a sensory toolkit

Senses objects stimulate	Examples for object characteristics	Examples for materials used by von Wallpach et al. (2013)	Materials used in Pre-test (1) for Experiments 1 and 2
touch	soft, tender	cotton, wax, fur, plasticine, sand, powder, silk	Cotton (e.g., cotton pad), fur, plasticine, sand, powder (i.e., grained bread crumbs), silk, feather
	hard	stone, metal, glass	Stone (not polished), metal. glass (not drinking glass but raw material), aluminium foil
	coarse	sand paper, stone	Sand paper, stone
	smooth	stone, metal, glass, plastic	Stone, metal, glass, plastic
	pointed, sharp	needle, drawing pin, toothpick, razor blade	Needle, drawing pin, toothpick, razor blade, nail
	stump	sticks	
	round	marbles, pearls, balls	Marble (round & polished), Stone, pearls, small balls
	angular, square, edged	stone, lego, wooden building blocks	Stone, wooden building blocks, lego
	cold	glass, crystal, stone, metal, fluids, cold drinks and food	Glass, crystal, stone, cold drinks (i.e., orange juice) and food (i.e., ice cream)
	warm, hot	lighter, fire (e.g., candle), hot drinks and food	Lighter, fire (e.g., candle), hot drinks and food
	slippery	slime, jelly	Slime, jelly
	trickling, flowing	lentils, sand, fluids	Lentils, sand, fluids (e.g., water)
taste	salty	salt, chips	Salt, chips
	spicy	wasabi nuts, chilli	Wasabi snack, chilli powder
	sweet	sugar, chocolate, jelly beans, different sweets	Sugar, chocolate, jelly beans, different sweets
	sour	pickles, vinegar chips	Pickles, vinegar chips
	hot/cold	different drinks and food	Different drinks and food (e.g., hot food; soup & cold food; ice cream)

smell	fruity scent	fruit aromas (e.g., strawberry, vanilla) , fruits, and food or drinks with fruity scent	
	nature scent	natural aromas (e.g., forest, flowers, ocean) and natural materials (e.g., wood, resin, leaves, grass)	
	aromatic spicy scent	spices	
	synthetic scent	perfumes, different synthetic material (e.g., plastic)	Laundry detergent
audition	music	ipods with different music genres (e.g., rock, pop, classical music)	Smartphone apps
	natural (sounds)	ipods with different nature sounds	Smartphone apps
	human (sounds)	ipods with different human sounds (e.g., yawning, talk)	Smartphone apps
vision	colourful	different materials with different colours	Fabric with multiple colours on
	bright, glaring	crystal, glass, fire, materials with bright colours	Glass, fire, materials with bright colours
	dark	materials with dark colours	Materials with dark colours (e.g., dark coloured lego)
	glimmering	glitter, crystal	Glitter, crystal

Appendix 3

Jastrow's Rabbit-Duck Illusion

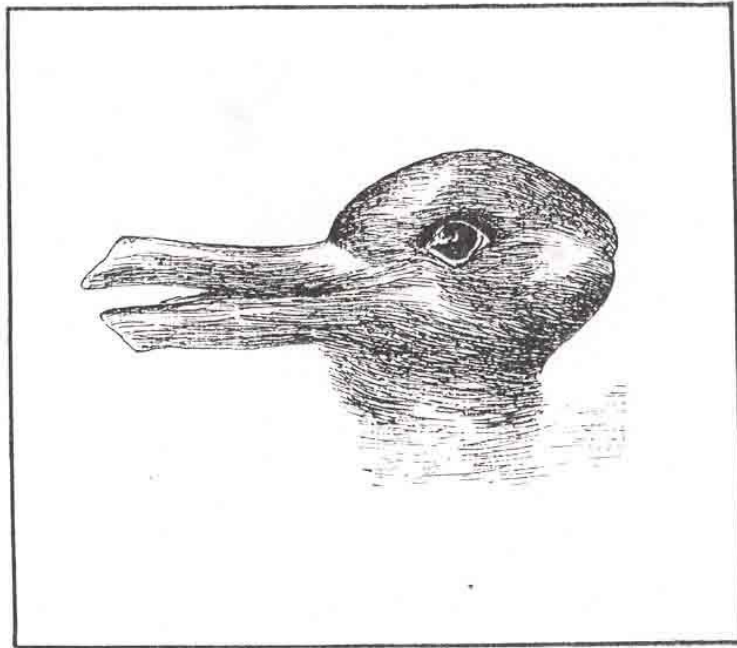


FIG. 20.—Do you see a duck or a rabbit, or either? (From Harper's Weekly, originally in *Fliegende Blätter*.)

Appendix 4

The effects of brand cue(s) on reaction time measure to Johnson's Baby-relevant meanings

Table 4.1: The effects of brand cue(s) on reaction time measure to Johnson's Baby specific brand meanings

	Experiment conditions	1	2	3	4	
		No brand Cue	Taste only	Brand Name only	Taste and Brand Name	
All 4 meanings	Mean	1124.25 ^a	833.26 ^b	832.95 ^b	901.69 ^b	<i>F</i> (3,41) = 2.48, <i>P</i> < .10
	(SD)	(375.68)	(200.55)	(194.37)	(173.73))	
	n	5	13	11	12	
More than 3	Mean	11132.42 ^a	898.80 ^b	826.74 ^b	884.12 ^b	<i>F</i> (3,71) = 3.33, <i>p</i> < .05
	(SD)	(308.14)	(188.83))	(173.58))	(240.90))	
	n	7	27	16	25	
More than 2	Mean	1091.69 ^a	941.35 ^b	828.99 ^b	916.91 ^b	<i>F</i> (3, 98) = 3.32, <i>p</i> < .05
	(SD)	(300.48)	(203.67)	(196.91)	(295.88)	
	n	13	34	25	30	
More than 1	Mean	1068.89 ^a	946.97 ^b	845.96 ^b	931.95 ^b	<i>F</i> (3, 109) = 2.90, <i>P</i> < .05
	(SD)	(301.70)	(196.20)	(211.43)	(302.72)	
	n	19	37	26	31	
Missing value replaced	Mean	1032.71 ^a	911.74 ^b	879.84 ^b	925.89 ^b	<i>F</i> (3, 113) = 3.48, <i>p</i> < .05
	(SD)	(195.86)	(157.38)	(147.50)	(187.26)	
	n	21	37	28	31	

Note. Different subscripts represent significant means difference at least at the .05 level.

Table 4.2: The effects of brand cue(s) on reaction time measure to the overlapping meanings

	Experiment conditions	1	2	3	4	
		No brand Cue	Taste only	Brand Name only	Taste and Brand Name	
All 4 meanings	Mean	844.75	787.50	808.56	809.03	$F(3,61) = .23,$ $P = .88$
	(SD)	(196.26)	(174.95)	(172.73)	(155.97)	
	n	9	19	18	19	
More than 3	Mean	968.51 ^a	792.41 ^b	796.01 ^b	844.76 ^b	$F(3,99) = 3.28,$ $p < .05$
	(SD)	(230.84)	(162.60)	(154.04)	(176.71)	
	n	17	33	25	28	
More than 2	Mean	956.49 ^a	796.87 ^b	820.40 ^b	856.41 ^b	$F(3, 98) = 3.09,$ $p < .05$
	(SD)	(220.88)	(162.21)	(209.20)	(180.44)	
	n	19	34	28	30	
More than 1	Mean	1027.77 ^a	816.90 ^b	820.40 ^b	854.46 ^b	$F(3, 111) = 3.55,$ $P < .05$
	(SD)	(434.39)	(198.96)	(209.21)	(177.74)	
	n	21	35	28	31	
Missing value replaced	Mean	1027.77 ^a	816.90 ^b	818.28 ^b	854.46 ^b	$F(3, 111) = 3.58,$ $p < .05$
	(SD)	(434.39)	(198.96)	(209.00)	(177.74)	
	n	21	35	28	31	

Note. Different subscripts represent significant means difference at least at the .05 level.

Appendix 5

The effects of brand cue(s) on reaction time measure to Red Bull-relevant meanings

Table 5.1: The effects of brand cue(s) on reaction time measure to perceptual meanings of Red Bull

	Experiment conditions	1	2	3	4	
		No brand Cue	Taste only	Brand Name only	Taste and Brand Name	
All 4 meanings	Mean		925.29	667.63	973.20	$F(2,10) = 1.41$, $P = .29$
	(SD)	0	(197.74)	(75.48)	(268.75)	
	n		6	2	5	
More than 3	Mean		962.50	1083.77	1103.86	$F(2,48) = 1.08$, $p = .35$
	(SD)	0	(253.48)	(405.66)	(354.36)	
	n		25	12	14	
More than 2	Mean	1346.25 ^a	978.31 ^b	1059.75 ^b	1124.64 ^{b,c}	$F(3, 78) = 3.57$, $p < .05$
	(SD)	(448.09)	(233.82)	(385.05)	(435.18)	
	n	8	32	23	19	
More than 1	Mean	1525.94 ^a	1024.19 ^b	1186.78 ^{b,c}	1273.96 ^c	$F(3, 104) = 5.02$, $P < .01$
	(SD)	(678.10)	(284.39)	(477.58)	(459.76)	
	n	18	37	30	23	
Missing value replaced	Mean	1142.21 ^a	1013.00 ^b	1067.60 ^{b,c}	1131. ^{32a,c}	$F(3, 134) = 3.40$, $p < .05$
	(SD)	(151.55)	(169.31)	(208.63)	(261.43)	
	n	33	43	38	24	

Note. Different subscripts represent significant means difference at least at the .05 level.

Table 5.2: The effects of brand cue(s) on reaction time measure to semantic meanings of Red Bull

	Experiment conditions	1	2	3	4	
		No brand cue	Scent only	Logo only	Scent and Logo	
All 4 meanings	Mean	1242.25 ^a	842.72 ^b	777.09 ^b	899.56 ^b	$F(3, 25) = 2.48$, $p < .10$
	(SD)	(116.74)	(136.72)	(164.74)	(219.86)	
	n	1	8	11	9	
More than 3	Mean	1118.58	922.82	907.90	925.78	$F(3, 58) = 1.10$, $p = .36$
	(SD)	(171.08)	(300.13)	(204.41)	(262.55)	
	n	5	16	23	18	
More than 2	Mean	1080.70	962.24	917.83	983.59	$F(3, 85) = .90$, $p = .47$
	(SD)	(273.00)	(235.34)	(267.13)	(240.01)	
	n	7	29	31	22	
More than 1	Mean	1362.52 ^a	908.82 ^b	953.99 ^b	1058.38 ^b	$F(3, 113) = 7.94$, $P < .001$
	(SD)	(378.63)	(272.70)	(300.86)	(345.67)	
	n	19	38	36	24	
Missing value replaced	Mean	1049.44 ^a	969.14 ^b	939.82 ^b	985.92 ^b	$F(3, 134) = 2.85$, $p < .05$
	(SD)	(106.18)	(143.24)	(203.20)	(183.83)	
	n	33	43	38	24	

Note. Different subscripts represent significant means difference at least at the .05 level.

Appendix 6

Reaction time measure demonstration

YES **NO**

This is a **PRACTICE SESSION** to get you familiar with the set-up.

Put your middle or index fingers on the E and I keys of your keyboard.

For a short time the name of a brand (**SAMSUNG**) will appear in blue font in the middle of the screen. The brand name is replaced by a different word or phrase in white font that might be associated with the brand name.

Press the **LEFT** response button (E) if you think 'YES' the word or phrase is associated with the brand.

Press the **RIGHT** response button (I) if you think 'NO' the word or phrase is not associated with the brand.

This is a timed task. It's important that you **GO AS FAST AS YOU CAN** while making as few mistakes as possible. You should try to maximize both the **SPEED AND ACCURACY** of your response.

Press the **<SPACEBAR>** to start a practice session.

SAMSUNG

YES **NO**

BLUE

Figure 6.1 Reaction time measure demonstration of practice session

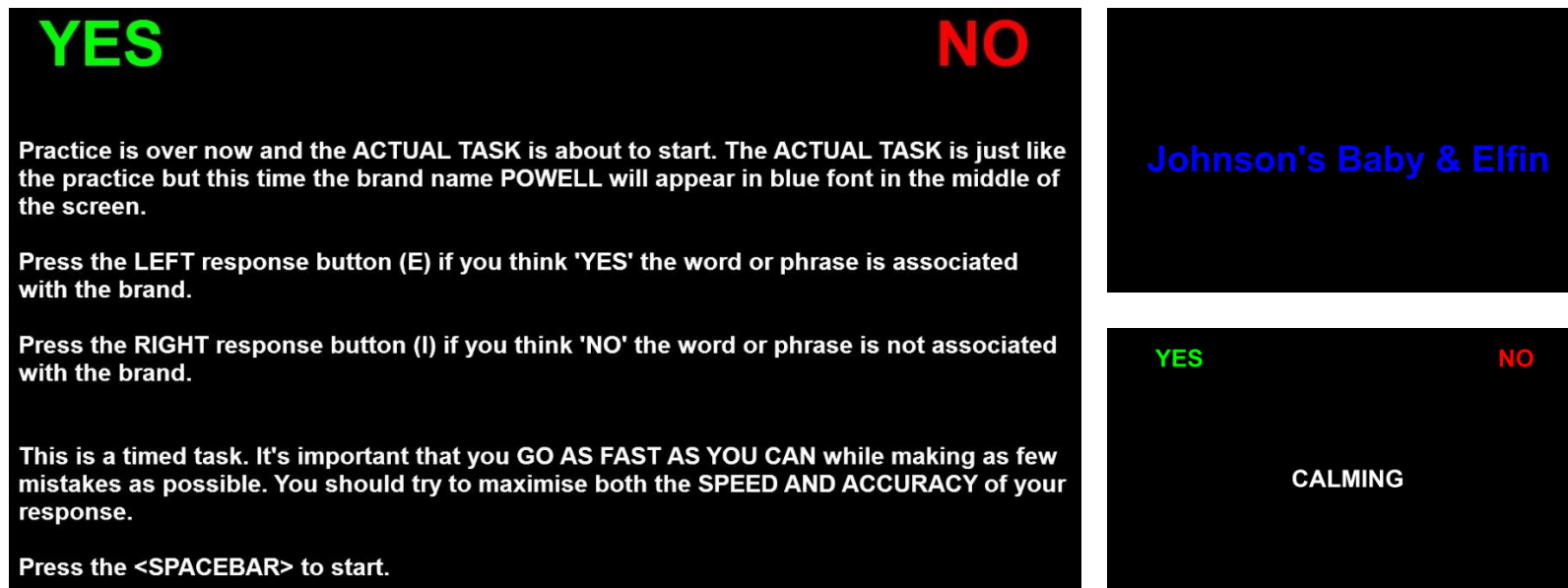


Figure 6.2 Reaction time measure demonstration of actual task

Appendix 7

Example of explicit measure used for Experiment 1

Please indicate your agreement or disagreement to the following statement describing the characteristics of **Johnson's Baby & Elfin** on a scale of **1 to 7** (**1 = strongly disagree to 7 = strongly agree**). Please take time to answer **ALL** the questions.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
	1	2	3	4	5	6	7
I can associate Johnson's Baby & Elfin with baby .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with being clean .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with loving .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with softness .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with calming .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with relaxing .	☐	☐	☐	☐	☐	☐	☐

Please indicate your agreement or disagreement to the following statement describing the characteristics of **Johnson's Baby & Elfin** on a scale of **1 to 7** (**1 = strongly disagree to 7 = strongly agree**). Please take time to answer **ALL** the questions.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
	1	2	3	4	5	6	7
I can associate Johnson's Baby & Elfin with natural .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with distinctive scent .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with smooth .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with bath time .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with pureness .	☐	☐	☐	☐	☐	☐	☐
I can associate Johnson's Baby & Elfin with memories .	☐	☐	☐	☐	☐	☐	☐

Please answer the following questions.

You rated the product in the way you thought the experimenter wanted you to rate them.

Yes

☐

No

☐

In your opinion, what was the purpose of this study?

During the study, did you ever had a thought that its purpose might be something other than you were told? If so, when did this occur to you, and what were you thinking?

Did you notice anything specific in the presentation of the product? If so, please describe what struck you as remarkable?

Have you heard any incidence about Johnson's Baby lately from the media? If you have, please describe what it is.

1. Please write down the last four digits of your student ID number.

2. What is your gender?

Male

☐

Female

☐

3. What is your age?

Appendix 8

Example of explicit measure used for Experiment 2

Please indicate your agreement or disagreement to the following statement describing the characteristics of **Red Bull & Powell** on a scale of **1 to 7 (1 = strongly disagree to 7 = strongly agree)**. Please take time to answer **ALL** the questions.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
	1	2	3	4	5	6	7
I can associate Red Bull & Powell with fizziness .	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell with being exciting .	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell with caffeine .	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell with sourness .	☐	☐	☐	☐	☐	☐	☐

Please indicate your agreement or disagreement to the following statement describing the characteristics of **Red Bull & Powell** on a scale of **1 to 7 (1 = strongly disagree to 7 = strongly agree)**. Please take time to answer **ALL** the questions.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
	1	2	3	4	5	6	7
I can associate Red Bull & Powell with distinctive taste .	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell with sports .	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell with distinctive scent .	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell with being energetic .	☐	☐	☐	☐	☐	☐	☐

What is your overall attitude toward the **Red Bull & Powell** lolly?

	1	4	7
Bad	☐	☐	☐
Boring	☐	☐	☐
Unfavorable	☐	☐	☐
Good	☐	☐	☐
Interesting	☐	☐	☐
Favorable	☐	☐	☐

Please answer the following questions.

You rated the product in the way you thought the experimenter wanted you to rate them.

Yes

☐

No

☐

In your opinion, what was the purpose of this study?

During the study, did you ever had a thought that its purpose might be something other than you were told? If so, when did this occur to you, and what were you thinking?

Did you notice anything specific in the presentation of the product? If so, please describe what struck you as remarkable?

1. Please write down the last four digits of your student ID number.

2. What is your gender?

Male

☐

Female

☐

3. What is your age?

Appendix 9

Survey instrument used for Experiment 3



Product Attitude Survey

Thank you for participating in this survey. The purpose of this survey is to investigate various aspects of your feelings and attitudes about the product to be used in this study.

Your participation in this research is entirely voluntary and there are no right or wrong answers. You may withdraw from this research at any time, without any adverse consequences. It will take about 5 minutes to complete.

Instructions

Soon, you will be given a sample of product prepared for this study. After testing the sample, circle the response most relevant to you based on your thoughts and feelings toward the sample you tested.

It is important that you DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO DO SO. Also, PLEASE DO NOT TALK TO EACH OTHER DURING THE EXPERIMENT.

STOP HERE UNTIL TOLD.

Please write down the **ASSIGNED SAMPLE NUMBER** which was given to you while the researcher distributed the sample.

STOP HERE UNTIL TOLD.

Please indicate on the following scale on **how strong the taste of the lolly was.**

Not strong at all	1	2	3	4	5	6	7	Very strong
--------------------------	---	---	---	---	---	---	---	--------------------

Please indicate your agreement or disagreement to the following statement describing **the characteristics of the lolly from POWELL** on a scale of **1 to 7** (**1 = strongly disagree to 7 = strongly agree**). Please take time to answer **ALL** the questions.

	Strongly disagree 1	Disagree 2	Somewhat disagree 3	Neutral 4	Somewhat agree 5	Agree 6	Strongly agree 7
I can associate the jelly from POWELL with sourness .	1	2	3	4	5	6	7
I can associate the jelly from POWELL with fizziness .	1	2	3	4	5	6	7
I can associate the jelly from POWELL with caffeine .	1	2	3	4	5	6	7
I can associate the jelly from POWELL with being energetic .	1	2	3	4	5	6	7

Please choose a number on a scale of **1 to 7** based on **what you think of the lolly from POWELL.**

Bad	1	2	3	4	5	6	7	Good
Boring	1	2	3	4	5	6	7	Interesting
Unfavourable	1	2	3	4	5	6	7	Favourable

Please indicate on the following scale on **how hungry you are right now**.

Not hungry at all	1	2	3	4	5	6	7	Very hungry
--------------------------	---	---	---	---	---	---	---	--------------------

Demographic Information

1. What is your gender? _____

2. What is your age? _____

Appendix 10

Example of survey instrument used for Experiment 4

Consumer Survey

CONSENT FORM

You are invited to participate in a research study that investigates your feelings and attitude about the product you will be introduced in this survey. Your participation in this research is entirely voluntary. Completion of the questionnaire will be taken as indicating your consent to participate. You may withdraw from this research at any time, without any adverse consequences.

If you agree to be in this study, you will be asked to complete a series of unrelated studies. If the questions or tasks seem very different from each other, this is because we are testing several different ideas. It will take about 3 ~ 4 minutes to complete. Please be as honest and accurate as you can. There is no physical risk involved in this study to you. The records of this study will be kept completely private and confidential. Any report of this study will not include any information that will make it possible to identify you as a participants.

***It is very important that you complete all questions without any distractions (e.g., watching TV, listening to music, instant message, chatting). And please do not complete this survey while completing other surveys at the same time.**

Your consent to participate is indicated by clicking the button below.

Task #1: New Product Evaluation

In the next page, you will be introduced to a new product. Please read the information given about this product and answer the following questions.

Powell® is a jelly brand recently introduced in the market. While **Powell®** has not been on the market long, the brand has settled down quite well and its jellies have been enjoyed by many people across America. **Red Bull** has always been interested in collaborating with other brands to create a new product. Recently, **Red Bull** and **Powell®**, a jelly making brand, sat down together to develop the new **Red Bull & Powell® Jellies**. The new product targets a variety of adult consumers such as athletes, busy professionals, college students and travelers on-the-go. These new **Red Bull & Powell® Jellies** will bring enjoyment to you anywhere you go or whatever you do!

Based on the information shown for **Red Bull & Powell® Jellies**, what is your overall attitude toward the **Red Bull & Powell® Jellies**?

	1	4	7	
Bad	☐	☐	☐	Good
Negative	☐	☐	☐	Positive
Unfavorable	☐	☐	☐	Favorable

Please indicate your level of agreement or disagreement to the following statements describing the characteristics of **Red Bull & Powell® Jellies**. Please take time to answer **ALL** the questions.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
	1	2	3	4	5	6	7
I can associate Red Bull & Powell® Jellies with tartness.	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell® Jellies with fizziness.	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell® Jellies with sports.	☐	☐	☐	☐	☐	☐	☐
I can associate Red Bull & Powell® Jellies with being exciting.	☐	☐	☐	☐	☐	☐	☐

The following questions relate to the brand **Red Bull** and **Powell®**.

Please indicate on the following scale **how familiar you are with Red Bull**.

	1	4	7	
Unfamiliar	☐	☐	☐	Familiar
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	

Please indicate on the following scale **how much you like Red Bull**.

	1	4	7	
Not likeable	☐	☐	☐	Likeable
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	

Please indicate on the following scale **how much you like Powell®**.

	1	4	7	
Not likeable	☐	☐	☐	Likeable
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	

How much do you like the product category jellies?

	1	4	7	
Not likeable	☐	☐	☐	Likeable

Generally, how much do you like "sour" taste?

	1	4	7	
Not at all	☐	☐	☐	Very much

What is your gender?

Male
☐

Female
☐

What is your age? (.....years old)

Appendix 11

Survey questions and stimulus material used in Experiment 5

1. Product picture present & Brand Name present condition

Consumer Survey

CONSENT FORM

You are invited to participate in a research study that investigates your feelings and attitude about the product you will be introduced in this survey. Your participation in this research is entirely voluntary. Completion of the questionnaire will be taken as indicating your consent to participate. You may withdraw from this research at any time, without any adverse consequences.

If you agree to be in this study, you will be asked to complete a series of unrelated studies. If the questions or tasks seem very different from each other, this is because we are testing several different ideas. It will take about 3 ~ 4 minutes to complete. Please be as honest and accurate as you can. There is no physical risk involved in this study to you. The records of this study will be kept completely private and confidential. Any report of this study will not include any information that will make it possible to identify you as a participants.

***It is very important that you complete all questions without any distractions (e.g., watching TV, listening to music, instant messaging, chatting). And please do not complete this survey while completing other surveys at the same time.**

Your consent to participate is indicated by clicking the button below.

Task #1: New Product Evaluation

In the next page, you will be introduced to a new product. Please read the information given about this product and answer the following questions.

SweetRed Bull & Baron candies

These new candies with **Sweet taste** target a variety of adult consumers such as busy professionals, college students and travellers on-the-go. The new candies are individually wrapped so that you can enjoy them anytime and anywhere!



Based on the information shown for these new candies, what is your overall attitude toward them?

	1	4	7	
Bad	☐	☐	☐	Good
Negative	☐	☐	☐	Positive
Unfavorable	☐	☐	☐	Favorable

How hungry were you before you participated in this survey?

Not at all		Very much
	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	

How much do you like the product category candies?

	1	4	7	
Not likeable	☐	☐	☐	Likeable

Please indicate on the following scale how familiar you are with candy brand Baron.

	1	4	7	
Unfamiliar	☐	☐	☐	Familiar

What is your gender?

Male
☐

Female
☐

What is your age? (_____years old)

Energy Red Bull & Baron candies

These new **Energy-boosting** candies target a variety of adult consumers such as busy professionals, college students and travellers on-the-go. These new candies are individually wrapped so that you can enjoy them anytime and anywhere!



2. Product picture NOT present Brand Name NOT present condition

Sweet Baron candies

These new candies with **Sweet taste** target a variety of adult consumers such as busy professionals, college students and travellers on-the-go. The new candies are individually wrapped so that you can enjoy them anytime and anywhere!

Energy Baron candies

These new **Energy-boosting** candies target a variety of adult consumers such as busy professionals, college students and travellers on-the-go. The new candies are individually wrapped so that you can enjoy them anytime and anywhere!

3. Product picture NOT present Brand Name present condition

Sweet Red Bull & Baron candies

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