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## "The Magic Formula: Scent and Brand"- The Influence of Olfactory Sensory Co-Branding on Consumer Evaluations and Experiences

Ceren Ekebas  
*Old Dominion University*

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**“THE MAGIC FORMULA: SCENT AND BRAND”- THE INFLUENCE OF  
OLFACTORY SENSORY CO-BRANDING ON CONSUMER EVALUATIONS  
AND EXPERIENCES**

by

Ceren Ekebas

B.A. May 2006, Yeditepe University Istanbul, Turkey  
MEEM. August 2008, Rochester Institute of Technology

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Approved by:

\_\_\_\_\_  
Kiran Karande (Director)

\_\_\_\_\_  
Yuping Liu-Thompkins (Member)

\_\_\_\_\_  
Leona Tam (Member)

\_\_\_\_\_  
Lance Frazier (Member)

## **ABSTRACT**

### **“THE MAGIC FORMULA: SCENT AND BRAND”- THE INFLUENCE OF OLFACTORY SENSORY CO-BRANDING ON CONSUMER EVALUATIONS AND EXPERIENCES**

Ceren Ekebas  
Old Dominion University, 2015  
Director: Dr. Kiran Karande

This dissertation investigates the effect of co-branding efforts on consumers' responses when a sensory product is co-branded with the scent of another sensory product (sensory co-branded product). It aims to fill the gap in the literature by studying how olfactory attributes of co-branded products influence consumers' evaluations and experiences. Three experimental studies examine how these effects occur, and also analyze the influence of moderating factors that determine the magnitude of the effects.

Study 1 explored how branding strategies and different presentation methods of products (physical or denoted) interact to influence consumer evaluations and experiences. Findings showed that consumers evaluated sensory co-branded products more positively in the denoted method of presentation, when they reviewed the advertisement of the product. When consumers had a chance to physically evaluate and smell the product, there was no difference in the evaluation of the sensory co-branded and regular sensory products.

Study 2 investigated whether level of need for smell moderates the relationship between branding strategy and consumer evaluations. Results showed that consumer evaluations of products and sensory experiences could result in different responses depending upon interaction of need for smell and the branding strategy of the product. Consumers who had high need for smell evaluated regular sensory product more

positively than sensory co-branded product. Consumer evaluations did not change between branding strategies when consumers had low need for smell.

Study 3 explored the influence of sensory attribute functionality on the relationship between branding strategy and consumer evaluations. When the sensory attribute of a product was hedonic, respondents evaluated regular sensory product more positively on product quality. However, sensory co-branded products were evaluated more positively on sensory experience and scent evaluations. When the sensory attribute of the product was utilitarian, the evaluation of the sensory co-branded products and regular sensory products did not differ.

These three different studies show that sensory co-branding strategies are effective when consumers evaluate the sensory products from advertisements or any other condition that does not provide a real smelling opportunity. Sensory co-branding strategies are also effective in the evaluation of scent and sensory experience when the sensory attribute of the product is hedonic. On the other hand, regular sensory branding strategies are effective on product quality evaluation when consumers are in high need for smell and when the sensory attribute of the product is hedonic. Based on the findings, managerial implications and future research directions are also discussed.

This dissertation is dedicated to my parents Ugur and Umran Ekebas.

Grandpa, thank you for believing in me. I know that you are watching me from heaven.

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# **“THE MAGIC FORMULA: SCENT AND BRAND”- THE INFLUENCE OF OLFACTORY SENSORY CO-BRANDING ON CONSUMER EVALUATIONS AND EXPERIENCES**

## **CHAPTER I**

### **INTRODUCTION**

#### **i. Statement of the Problem**

Companies are dedicated to creating unique, innovative products and service environments that attract consumers' attention and that achieve positive consumer evaluations. Therefore, marketers aim to use sensory marketing strategies to stimulate consumers' senses, generating better brand evaluations and experiences (Brakus, Schmitt, and Zarantonello 2009; Raz et al. 2008). The need to address marketing strategies that engage consumer senses has received increased attention from scholars in the last decade (e.g. Elder and Krishna 2012; Krishna 2010, 2012; Krishna and Morrin 2008; Peck and Childers 2003; Raz et al. 2008). The concept of *sensory marketing* has evolved from this need and is defined as “marketing that engages the consumers' senses and affects their perception, judgment and behavior” (Krishna 2010, p. 2). Consumers' judgments about products, services, shopping environment and atmosphere derive from five senses: what consumers smell (olfactory), hear (auditory), physically touch (tactile), see (vision) and taste (Peck and Childers 2008).

Many brands and products include some product or promotion attributes that appeal to one or more of consumers' senses (Krishna 2013). For instance, the clothing company Abercrombie & Fitch uses a signature scent in their stores to create a distinct experience for consumers. This scent is sprayed onto apparel that the brand sells in the

store, and the company also sells this signature scent as cologne. By associating the scent with the product, the Abercrombie & Fitch brand is kept relevant in the consumers' minds inside and outside of the store. Similar to the ways that brands and companies put effort into enhancing the sensory aspects of the products, they also aim to influence consumers with sensory promotion activities. The fabric softener brand Snuggle, for example, promotes their new products in retail stores by giving away Snuggle bears, allowing customers to feel the softness and smell the scent. Moreover, brands use the indulgence power of sensory features such as pleasant scents, ambient music, different colors, and varied textures in the packaging and design of the physical products or the atmosphere of retail environments (Krishna 2012).

Sensory factors of the products (e.g. shape, texture, scent, color) and services (e.g. ambiance, temperature, music, scent) influence consumers in various ways. Different perceptions, evaluations and experiences regarding products and services occur as a result of how individuals perceive and process these sensory factors (Peck and Childers 2008). Therefore, interest in sensory research in marketing has been growing in the past decade. According to Peck and Childers (2008), out of 81 sensory papers published in marketing journals, 35% (28) of the papers have been published in the last five years. Key findings of the prior literature confirm the importance of the relationship between sensory research and marketing, essentially, sensory marketing. According to the extant literature, for instance, ambient scents (olfactory) increase consumer attention in the process of product evaluations (Morrin and Ratneshwar 2003) and influence consumer information processing (Mitchell, Kahn, and Knasko 1995). On the other hand, the sense of hearing (audition) influences consumers' mood, memory and time perceptions as well as their

evaluation of the products and services (Meyers-Levy, Bublitz, and Peracchio 2010). The sense of touch (haptics) has gained importance in recent years as the internet and online shopping have become increasingly popular (Peck and Childers 2008). While there are individual differences, overall, consumers' motivation to touch has many effects on product information access from memory and product evaluation (Peck 2010).

Due to the positive influences on consumers, using different sensory features in marketing applications has become critical. In recent years, specifically using scents (olfactory) to influence consumers has become an important strategy. Marketers have expanded to create scents for some products that do not have an inherently associated odor, such as beverages, garbage bags, detergents, soaps, furniture, and apparel (Krishna 2013). Some of these efforts can be perceived as excessive, but scents can strongly influence consumer judgments about products (Laird 1932) and product quality (Bone and Jantrania 1992). In addition, scents act as cues and create association between products and memory. For instance, when products are scented (vs. unscented), consumers are more likely to remember associated features of those products (Krishna, Lwin, and Morrin 2010). General findings in the literature reveal that when a product is scented, people tend to evaluate it more positively (Laird 1932).

In addition to sensory marketing, companies and brands have started using different branding strategies to create better, stronger products and positive consumer evaluations. One of the widely applied methods is co-branding, which refers creating a separate product by combining two or more different brands (Washburn, Till, and Priluck 2000). Co-branding is a popular strategy that marketers use in order to take the advantage of positive associations of the partner brand while improving the consumer evaluation of

the primary brand (Hillyer and Tikoo 1995). In today's competitive market, with shelves full of different brands and products, brands aim to stimulate consumers' senses in order to attract attention and receive positive evaluations. Even if the product already includes sensory attributes, making it a sensory product, companies look for ways to add more sensory aspects. Products that already have one or more sensory attributes (such as scent, texture or flavor) use other sensory brand names in their products. Co-branding strategies allow the product to benefit not only from the other brands' name, but also its strong sensory features (such as taste or scent). For example, a laundry detergent that already has a scent of its own, creates a new product with the "scent" of another brand name, drawing in the customers that are fans of that scent or brand. A cookie brand creates a new cookie line that uses ingredients from another tasty chocolate brand, combining the flavors and enticing customers who are fans of either brand. These brand alliance tactics add additional sensory attributes to the existing products and aim to strengthen consumers' evaluations by combining the brands. Co-branding in the sensory marketing context has been used frequently in recent years for products such as home cleaning supplies, laundry detergents, coffee creamers, cookies, room freshener, and fabric softeners. For instance, the home fragrance brand Air Wick launched a new room spray with cinnamon scent. Instead of labeling the product scent as a generic form of cinnamon, they used the bakery brand Cinnabon, which is famous for its cinnamon rolls, as a scent category. The company defines the product as:

*"Come home to the warm, comforting aroma of world famous cinnamon rolls. It's the irresistible smell of freshly baked dough, one-of-a-kind cinnamon and cream*



*cheese frosting that make Cinnabon cinnamon rolls so unforgettable. Now, you can enjoy that sweet scent whenever you want, every day."*

At first, this might look like a regular co-branding strategy. However, Cinnabon is a bakery brand and their main product is a cinnamon roll. The regular co-branding strategy adopts the secondary brand to add its strong attribute to the new product. Ford created the Ford Explorer with an Eddie Bauer interior, for example, using the Eddie Bauer line as a fashion symbol and addition to the car. On the contrary, in the Air Wick-Cinnabon scent case, Air Wick is already a sensory product that creates its own sensory perceptions in consumers' minds. The attribute that Cinnabon adds to the main product (room spray) is not directly related to the main attribute (taste of the pastry) of the Cinnabon cinnamon rolls, only the smell. Air Wick is attempting to strengthen consumer evaluations and experiences with the unique Cinnabon brand cinnamon scent indulging consumer senses and using consumer's positive associations and memories. In the current study, we call such branding strategies as *sensory co-branding* which refers to strategy of merging two sensory brands together in order to create a stronger sensory product. The application of sensory co-branding on products is also referred to as *sensory co-branded products* in the current study.

## **ii. Significance of the problem**

Co-branding is a well-known subcategory of brand alliance strategies. Even though co-branding applications have been increasing, existing literature is primarily concentrated on broad brand alliance activities rather than co-branding (Aaker and Keller 1990). On the other hand, studies that focus on co-branding mainly investigate how co-branding influences consumer responses and attitudes (Hillyer and Tikoo 1995; Park,

Jun, and Shocker 1996; Simonin and Ruth 1998), typicality, congruity, and fit among co-brands (Boush and Loken 1991; Park et al. 1996). There are many different forms of co-branding applications and how these different forms influence consumers has been left uninvestigated in the literature (Walchli 2007). Thus, as a different form of co-branding, sensory co-branding requires attention.

Understanding how sensation and perception are relevant to consumer behavior falls within the scope of sensory marketing, and is a fairly new concept (Krishna 2012). Research on how applications of sensory marketing influence consumers is needed (Krishna 2012). To our knowledge, no research in the literature looks at the relationship between co-branding and sensory marketing. In the current marketplace, consumers change their purchasing behavior due to various perceptions about the products, rather than the quality of the products (Krishna 2012). Rao and Ruekert (1994) state that future research should investigate these issues. Despite the passage of twenty years, there is still lack of research in this area. Therefore, there is an opportunity to expand the co-branding literature and fulfill the need for research that focuses on sensory aspects of co-branding strategies.

On the other hand, even though the sense of smell has been studied in the marketing field, the latest studies are mainly limited to ambient scents (Krishna 2012; Peck and Childers 2008). Many of the studies that examine the product scent are interested in the congruency and fit between the product and scent (e.g. Bone and Jantrania 1992). Extant research mainly focuses on ambient scents and how they exert influence on emotions and cognitions (Chebat and Michon 2003), ambient scent and product congruence influence on decision making (Mitchell et al. 1995; Spangenberg,

Crowley, and Henderson 1996), and product evaluations (Bosmans 2006). The general findings show that congruent ambient scents result in positive decision making and can also improve the product evaluations. In addition to ambient scents, Bone and Jantrania (1992) find that congruency between the product category and its scent positively influence consumers' product judgments. Product scents also enhance consumer memory for product information and improve brand equity (Krishna et al. 2010). Even though these findings enhance and contribute to olfactory research in marketing, there is a significant gap in this area in the extant literature. Considering the fact that an individual takes twenty thousand breaths per day; he or she has a very high chance of being influenced by the scents that are added to products that has not been studied in the co-branding context. Therefore, it is necessary to understand how the sensory co-branding efforts of companies influence customers and their responses.

The current research does not focus on how co-branding strategies influence consumers' opinions or perceptions about the brand. Instead, this dissertation attempts to examine a new form of co-branding (sensory co-branding) and how consumers evaluate the sensory co-branded product. This focus is consistent with the need for future research on why some individuals prefer different types of sensory input identified by many scholars (Peck and Childers 2008)

### **iii. Purpose of the research**

This research merges two different concepts: sensory marketing and co-branding. We aim to investigate whether sensory co-branding is perceived positively, and if sensory co-branding efforts are worthwhile. It is critical to consider whether consumers seek stronger sensory attributes to receive better sensory experiences and evaluations.

Theoretical investigation of how consumers process this sensory co-branding concept is equally important. Even though companies expend a lot of effort on these strategies, do these strategies really work on the consumers' side, and how do consumers process sensory co-branding applications? In light of these questions, this dissertation investigates the effect of co-branding efforts on consumers' responses to the co-branding product when a sensory product is co-branded with the scent of another sensory product (sensory co-branded product). This study focuses on the olfactory senses because to our knowledge; brand alliances have not been covered in the scope of sensory marketing and olfactory cues. Therefore, this research aims to fill the gap in the literature by studying how olfactory attributes of co-branded products influence consumers' evaluations and experiences. In more practical terms, this research could explain the sensory co-branding between the laundry detergent line, Gain, and the home fragrance and candle manufacturer, Glade. When Gain creates a product with Glade's scents, will this new product stimulate more positive consumer responses than regular Gain? Since Gain already has a pleasant scent, like all detergents, can Glade create a stronger sensory experience in consumers' minds by using sensory co-branding? This dissertation investigates how these effects occur, and whether there are other factors that determine the magnitude of the sensory co-branding effect.

Beyond the process by which sensory co-branded product effects occur, we suggest that branding strategy and different presentations of products, such as in an advertisement (denoted presentation) or real usage situation as in sampling (physical presentation), can affect consumers' evaluations and experiences differently. This research attempts to explore how the relationship between product presentation to the

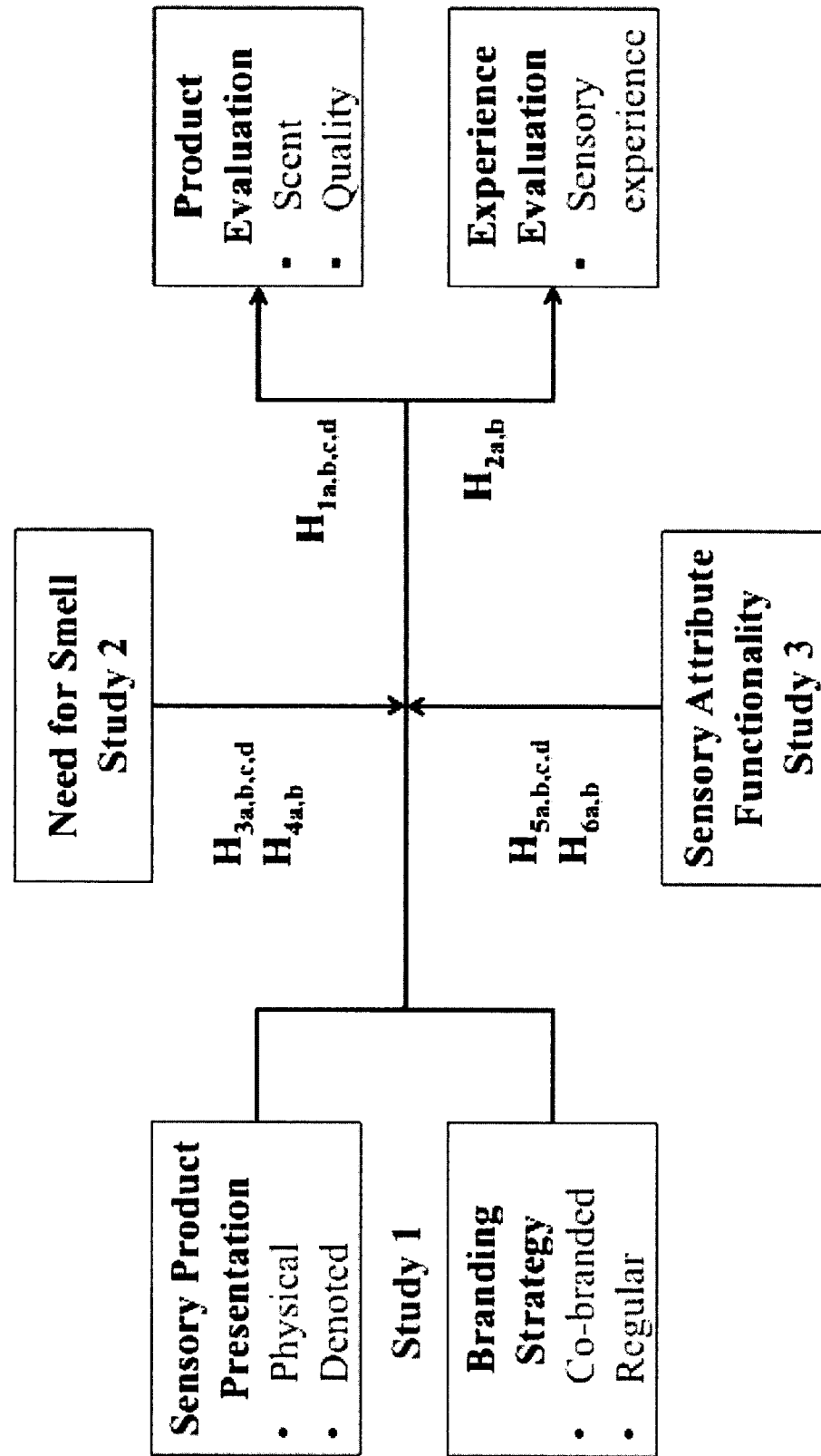
customer and co-branding strategies influence consumer's product evaluations and sensory experiences. Research questions are built upon the argument that intrinsic (scent) and extrinsic (brand name) cues that are borrowed from the sensory partner product will create different cognitive processing for denoted and physical presentation of the product.

This dissertation proposes six different hypotheses in three different studies (Figure 1). Study 1 aims to investigate how branding strategy interacts with sensory product presentation to influence product evaluations and sensory experiences. The co-brand will act as an extrinsic and intrinsic cue, depending on the presentation. Further, study 2 examines that the magnitude of interaction between branding strategy and sensory product presentation depends upon consumers' individual tendencies to smell the things around them. Finally, study 3 studies the effect of the sensory attributes when they serve as predominantly utilitarian or hedonic function.

Thus, the purpose of this dissertation is:

- (1) to investigate how sensory co-branding influences consumers' evaluations of sensory experiences and product evaluations (scent and quality),
- (2) to explore how branding strategies and different presentation methods of the sensory products (physical or denoted) interact to influence consumer evaluations and experiences, and
- (3) to examine the consumers' need for smell and the functionality of the sensory attribute as moderating variables that determine the magnitude of the effects.

Figure 1. Conceptual Model



#### **iv. Organization of the Dissertation**

The rest of the dissertation is organized as follows. Chapter two represents an extensive review of the relevant literature related to co-branding, sense of smell, and applications of these two topics in marketing literature. In addition, chapter two explains the theoretical background of the conceptual model and proposes research hypotheses. Chapter three, four and five represents Study 1, 2 and 3 respectively and gives details about the methodology, design, and procedure of the experiments and measurements of the constructs. Chapter six summarizes the findings and proposes the future directions and managerial implications.

## CHAPTER II

### LITERATURE REVIEW AND RESEARCH HYPOTHESES

#### i. Co-branding

Brand names are valuable assets for companies, as they provide information, such as quality, regarding the products and services of that brand (Rao and Ruekert 1994).

Brands often provide certain cues about their offerings and brand-related information to the customers (Kumar 2005; Park et al. 1996). In order to utilize consumers' existing perceptions and evaluations of existing brands, companies tend to adopt many different strategies, including co-branding. Co-branding is a type of a strategic alliance that combines two different brands in order to represent a new product to consumers. In this form of branding, the ingredient brands are inseparable (Kumar 2005; Park et al. 1996).

Co-branding has mainly been examined under the concept of *strategic brand alliance* in the extant literature. Brand alliance refers to the association or integration of two or more brands (Simonin and Ruth 1998) and can take many different forms. Brands can form alliances for advertising and promotion, or for bundling together. In addition, brand alliances can take the form of component branding by using the product of one brand in another product (e.g. Intel processors in Dell computers) or composite branding by merging two brand names together to create one new product (Betty Crocker cake mix with Hersey's Chocolate) (Simonin and Ruth 1998). Co-branding strategy has been given different names in the extant literature including; composite brand extensions (Park et al. 1996), ingredient branding (Swaminathan, Reddy, and Dommer 2012; Vaidyanathan and Aggarwal 2000), general brand alliance (Rao and Ruekert 1994; Simonin and Ruth



1998), cross-promotion, joint branding (Simonin and Ruth 1998), etc. Table 1 summarizes commonly used forms of strategic alliances.

Table 1. Forms of strategic brand alliances

<i>Strategy</i>	<i>Scope and Definition</i>
Brand alliances	Short or long term association or combination of two or more individual brands, products, and/or other distinctive proprietary assets (Simonin and Ruth 1998).
Composite branding	Combining two existing brand names to create a composite brand name for a new product. These two brands share manufacturing and marketing expertise. (Park et al. 1996, p. 453)
Ingredient branding	Key attributes of one brand are incorporated into another brand as ingredients (Swaminathan, Reddy, and Dommer 2012)
Co-branding	Pairing two or more branded products to form a separate and unique product (Washburn et al. 2000).
Co-branded ingredient branding	The attribute ingredients are supplied by another firm that is, the ingredient is branded using an identified brand name or other brand element associated with another firm (Desai and Keller 2002, p. 73).
Joint branding (component branding)	Two or more brands are presented simultaneously to consumers (Simonin and Ruth 1998).

In the context of the current research, co-branding refers to physical product integration that combines two brands to create a new product that keeps the name of the primary brand (Washburn et al. 2000). The primary brand is the main brand that seeks

out another brand's endorsement; this other brand is referred to as the secondary brand (Rao and Ruekert 1994). A secondary brand is mainly used make the primary brand stronger with a positive consumer association. Due to physical product integration, primary and secondary brands are inseparable (Rao and Ruekert 1994). Several examples of co-branding strategies exist in various categories, such as; Crest toothpaste with Scope mouthwash, Doritos chips with Taco Bell flavor, Fiat 500 with Gucci interior, Philadelphia Cream Cheese with Cadbury Chocolate flavor, Orbit gum with Crest whitening action, and Special K Eggo Waffles.

Co-branding is a popular strategy that marketers use in order to take advantage of positive associations of the partner brand. Co-branding positively influences brand value when applied successfully (Walchli 2007). Consumers' attitude toward the co-branded product can influence their evaluations and attitudes toward the partner brands (Simonin and Ruth 1998). Stated positive outcomes of co-branding derive from general brand alliances (Rao and Ruekert 1994) and brand extensions (Aaker and Keller 1990). Brand extensions refer to the use of a current brand name to enter a new market segment or to create a new product (Aaker and Keller 1990; Batra, Lenk, and Wedel 2010). Many companies have extensively applied brand and line extension strategies. With the brand or line extension, brands try to reduce the costs of introducing products, increase positive evaluations, and decrease the risk of new product failures by using existing positive associations, brand loyalty and recognition, and positive consumer perceptions (Batra et al. 2010; Vaidyanathan and Aggarwal 2000). Depending on the overall positive outcomes of brand extensions, and considering the benefits of expanding with a well-known brand name, brands create co-branding strategies with other brands. Co-branding is a form of

composite branding because two brands are combined based on some attributes. Therefore, it is different from brand extensions because the brand concept is not transferred to a new category. Instead, two brands contribute to the new product with different attributes (Kumar 2005). If brands are assumed to be categories, co-branding refers to combining these categories (Walchli 2007). Based on previous literature, we know that compatibility level of the brands, the type of ingredient branding strategies, the extent to which the brands signal quality, brand familiarity, and the number of co-branded partnerships can all affect consumers' attitudes toward the co-branded product.

The literature extensively discusses brand extensions and alliances, their benefits, and their consequences (Aaker and Keller 1990; Boush and Loken 1991; Simonin and Ruth 1998). Extant literature has mainly focused on fit or congruity between brand alliances as an important strategy and antecedent of consumer evaluations (Park et al. 1996; Rao and Ruekert 1994; Simonin and Ruth 1998). Other well-researched topics include: importance of partner selection in co-branding (Rao and Ruekert 1994), effectiveness of co-branding (Park et al. 1996), advantages and disadvantages of co-branding strategies (Rao and Ruekert 1994), antecedents of evaluations of brand alliances (Simonin and Ruth 1998), and influence of co-branding on consumer's brand evaluations (Hillyer and Tikoo 1995). Co-branding also has been studied in order to understand the effects on brand equity for co-branded partners (Washburn et al. 2000). Even though the literature has extensively studied brand alliances and types of co-branding activities, several issues remain unexplored. There is still a considerable amount to be learned about the dynamics of consumer response to co-branding in different forms (Walchli 2007).

**ii. Co-branding and sensory attributes: *Sensory co-branding***

Co-branding strategies have been changing, according to the different needs and wants of the consumers. Consumers look for a variety of options, even for everyday use products. Co-branding creates differentiation among products and brands by using a different ingredient attribute (Desai and Keller 2002). The secondary brand often changes an existing attribute of the primary brand to create positive perceptions of product performance (Desai and Keller 2002). Prior literature has mainly studied the relationship between co-branding and consumer perceptions of product quality. These studies conclude that when consumers hold knowledge and information regarding the brand name (the secondary brand), co-branding influences consumers' quality judgments about the products (Washburn et al. 2000). On the other hand, even though quality perceptions of the products derive from the consumers' association with brand names in co-branding strategies, each of the brands can elicit different thoughts, perceptions, and evaluations in the consumers' minds.

Given the fact that consumers are exposed to numerous products and advertisements on a daily basis, companies look for more efficient ways to attract customers. Therefore, different forms of co-branding strategies are used in the marketplace. However, capturing the consumer's attention has become more difficult with innovations in product packaging, different advertising tools, and variety in product categories. As a result, marketers have started using sensory triggers in products because they can appeal to consumer senses, attract more attention, and increase consumer demand (Krishna 2012). While sensory triggers and co-branding strategies aim to serve the same purpose, companies have started combining co-branding strategies with sensory

attributes to indulge consumer senses such as taste, scent, and touch. Currently, several examples of co-branded products that include sensory attributes exist in the marketplace, such as Downy fabric softener with Febreze scent, Timothy's coffee with Kahlua flavor, International Delight Coffee Creamer with Almond Joy flavor, and Dawn dishwashing liquid with scent and gentleness of Olay lotion.

Prior literature helps marketers to understand the essentials of co-branding and how co-branding strategy affects consumer evaluations. However, use of sensory attributes and how the sensory attributes of the primary and secondary brand influence consumers remain unexplored. Consumer perceptions can be influenced by not only the brand, but also the perception of sensory benefit. Brand name associations and effects are critical; however, it is also important to know how sensory attributes of co-brands affect consumers. Product attributes define which properties a product concept can have (Desai and Keller 2002). For example, laundry detergent has many attributes, such as texture, cleaning power, color, and scent. In the application of co-branding with sensory attributes, instead of creating new attributes, the secondary brand strengthens the sensory attribute by replacing the existing sensory attribute. Many examples of co-branded products already contain a sensory attribute. A regular ice cream, for instance, has particular taste and texture. If the ice cream brand adds another brand of chocolate chips to the ice cream, the chocolate chip brand (the secondary brand) strengthens the sensory attributes of texture and taste. This study analyses a different use of co-branding, a composite brand agreement in which the secondary brand is used as a sensory attribute in the primary brand, which is also a sensory product. This type of co-branding is referred to as: “*sensory co-branding*.”

Sensory co-branding applications are often seen in food and beverages, as well as household products such as laundry detergents, dishwashing liquids and personal care products. Co-branding strategies mainly use *taste* or *scent* attributes of the secondary brands. Sense of smell and taste are directly linked to perceptions, evaluations, experiences, emotions and memories (Bosmans 2006; Krishna et al. 2010). Cinnamon, for instance, is associated with the holiday season and elicits pleasant emotions such as love, relaxation, and happiness. Therefore, International Delight Coffee Creamer with Cinnabon, for instance, is expected to evoke holiday spirit and memories in consumers' minds. Another example is laundry detergents; fresh laundry scent can lead to positive emotions and sensory experiences. Cereals with chocolate can elicit positive evaluations and experiences such as pleasure and indulgence, since the majority of consumers enjoy the taste of chocolate. Additional brand name in a co-branded product presents information about the presence of attributes. Therefore, additional features that the co-branded product holds may make the jointly branded product more attractive (Rao and Ruekert 1994). In sensory co-branded products, this attractiveness might not be only the brand name, but may also be the sensory expectations from that brand. Consumers might perceive that Hershey's brand enhances the taste of chocolate in chocolate ice cream, or that Febreze improves the freshness of Tide detergent. These perceptions are all related to sensory experience. Rao and Ruekert (1994) use the example of the alliance between Pillsbury and M&Ms. The authors state that this alliance adds the signal of a tactile attribute, the crunchy candy in the cookie dough, and creates positive quality perceptions. However, the positive perception can also come from the sensory promise which creates better sensory expectations for consumers. Therefore, this research employs the sense of

smell (olfaction) and examines how sensory co-branding applications influence consumers in the context of olfactory attributes.

### **iii. The sense of smell (Olfaction)**

Individuals evaluate the world and the things in it with their five senses. We touch and feel apples before purchase, smell and taste food to evaluate it, see the blue of the ocean and relax. The sense of smell (olfaction) is one of the five senses, and a very critical factor in the perception process. Olfaction works with other senses such as taste; an individual with no sense of smell cannot distinguish the taste of Coke from Sprite (Morrin 2010). We cannot turn off our nose; therefore, in order to seize this opportunity, the world has recently become a more fragrant place (Vlahos 2007). It is estimated that humans detect as many as 10,000 to 100,000 distinct chemical odors (Buck 2005, p. 6132).

Recognition of scents has been identified as olfactory adaptation. The adaptation process can change based on odor intensity and the natural environment. The degree of the adaptation is measured by threshold (Zigler 1939). Threshold is the minimum level of scent intensity required for an individual to notice the presence of the scent (Krishna 2013; Zigler 1939). To identify a scent, such as flowery or bitter, recognition threshold level is needed. In between these two levels of thresholds, people can perceive the existence of the scent (Krishna 2013). Scents are usually associated with experiences. Even though individuals can recognize the category of the scent, they cannot name many of the scents that they smell. This effect is called “tip of the nose ” (Lawless and Engen 1977). In addition, individuals cannot locate the olfactory source without additional physical cue, unlike vision or hearing (Herz and Engen 1996).

Olfaction is the slowest sense because olfactory neurons hold the slowest conducting velocities, which means that information travels between neurons more slowly. For example, vision detection takes 45 milliseconds, while olfactory detection takes around 400 milliseconds and olfactory recognition takes 600–800 milliseconds (Herz and Engen 1996). Even though detection of scents is a slow process, scents are more powerful for evoking memories. Our brain can hold scent-related memories for a long time (Lawless and Engen 1977). The relationship of scent and memory is very powerful. If someone has been in a hospital where there is a particular odor, that odor is associated with pain or sickness. The process of how humans perceive scents is complex, but most types of scent perceptions and preferences are learned (Krishna 2013; Morrin 2010). We create our preferences about odors by associating them with experiences and feelings. This is called as associative learning (Krishna 2013). How we perceive odors depends on associative learning and the emotional valences of the experiences (Herz 2010).

Scents are typically perceived depending on three categories: pleasantness, familiarity, and intensity. Pleasantness and familiarity positively influence perceptions, whereas intensity has a U-shaped relationship with perception (Herz 2010). When scent intensity is at a certain level, we tend to accept and enjoy it; however, if the scent intensity gets stronger, it influences our perceptions negatively. Many studies have examined the role of scents in human life. For instance, some product-specific scents evoke memories of childhood, such as Play-Doh (Krishna 2013). People tend to remember their romantic partner associated memories when they smell the perfume that their partner uses or used to use. Scents can act as cognitive cues and can even influence



our social behavior. For instance, De Lange and colleagues (2012) studied the effect of clean scent on littering behavior in passenger trains. Clean lemon scent was infused in one restroom, while the control condition had no scent. The authors found that amount of littering significantly decreased in the scent-infused restroom. Passengers associate the lemon scent with being neat and clean. The lemon scent leads passengers to exhibit more appropriate social behavior by keeping the restroom clean. Since the sense of smell has strong influence on behavior, application of olfaction in marketing is an inevitable development. The next section summarizes the applications of sense of smell in marketing.

### **Applications of olfaction in marketing**

Marketers use different olfactory applications to promote and position their products and services and influence consumers' perceptions and evaluations. For instance, real estate agents bake fresh cookies during open houses not only serve them to potential customers, but also to create a warm environment in the house with the welcoming scent of fresh homemade cookies. There are particular scents that consumers associate with certain products, such as "new car scent." Since consumers' senses are receptive to different kinds of stimulation, brands even infuse a signature "new car scent" that is noticeably different than others, such as the "Cadillac new car scent" (Vlahos 2007). Some retail stores and hotel chains also have their own signature scents. Marketers have been applying scent strategies in products, product packaging, advertising (scratch and sniff), store ambiance, and other areas. Imagine a laundry detergent that has a chemical scent, or a store that smells like greasy food. In both conditions, consumer evaluation of the products is expected to be negative. In contrast, lavender scented

laundry detergent or a pleasant fruity smell in a grocery store is expected to influence consumers positively.

Pleasant odors influence emotions, attitudes, and attention, and evoke associations from memory. Morrin and Ratneshwar (2003) found that pleasant ambient scent increases attention to brands. Olfactory memory lasts longer than visual memory (Kirk-Smith and Booth 1987). In addition, experiences obtained through scents stay in individuals' memory for a long time (Gulas and Bloch 1995). It is believed that ambient scents can influence consumer's mood. However, empirical findings of mood and arousal related to ambient scents are mixed (Morrin 2010). Bone and Ellen (1999) stated that only a small percentage of studies show a significant influence of scent on mood. Regardless, scents influence information processing and cognitive elaboration (Mitchell et al. 1995).

Associations of scents, memory, and attitudes are critical because scents can help people to differentiate and remember the product attributes and scent of the product (Krishna 2013). Therefore, the interest in scents and how they influence consumers has been increasing in the last decade. The power of scents has been applied in marketing in different ways, such as product scents, ambient scents, and how these influence consumers. The results of selected studies will be summarized within two categories: product and ambient scents.

### ***Product scents***

General findings in the initial olfactory literature state that when a product is scented, consumers evaluate it more positively. As one of the first studies, Laird (1932) used scented women's silk hosiery in order to understand consumer judgments on quality. Housewives were asked to evaluate the hosiery. The scent on the hosiery was not

intense and only 6 out of 250 women noticed the scents; however, their quality judgments were positively influenced. As many women had more positive evaluation towards narcissus scented hosiery than to the other two scents, the study also concluded that the certain type of scents are more influential than others.

In regards to product scents, the popular discussion in the literature has been the congruency of the scent and the product. Bone and Jantrania (1992) found that scents that are congruent with product tend to enhance product evaluations. Respondents were given different scents in jars and they evaluated how appropriate these scents were for different products such as household cleaners, sunscreen, and paper plates. The lemon scented cleanser was evaluated more positively in product quality than coconut or no-scent conditions. Contrary to expectations, the evaluations for coconut scented and unscented versions did not differ. Krishna et al. (2010) found that if a product that is not inherently scented is infused with a scent, such as scented tissue or pencil, recall for the brand's attributes increases.

Scratch and sniff panels that are attached to ads have been extensively used by marketers. In order to understand the effects of scents on consumers in the advertising context (when scent is not the primary attribute of the product), Ellen and Bone (1998) found that, when the scent is congruent, scratch and sniff panels do not have any influence on consumers' attitudes toward the brand or the ad. If the scent is incongruent, however, these consumer evaluations tend to decrease.

### ***Ambient scents***

Marketers have paid great attention to consumer responses toward ambient scents. Ambient scent is an existing odor in the environment that is not related to a particular

object (Spangenberg et al. 1996). One of the first studies that reported preliminary analysis on ambient scents investigated the influence of odors on consumers' product evaluations (Hirsch 1990). Subjects evaluated Nike shoes in two different rooms; one room was scented with a floral odor, while the other one was not scented. When the room was scented, more people were more likely to buy the shoes. Some people liked the scent and some people did not; however, attitude toward the scent did not change the intention to buy. In another study, two slot machines in a Las Vegas casino were odorized with two different scents. A third slot machine was not odorized, presenting a control condition. Subjects spent more money gambling on the first slot machine than the others (Hirsch 1995). However, the significance of this research is not clear because the conditions were not realized in controlled environments (Spangenberg et al. 1996). Therefore, Spangenberg and his colleagues (1996) performed a similar experiment, and found that when an ambient scent exists, subjects in scented condition thought that they spent less time in the store than subjects in the no-scent condition. In addition, in the no-scent condition, subjects thought that they spent more time in the store than they actually did. These results suggest that people are more likely to spend time in a scented environment than an unscented environment.

The concept of congruency also applies to ambient scents. Extant literature shows that when the ambient odor is congruent with the product category, as opposed to incongruent, consumers spend more time processing the data, generate more self-references, and are more likely to make additional inferences (Mitchell et al. 1995). In addition, if ambient scents are congruent with the product category, they positively

influence consumers' evaluations. If the incongruence is very high, consumer evaluations are not influenced (Bosmans 2006).

#### **iv. Co-Brand and Scent Relationship: Research hypotheses**

##### **Sensory co-branding as extrinsic and intrinsic cues**

Products are bundles of attributes that are used as cues. An intrinsic product cue can be any product characteristic inseparable from the physical product itself, such as cacao in a chocolate cookie, or the scent of body lotion (Elder and Krishna 2010). An extrinsic cue is not a physical characteristic of a product, but is externally attributed, for example, price or brand name (Miyazaki, Grewal, and Goodstein 2005). Consumers' judgments about products and services are influenced by perceptual or evaluative attributes (Simonin and Ruth 1998). As evidenced in the strategic brand alliance literature, when two brands are presented together, consumers tend to be influenced by the image of the other brand. The stimulus information, such as intrinsic and extrinsic cues that consumers receive through advertising and direct physical experience, can influence thoughts and beliefs about these brands and products (Simonin and Ruth 1998). Therefore, in the case of sensory co-branding, both brands act as extrinsic cues, while the branded scent acts as an intrinsic cue. Sensory attributes such as taste, scent, and haptics are intrinsic cues that influence consumer perceptions about the products (Krishna 2012).

The extant literature shows how a company's brand name, an extrinsic cue, influences consumers. Allison and Uhl (1964) explored the impact of brand name on taste preferences. Results of a blind taste test show that experienced beer drinkers could not differentiate their preferred brand from other brands of beer when there were no labels. When the beers were labeled and brand names were available, participants rated their

favorite beer preference based on the brand name. In addition, brand as an extrinsic cue can change one's taste experience (Lee, Frederick, and Ariely 2006). In their experiment, Lee et al. (2006) added vinegar to beer and disclosed the brand names of the beer. Consumers made their choices based on the brand name, not the taste experiences, rating their preferred brand more highly despite alteration in actual taste.

Brand names as extrinsic cues influence consumers' evaluations of factors such as product performance or quality. For instance, consumers generally hold bias towards the quality of store brands. Therefore, national brands are ranked higher and are evaluated more favorably than store brands (Bellizzi and Martin 1982). In their store vs. national brand quality evaluations study, Sprott and Shimp (2004) found that when consumers had a chance to try the store brand (e.g. cleaning product and orange juice), their quality evaluations of the store brand were significantly more positive than those who did not try it. In their second study, when store samples were provided to consumers the authors found that there was no difference in quality perceptions when consumers tried the national high quality brand of orange juice, as opposed to not trying it. Therefore, when consumer expectations were already high for the national brand, expectations did not increase as a result of sampling. Brand name as the extrinsic cue influences consumers, regardless of product sampling exists or not. For the low quality version of the store brand, consumers who did not taste the orange juice evaluated it more favorably than those who tried it (in no taste condition, only brand name and packaging information were given). In addition, participants who tasted a high-quality version of the store brand orange juice evaluated it more favorably than those who rated the brand without tasting it. Therefore, sampling reflects consumers' opinions about the real taste of the orange

juice, demonstrating that intrinsic cues dominate extrinsic cues in this case. In other words, sampling influences consumers' evaluation of a brand depending upon their quality expectations. Providing samples of a high-quality version of the store brand can enhance evaluations of that brand, while sampling a low-quality version does not increase quality evaluations. Hence, brand name as an extrinsic cue exerts a strong influence on consumer evaluations and physical interaction with the brand influences consumers' perceptions and evaluations.

Sensory co-branded products include both extrinsic cues, such as brand names, as well as intrinsic cues, such as scent. The *cue utilization theory* states that consumers arrive at evaluations by using intrinsic cues related to product features as well as extrinsic cues such as brand name or price (Sprott and Shimp 2004). Intrinsic cues lead consumers to make evaluations when intrinsic features can be evaluated with high confidence. On the other hand, if intrinsic features cannot be evaluated, or if consumer involvement is low, extrinsic cues are much more influential. Therefore, physical characteristics of products will influence consumers more if they are able to confidently evaluate these characteristics (Sprott and Shimp 2004). In addition, direct physical experience tends to create more stable attitudes than indirect experience (Leclerc, Schmitt, and Dubé 1994). However, evaluation of the sensory experience and quality of a sensory product might follow a different process, as sensory products tend to be more ambiguous (Sprott and Shimp 2004).

Product ambiguity refers to conditions in which product that is open to multiple quality evaluations and interpretations (Ha and Hoch 1989). When individuals have multiple alternatives, they go through some processes to make a selection, such as

naming attributes, evaluating those attributes, and creating a general evaluation. Each of these stages can cause ambiguity (Ha and Hoch 1989). Within the present context, sensory products are more subjective, allowing individuals to perceive and evaluate the attributes differently. This situation includes both extrinsic and intrinsic cues. Sensory co-brands mainly have sensory attributes which are not one of the main attributes of the product. For instance, when Tide creates a sensory co-branding strategy with Febreze scent, the scent contribution of Febreze is not the main attribute. The main attribute of a laundry detergent is the cleaning power, not the scent. Another example would be Lip Smacker lip balm with Dr. Pepper taste and smell. The main attribute of a lip balm is its effectiveness in curing chapped lips, not the taste or the scent. Consumers can evaluate these cues differently if they have a chance to try the product or when they see it in an advertisement. Therefore, depending on the findings of Sprott and Shimp (2004), we offer that when a sensory co-branded product is presented to consumers in different forms (denoted and physical), consumer thoughts and cue processes will be different. We refer to cognitive theory and consumers' perception and processing of intrinsic and extrinsic cues to provide the theoretical foundation for understanding the influence of sensory co-branding on consumers.

### **Processing the cues: cognition**

Some findings in the previous literature suggest that intrinsic cues, such as the appearance of the food and the taste perceptions, tend to be processed more automatically with bottom-up processing (Elder and Krishna 2010). On the other hand, extrinsic cues tend to be processed more deliberately with top-down processing (Elder and Krishna 2010). Extrinsic and intrinsic cue processing can work interchangeably; it is difficult to



state that one is deliberate and the other is not (Elder and Krishna 2010). Therefore, the level of cognition involved in processing cues that create ambiguity in sensory co-branded products depends upon the presentation of the sensory product.

Cognition is defined as all mental processes that are used in perception, learning and remembering (Ashcraft 1989). Many cognitive processes occur rapidly and automatically, specifically if they have been learned and practiced. On the other hand, some cognitive processes are more deliberate and conscious (Ashcraft 1989). Previous literature uses cognitive elaboration as part of the cognitive process to understand processing of sensory cues such as olfactory cues (Ellen and Bone 1998) and vision cues (Elder and Krishna 2012). Cognitive elaboration is a continuum ranging from simple processing to more elaborative processing (Bone and Ellen 1999). The terms “cognitive process” and “cognitive elaboration” have been used interchangeably in the literature (e.g. Ellen and Bone 1998).

Sensory co-branded products claim to provide sensory experiences to consumers in product usage situations. However, consumers do not always have a chance to experience co-branded sensory products before making a purchase. Therefore, extrinsic and intrinsic cues can result in different extents of cognitive elaboration by consumers depending upon whether they have been exposed to an advertisement or they have physically sampled the product. Extant literature have been interested in how cognitive elaboration moderates the effect of an advertising message when consumers’ level of cognitive load manipulated (Chakravarti, MacInnis, and Nakamoto 1990; Shiv, Britton, and Payne 2004). Regardless of consumers’ cognitive status, viewing ads or smelling the product physically can directly lead to different levels of cognitive process as a result of

cues in the sensory co-branded product. Specifically, in the sensory co-branded product condition, the intrinsic and extrinsic cues are stronger than those in a regular product. Therefore, it is necessary to know how messages like ads and real conditions of sensory co-branding influence consumer's cognitive processes.

*Physical presentation and cognition.* Even though humans are generally able to detect odors, the ability to label the odors is very limited (Ellen and Bone 1998; Schab 1991). When consumers actually smell the products, they can have a hard time associating the specific brand with a specific odor, or they may be unable to define the odor. Thus, for sensory co-branded products, consumers might or might not identify the scent that the co-brand contributes. According to the brand alliances literature, when two brands are given to the consumer, if the second brand is well-known, the consumer might not need to engage in cognitive processing. As a result, the consumer does not have to think about what the brands contribute to one another (Gammoh, Voss, and Chakraborty 2006).

The scent of a product is an intrinsic cue and has a stronger influence when the consumer has a chance to try it. Yet, the sensory co-brand, which brings the new olfactory attribute, will act like an extrinsic cue because the scent comes from the co-brand. Therefore, consumers are expected to shallowly process the information, which might lead them to jump to conclusions about the sensory co-branded product. For example, the consumer might determine that the sensory co-branded product smells nicer based on the extrinsic information provided by the knowledge of the sensory co-branding without engaging in the deep cognitive process that would otherwise determine the contribution of the scent. Since odors are hard to identify, consumers in the sensory co-

branding condition might not put the effort into recognizing or identifying the scent of the brand. Instead, consumers might draw conclusions using lower cognitive elaboration results based on the brand name of the scent. The presentation of the product and branding strategy will act together to influence consumers' evaluations.

*Denoted presentation and imagery.* Building upon the literature, consumer evaluations will be different when customers do not have a chance to sample the sensory co-branded product. When a script or image is used in an advertisement, consumers need to process the information mentally, as they cannot smell the product. This process is referred to as imagery, a mental event involving visualization of a concept or relationship. It has been defined as the representation of sensory information in the memory (MacInnis and Price 1987). Imagery is processed as perceptions about an external stimulus. Therefore, imagery results in sensory representation. This representation can be multi-sensory, integrating multiple senses, such as taste and smell, or single-sensory. Imagery requires higher cognitive processing than the processing involved in the actual sampling of a product (McGill and Anand 1989).

Sensory co-branding as a sensory cue can create mental imagery in consumers' minds, even in conditions where customers cannot physically smell the product. Several neuro-imaging studies reveal that conceptual processing of sensory perceptions leads to neural activation of corresponding regions of the brain (Krishna 2012). For example, imagining hearing Beethoven played leads to activation of the auditory cortex (Zatorre and Halpern 2005). Silently reading words associated with strong smells like "cinnamon" or "garlic" activates the primary olfactory cortex (Krishna 2012), and seeing pictures of chocolate chip cookies activates the taste cortices (Simmons, Martin, and Barsalou 2005).

Therefore, in the context of the olfactory sense, mental imagery can take the form of olfactory imagery. Olfactory imagery has been defined in the extant literature as “the ability to experience a sensation of smell when an appropriate stimulus is absent” (Kleemann et al. 2009, p. 1), and is also referred to as the nose of the mind.

Imagery is a holistic process that tends to be effective in creating particular outcomes (MacInnis and Price 1987). Therefore, in olfactory imagery, the consumer can first develop the imagery of the scent or how it will smell in usage situations. The imagery process can occur even in the absence of instructions to imagine the situation or the attribute (McGill and Anand 1989). In order to imagine how the product is going to smell, consumers do not need to identify or know the branded scent. Based on previous literature, individuals often cannot name more than fifty percent of common odors (Schab 1991). Odor identification and trial is not a necessary condition for olfactory effects to occur (Ellen and Bone 1998; Elder and Krishna 2010; Krishna 2012). Olfactory cues can lead consumers to imagine the scent of a product when the scent is verbally or visually explained, even if the physical trial condition does not exist (Compeau, Grewal, and Monroe 1998; Elder and Krishna 2012).

Imagery might involve high and low cognitive elaboration (MacInnis and Price 1987). McGill and Anand (1989) suggest that usage of instructions to promote imagery will increase cognitive elaboration. However, in the sensory co-branded product, the olfactory cue as an intrinsic cue will act as instructions to imagine and lead consumers to create the olfactory imagery. In addition, some words can also elicit the imagery process (McGill and Anand 1989). Using the sensory cue as the name of the scent can create this effect. The sensory co-branded product creates an effortful process for consumers

because they try to process the contribution of the co-brand as a scent that is added to the existing product.

Parallel to the findings in the literature, we propose that consumers will process intrinsic and extrinsic cues in sensory co-branded products depending on product presentation. Since sensory co-branding adds ambiguity to the existing products, contributing a new olfactory attribute and an additional brand name, in some conditions, not choosing the sensory co-branding strategy can result in better consumer evaluations. With the physical presentation of the sensory co-branded product, consumers will have a chance to smell the product and make their evaluations accordingly. Since there are two brands (primary and secondary brand) and a strong sensory condition (co-branded scent of the product), consumers might use the brand name as an extrinsic cue instead of using the scent as an intrinsic cue in order to determine if the co-branded product is pleasant. Therefore, with low cognitive processing, consumers can quickly make positive evaluations by using the “branded” scent in the sensory co-branded product.

On the other hand, when consumers do not have a chance to smell the product, as in the denoted condition of advertisements, the situation becomes more ambiguous. Consumers need to process the sensory information given in the ad and engage in higher cognitive elaboration (mental imagery) to understand the contribution of sensory co-brand. Olfactory imagery will come from the scent of the co-brand. In this case, a sensory co-branded product might cause the consumer to process how the product will smell. However, when consumers deeply evaluate the information given, they might evaluate the sensory co-branding as unnecessary action. For instance, Swiffer wet mop uses Febreze lavender scent as a sensory co-brand. Swiffer wet mop already has a pleasant

scent and the primary purpose of the product is to clean the floors. When a consumer engages in mental imagery and thinks about the product, he or she can decide that Swiffer already smells nice with lavender scent and conclude that Febreze lavender scent will not add much value. When consumers are given the chance of metal imagery, the evaluation of the cues will not be an automatic process, creating the potential for the co-branded scent to be perceived as unnecessary. In addition, the co-branded scent (Febreze lavender) can create the perception of intensity of the scent. Intensity of scent is negatively related with scent evaluations (Spangenberg et al. 1996). When the scent becomes stronger, consumers can even evaluate the product negatively, because they do not have a chance to physically smell the product that is being advertised. Imagining the smell of a product can be a more affective experience than smelling the product itself (Compeau et al. 1998). Therefore, extrinsic and intrinsic cues can both be processed in different ways, depending on the product and personal characteristics. These factors will influence how consumers evaluate the product scent, quality, and sensory experience. Building upon the previous literature and the theoretical background the hypotheses are as follows:

*H1: Branding strategy will interact with sensory product presentation to influence product evaluation.*

*H1a: When the presentation is physical, quality of the sensory co-branded products will be evaluated more favorably than regular sensory products*

*H1b: When the presentation is denoted, quality of the regular sensory products will be evaluated more favorably than sensory co-branded products.*

*H1c: When the presentation is physical, scent of the sensory co-branded products will be evaluated more favorably than regular sensory products.*

*H1d: When the presentation is denoted, scent of the regular sensory products will be evaluated more favorably than sensory co-branded products.*

*H2: Branding strategy will interact with sensory product presentation to influence sensory product experience.*

*H2a: When the presentation is physical, sensory experience of sensory co-branded products will be evaluated more favorably than regular sensory products.*

*H2b: When the presentation is denoted, sensory experience of regular sensory products will be evaluated more favorably than sensory co-branded products.*

### **Individual factor: Need for smell**

Individuals differ in how they process sensory information (Peck and Childers 2003). Therefore, the scents of places and products might influence individuals differently (Wrzesniewski, McCauley, and Rozin 1999). The attention and importance that are given to scents vary from one individual to another (Wrzesniewski et al. 1999). Individual tendency to obtain and use scents to evaluate or purchase products is called a

“need for smell” (Krishna 2012). When consumers have a high need for smell, they have high tendency to look for olfactory cues and are more likely to evaluate products based on scent. For instance, anecdotal evidence of consumer product evaluations state that some consumers stop using certain products and create negative word of mouth just because they do not find the scent personally pleasing.

The need for smell concept takes its roots from the analogous concept of need for touch (NFT), developed by Peck and Childers (2003). The authors looked at individual differences in receptiveness to sensory information for individuals’ motivation to touch. Consumers differ in their haptic orientation; some prefer to utilize the information that comes from the haptic system. When individuals are in high need for touch, they prefer to shop in places where they can touch the products and they tend to make impulse purchase decisions (Peck and Childers 2008). Individuals with high NFT are more likely than those with low NFT to touch the products in order to make evaluations (Peck and Childers 2003). Peck and Childers (2003) also suggest that people with high NFT can store and access that haptic information; hence, they are likely to use less cognitive processing but have richer mental representation of haptic-related information (Krishna and Morrin 2008). NFT moderates the relationship between experience and confidence in product judgments (Peck and Childers 2008). When high NFT individuals are not given a chance to touch, they are less confident in product judgment. For low NFT individuals, confidence in judgment is not influenced by a lack of opportunity to touch when they have a clear ability to see the product.

Building upon the rationale established in the previous studies for need for touch and individual differences in scent perceptions, we attempt to understand the influence of



need for smell on consumers in the context of sensory co-branding. When branding strategy and presentation of the product act together to influence consumer experiences and evaluations, need for scent is expected to influence the strength of this relationship. As a result of individual cognitive processes, differences in need for smell might result in different evaluations. When physical smelling opportunity is given to individuals with a high need for smell, they are more likely to have the scent information in their memory and might not process the brand as a strong extrinsic cue. Also, when consumers with a high need for smell try the sensory co-branded product, they will satisfy their smelling need; as a result, the use of the co-brand as an extrinsic cue will not make a difference. These consumers will equally enjoy smelling a regular sensory product and co-branded sensory product.

On the other hand, consumers with low need for smell will process the extrinsic cue of the sensory co-brand name in addition to the intrinsic cue of scent when they have a chance to physically analyze the product. It is not necessary for consumers to process how that product is different than the regular one; the sensory co-brand name will create a difference. For instance, in the scope of need for touch, Krishna and Morrin (2008) found that people with high need for touch are not influenced by non-diagnostic haptic cues (flimsy packaging) when they evaluate the quality of drinking water. Krishna and Morrin (20008) explains this with two conditions. First, because of their lower need for cognitive processing for haptic information, they discount the haptic input that is non-diagnostic to the task. Second, they get equal pleasure in flimsy and high quality cups by touching them, since both cups fulfill the touching need. Hence, the evaluation does not change. On the other hand, since consumers with low need for smell do not generally

have the habit of processing olfactory information, they can appreciate the help of the sensory co-brand as an extrinsic cue in their cognitive process. Even though they have a chance to smell, for consumers with low need for smell, the sensory co-brand will help to reduce cognitive elaboration.

When a product is provided in an advertisement or any other denoted form, individuals with high need for smell tend to have richer mental stimulation (Peck and Childers 2008). The lack of a real smelling situation can be compensated for by extrinsic cues in the product smell situation. For instance, since consumer cannot smell a detergent through visual or auditory advertising, consumers' mental imagery can produce a decoy of the scent (Peck and Childers 2008). Therefore, in the condition where high need for smell individuals cannot smell a product, their olfactory imagery will be stronger due to desire to imagine the scent. Even though, sensory co-branded products can act as a stronger intrinsic cue (scent) and can create stronger imagery (cognitive elaboration), higher cognitive effort can lead to more ambiguity regarding the acquisition of brands and can increase the impact of not satisfying the need of smelling the product. On the other hand, when people are in low need for smell, their desire to imagine the scent of the product will be lower. The sensory co-branded product will not make an impact on their scent imagination (for example, they will not think "this product is going to smell amazing! I can imagine it how good it will smell!"). As there is no need to smell the product, mental imagery will be low and brand as an extrinsic cue will not make a difference. Building upon the previous literature and the theoretical background the hypotheses are as follows:

*H3a: When the presentation is physical, low need for smell individuals will evaluate the quality of the sensory co-branded products more favorably than regular sensory products. Quality evaluation of high need for smell individuals will not change between different branding strategies.*

*H3b: When the presentation is denoted, high need for smell individuals will evaluate the quality of the regular sensory products more favorably than sensory co-branded products. Quality evaluation of low need for smell individuals will not change between different branding strategies.*

*H3c: When the presentation is physical, low need for smell individuals will evaluate the scent of the sensory co-branded products more favorably than regular sensory products. Scent evaluation of high need for smell individuals will not change between different branding strategies.*

*H3d: When the presentation is denoted, high need for smell individuals will evaluate the scent of the regular sensory co-branded products more favorably than sensory co-branded products. Scent evaluation of low need for smell individuals will not change between different branding strategies.*

*H4a: When the presentation is physical, low need for smell individuals will evaluate sensory experience of sensory co-branded products more favorably than regular sensory products. Sensory product experience of high need for smell individuals will not change between different branding strategies.*

*H4b: When the presentation is denoted, high need for smell individuals will evaluate the sensory experience of regular sensory products more favorably than*

*sensory co-branded products. Sensory experience of low need for smell individuals will not change between different branding strategies.*

### **Sensory attribute functionality**

Olfactory attributes as sensory experiences are usually the secondary attribute in most products (Krishna 2010). Sensory attributes are often categorized as hedonic and they are related to sensory experiences (Batra and Ahtola 1991). In some products, consumers do not necessarily look for the sensory experiences as the first benefit. When consumers purchase a laundry detergent, for instance, the first purpose of their purchase is expected to be the cleaning power, not the scent of the product. However, consumers also expect their laundry to smell clean. Therefore, even if the scent is a sensory attribute, it can serve as functional attribute of the product. Scent, most often a secondary attribute, can be more hedonic or utilitarian for some product categories. Utilitarian (functional) and hedonic (sensual) attributes of products are not necessarily two ends of the same continuum (Okada 2005), and one attribute can serve for both attributes in different products.

Sensory co-branded products can carry functional sensory attributes. For example, co-brand scented garbage bags are more likely to be categorized as more functional than co-brand scented lip balm. Even though both products can create sensory experiences, blocking the bad smell of the garbage is more functional than enjoying the scent of the lip balm. Products do not have to be either hedonic or utilitarian; some sensory attributes can give them different dimensions. Hedonic attributes are generally evaluated based on how

much pleasure they provide, while utilitarian attributes are judged in terms of their functionality (Leclerc et al. 1994).

In general, utilitarian function is less ambiguous than hedonic function. In store sampling (which is the physical presentation of the product), brands generally aim to announce the products' utilitarian attributes, such as performance, to ease the decision making process (Leclerc et al. 1994). Hedonic attribute is already something consumers tend to enjoy but the perception of the benefit stays ambiguous (Okada 2005). However, utilitarian attribute is mainly related to the function of the scent and does not require deep cognitive thinking, as the benefit is clear. Instead of selling scented garbage bags, when Glad uses Febreze as the co-brand scent name, this will create evaluations about the "performance of the scent" of the garbage bags. When consumers have a chance to smell the product, the intrinsic cue scent will not influence their thoughts, extrinsic cue brand will. Therefore, if the real smelling condition exists, sensory co-branded product will act as an extrinsic cue and if the sensory product attribute is utilitarian, consumers will evaluate that product more positively. In addition, when sensory product attribute is hedonic the intrinsic cue scent will be available to consumers in both branding strategy. However, as long as consumers can smell and test the "hedonic" attribute, the branded scent itself (extrinsic cue) will not create a difference. Therefore, if the real smelling condition exists, and if the sensory product attribute is hedonic, evaluation of sensory co-branded and regular sensory products will not differ.

On the other hand, when consumers receive the sensory co-branding information through an ad, they might think about the sensory attribute usage situations and benefits in more detail. However, hedonic attributes are more ambiguous and subjective than

utilitarian attributes; cognitive thinking is needed to understand the benefit of the sensory product attribute. If the sensory attribute is hedonic, using the sensory co-brand name as an extrinsic cue can lead to more ambiguity and consumers can question the hedonic function. Brand names (existing) are perceived as contribution to the hedonic dimension of the products (Leclerc et al. (1994). Therefore, if the real smelling condition does not exist, regular sensory products will lead to less ambiguity if the sensory product attribute is hedonic and consumers will evaluate that product more positively. When the sensory product attribute is utilitarian, ambiguity tends to decrease (Okada 2005). Scent as the intrinsic cue will not be available to consumers; yet, consumers will not need the intrinsic cue, as the sensory function is utilitarian. The extrinsic cue coming from the brands in different branding strategies will not lead to different product evaluations due to the utilitarian function of the sensory attribute (not ambiguous). Evaluations can be focused on whether the function is beneficial, not the brand. Therefore, if the real smelling condition does not exist, consumers' evaluations will not change between different branding strategies. Building upon the previous literature and the theoretical background the hypotheses are as follows:

*H5a: When the presentation is physical, if the sensory attribute of the product is utilitarian, sensory co-branded products will lead to more positive quality evaluation than regular sensory products. If the sensory attribute of the product is hedonic, quality evaluations will not change between branding strategies.*

*H5b: When the presentation is denoted and if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive quality evaluation*

*than sensory co-branded products. If the sensory attribute of the product is utilitarian, quality evaluations will not change between branding strategies.*

*H5c: When the presentation is physical, if the sensory attribute of the product is utilitarian, sensory co-branded products will lead to more positive scent evaluation than regular sensory products. If the sensory attribute of the product is hedonic, scent evaluations will not change between branding strategies.*

*H5d: When the presentation is denoted and if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive scent evaluation than sensory co-branded products. If the sensory attribute of the product is utilitarian, scent evaluations will not change between branding strategies.*

*H6a: When the presentation is physical, if the sensory attribute of the product is utilitarian, sensory co-branded products will lead to more positive sensory experience than regular sensory products. If the sensory attribute of the product is hedonic, sensory experience will not change between branding strategies.*

*H6b: When the presentation is denoted and if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive sensory experience than sensory co-branded products. If the sensory attribute of the product is utilitarian, sensory experience will not change between branding strategies.*

To investigate six hypotheses, three experimental studies were conducted. Next three chapters demonstrate the effect of the relationship between branding strategy and product presentation on consumers' evaluations and sensory experiences (Study 1) and

investigate this relationship by adding two different moderators; need for smell (Study 2) and sensory attribute functionality (Study 3).



## CHAPTER III

### STUDY 1: The Effect of Branding Strategy and Product Presentation

Study 1 investigates how the interaction of sensory branding strategies (co-branding vs. regular) and presentation of the sensory products (physical vs. denoted) influence consumers' product and sensory evaluations. As stated in hypotheses 1 and 2, it is expected that sensory products will be evaluated more favorably when sensory co-branding strategy is used in physical presentation. In addition, regular branding strategy is expected to be evaluated more favorably in denoted presentation.

Before measuring these effects, two different pretests were carried out. The purpose of the first pretest was to select a product and a scent category to be used in Studies 1 and 2. After deciding on the product and the scent category, the purpose of the second pretest was to select the brands to be used with the products chosen.

#### i. Pretest 1

The first pretest was conducted to select a product category for the stimuli to be used in the first two studies. 113 (58 female, 55 male,  $M_{age}= 34$ ) Amazon MTurk respondents (highest quality of respondent criteria was selected) participated in the survey. The purpose of the pretest was to understand the level of importance of scents for various product categories and which scents were more liked than others.

In order to understand if scent was an important attribute for certain products, scent importance was measured using a 7-point Likert scale containing two statements: "Scent is an important attribute for me in the use of this product" and "It is important for me to smell the scent of this product when choosing it" (1-strongly disagree, 7-strongly agree); both items were adapted from Brasel and Gips (2014). 15 product categories that

were scented and suitable for everyday use were selected (dish soap, trash bags, laundry detergent, toilet paper, liquid hand soap, fabric softener, tissues, body lotion, all purpose cleaner, floor cleaner, hair shampoo, body wash, hand lotion, fabric refresher, dishwasher detergent). These categories represent a variety of scented products that are available in the market.

Liking of scent categories was measured with 7-point Likert scale (1-dislike very much, 7-like very much). 14 different scent categories (used in current household/personal care products) were given to respondents (fresh cotton, ginger, baby powder, cinnamon, sandalwood, vanilla, rose, floral, lilac, fruity, mint, orange, lavender, lemon). Respondents also answered 2 open-ended questions regarding the scents of products: “Do you pay attention to the scents of the products in general? Please explain as much as you can” and “What kind of product scents do you prefer when buying products for your home and yourself?”

Results of the pretest revealed that the scent of a body wash product ( $M_{\text{bodywash}} = 5.92$ ) had the highest importance for respondents, followed by hair shampoo ( $M_{\text{shampoo}} = 5.70$ ), body lotion ( $M_{\text{lotion}} = 5.51$ ), laundry detergent ( $M_{\text{laundrydetergent}} = 5.50$ ) and fabric softener ( $M_{\text{softener}} = 5.32$ ). In addition, smelling the scent of the product was important for body wash ( $M_{\text{bodywash}} = 5.64$ ) followed by hair shampoo ( $M_{\text{shampoo}} = 5.61$ ), body lotion ( $M_{\text{lotion}} = 5.38$ ), liquid hand soap ( $M_{\text{soap}} = 4.88$ ), and laundry detergent ( $M_{\text{laundrydetergent}} = 4.85$ ). Therefore, body wash was selected as the product to be used in Studies 1 and 2.

For the scent preference, fresh cotton scent was the most liked ( $M_{\text{freshcotton}} = 3.96$ ) followed by ginger ( $M_{\text{ginger}} = 3.92$ ), baby powder ( $M_{\text{powder}} = 3.86$ ), cinnamon ( $M_{\text{cinnamon}} = 3.76$ ) and vanilla ( $M_{\text{vanilla}} = 3.67$ ). Responses for the open-ended questions regarding scent

preference were grouped into scent category by two native speaker judges. 95% of the respondents stated that they pay attention to the scents of the products in general. Only 4 respondents mentioned that they prefer unscented products in their daily use. Not every respondent mentioned a specific scent preference; however, parallel with previous literature (i.e. De Lange et al. 2012), 22% (n=25) of the respondents mentioned that they prefer lemon based scents for home cleaning products. 27% (n=30) of the respondents stated that they prefer scents that are “fresh,” “clean,” and “spring like” in their personal care products.

As body wash was selected as the product category to be used in Studies 1 and 2, it was important to use a scent that would go well with the type of personal product selected. The results showed that none of scents were highly preferred (the highest mean is 3.96/7 for fresh cotton scent). The top preferred scent, fresh cotton, was not a clear scent to describe in comparison to vanilla or ginger. According to the extant literature, it is hard for consumers to name the scents or define them (Morrin and Ratneshwar 2003). In order to decide which scent was to be used, the statements from the scent preference open-ended questions were used. Consumers preferred to smell and use refreshing scents in their home and personal care products; however, the mean of responses for liking of the scent “fresh cotton” was not very high. Therefore, as the words “spring” and “water” were commonly mentioned by the respondents in the pretest, the scent name “Spring Water” was created, combining word cues that were taken from open ended questions. This name addressed the general cleanliness and freshness preferences expressed by survey respondents. In addition, to be sure that the scent was realistic, two graduate

assistants identified body wash products (also laundry detergent, soap, and shampoo) with “Spring Water” scent available in the market.

## **ii. Pretest 2**

In addition to the product category, all studies also required two brand names that would constitute the sensory co-branded and regular sensory product. Using familiar and known brands was necessary because in both denoted and physical conditions branding would act as both an intrinsic and extrinsic cue. In addition, the masculinity and femininity of the brand was an important criterion when selecting the brands to be used in studies to eliminate the gender effects. Therefore, the second pretest identified gender-neutral and well-known brand names.

Two graduate assistants who were not aware of the purpose of the studies went to a superstore and made a list of body wash/soap brands that were available. Some of the very feminine and masculine brands such as Axe and Dove were selected on purpose, to make sure that respondents paid attention to the different brand names. 60 (female= 31, male= 29;  $M_{age}= 34$ ) Amazon MTurk respondents (highest quality of respondent criteria was selected) participated in the online survey. Respondents rated level of masculinity and femininity of 15 brands (Dove, Nivea, Dial, Aveeno, Caress, Soft Soap, Irish Spring, Olay, Neutrogena, Suave, Jergens, Vaseline, Axe, Old Spice and Burt’s Bees).

Perceived masculinity was measured with 7-point Likert scale (This brand is: 1- not at all masculine, 7- very masculine) and perceived femininity was measured with 7-point Likert scale (This brand is: 1- not at all feminine, 7- very feminine) both adopted from Golden, Allison and Clee (1977) and Grohmann (2009). In addition, familiarity and usage frequency of the brand given were measured with a 7-point Likert scale with

questions including “How familiar are you with the given brand” (1- not at all familiar, 7- very familiar) adapted from Kent and Allen (1994) and “How frequently do you use any product(s) of the brands given below” (1- never, 7-very frequently), adapted from Westbrook and Oliver (1991).

The results (please see table 2) showed that Dove is the most well-known brand ( $M_{\text{familiarity}} = 6$ ) but it was perceived as very feminine ( $M_{\text{femininity}} = 6.03$ ). The main purpose of this pretest was to find a gender-neutral brand. Therefore, Dial was selected as the main product brand considering gender neutrality and familiarity ( $M_{\text{femininity}} = 3.97$ ,  $M_{\text{masculinity}} = 3.92$ ,  $M_{\text{familiarity}} = 5.01$ ) and Suave ( $M_{\text{femininity}} = 4.11$ ,  $M_{\text{masculinity}} = 3.57$ ,  $M_{\text{familiarity}} = 5.07$ ) was selected as the co-brand. In addition to these measures, prices of body wash products of these brands (Suave price range: \$2-\$2.99; Dial price range: \$3-\$3.99) and availability in the market were used as criteria in the selection process of the brands.

### **iii. Main Study Design**

Participants were 156 undergraduate and graduate students attending two neighboring Mid-West universities. Participants were invited to a computer lab where the experiment setup was arranged. Experiments were arranged in four different sessions on two different days due to seating limitations and privacy concerns. Students were given extra course credit for their participation. The hypotheses were tested using a 2 (product presentation: physical vs. denoted) x 2 (sensory branding: co-brand vs. regular) between-subjects design. Participants were randomly assigned to one of the conditions based on the month of their birthdates and were informed that they were expected to evaluate some products. Two experiment sessions were dedicated to physical condition and required

respondents to smell the product. The other two experiment sessions were dedicated to the denoted condition and no product sample was provided to the respondents. Both conditions were arranged in different sessions to eliminate the influence of the product existence in the lab for the denoted condition. The ambient scent was controlled for by providing a fresh air flow, reducing any odors that could influence subjects. Two graduate assistants observed all participants and helped the researcher in the experiment.

Table 2. Means of the masculinity and femininity pretest

<b>Brand name</b>	<b>Familiarity</b>	<b>Masculinity</b>	<b>Femininity</b>
Dove	6.00	3.15	6.03
Nivea	5.66	3.64	5.30
<b>Dial</b>	<b>5.01</b>	<b>3.92</b>	<b>3.97</b>
Aveeno	4.67	3.21	4.64
Caress	4.79	2.49	5.21
Soft Soap	4.56	3.05	4.79
Irish Spring	4.89	4.34	3.36
Olay	5.62	3.00	5.89
Neutrogena	5.21	3.03	4.79
<b>Suave</b>	<b>5.07</b>	<b>3.57</b>	<b>4.11</b>
Jergens	4.79	3.03	4.25
Vaseline	5.97	4.28	4.72
Axe	5.66	5.52	2.80
OldSpice	5.54	5.05	2.38
Burt'sBees	4.89	3.72	3.75

### **Procedure**

Participants were seated in as private of settings as possible. Participants read instructions stating that researchers were interested in their opinions about a body wash product. They did not know that their evaluations of the sensory aspect of the products were being studied. Each participant was assigned to one of the four conditions (physical

smelling condition with co-brand vs. regular brand and denoted condition with co-brand vs. regular brand).

Dial body wash was used as the sensory product. Sensory product branding was manipulated; Dial with Spring Water Scent was used in the regular sensory condition, and Dial with Suave Spring Water Scent was used in the sensory co-branding condition. Known brands were used to determine the impact of co-branding (as stated in pretest 1). If brands were fictitious or unknown, the respondents could not have identified the extrinsic and intrinsic cues that came from the co-brand.

The ambiguous scent category name “Spring Water” was used because consumers prefer personal product scents that are perceived as fresh and clean according to the results of pretest 1. Both “Spring” and “Water” symbolize freshness and cleanliness. Both brands had ambiguously scented body wash products that were available on the market (i.e. Suave Ocean Breeze, Dial Twilight). Also, Dial recently created a real “Spring Water” scented body wash.

For both denoted and physical presentations, participants were given a scenario stating general information about the product and were asked to answer some questions. In both conditions, a computer lab was used and students read the information from their computer screen. In the physical presentation and sensory co-branding (in regular branding condition Suave was removed from the scenario) condition, participants read the following information: *“The body care brand Dial has recently created a new body wash series with a new scent: Suave Spring Water. A sample of the body wash will be provided to you today and you will be asked some questions regarding the product. Here is also the picture of the bottle”* To make the physical conditions more realistic (similar

to the store condition) and to provide the brand names, a picture of the bottle (also used in the advertisements) was provided. After participants read the information about the product, a sample of the body wash was given in a clear glass container with no information attached. Participants were asked to freely analyze the product. All participants smelled the product and some even touched or checked the consistency of the product sample given. A real body wash was used to provide a realistic sample and the original name of the scent was “Spring Rain” (which was selected on purpose as it was very close to Spring Water). After that, product samples were taken away and respondents answered the questions.

In the denoted presentation and sensory co-branding condition, participants read the following information “*The body care brand Dial has recently created a new body wash series with a new scent: Suave Spring Water. The advertisement is attached below. Please take a look at the ad and you will be asked some questions regarding the product.*” In the advertisement given, participants were clearly able to see the original product and its packaging. No extra information regarding the product was given in order to make physical and denoted conditions similar to each other. A professional graphic designer created the images and ads (please see figure 2). The same bottle that was shown in the physical condition was used in the advertisement. A short sentence “Brace yourself for this body wash infused with Suave’s (Suave was removed from the regular branding condition) Spring Water scent” appeared at the bottom of the advertisement. This statement was taken from a real Dial body wash advertisement. In order to prevent priming of cognitive effort, minimal number of words was used. Visual cues regarding



Figure 2. Advertisements used in Study 1 and Study 2

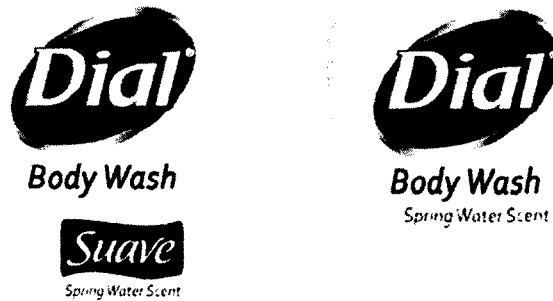
a) Sensory Co-branded Product



b) Regular Sensory Product



c) Bottles of the products (Co-branded and Regular)



scent, such as objects were not used in the ad or bottle. The colors of the ad were carefully selected; no colors were used that would indicate the scent of the product. Product bottle was white and original brand logos were used.

**Dependent Variable Measures**

*Product quality.* A perceived product quality scale was adapted from Sprott and Shimp (2004) and measured with three 7-point Likert scale (Cronbach's  $\alpha = .96$ ) including "All things considered, I would say this product has" (1= poor overall quality, 7= excellent overall quality), "This product has" (1= very poor quality, 7= very good quality), and "Overall, this product is" (1= poor, 7= excellent).

*Scent evaluation.* Scent evaluation was adapted from Spangenberg et al. (1996) and measured with 7-point semantic differential scale (Cronbach's  $\alpha = .96$ ). Participants were asked to rate the scent of the product in terms of negative/positive, unattractive/attractive, uncomfortable/ comfortable, bad/good, boring/stimulating, and uninteresting/interesting.

*Sensory experience.* Sensory experience with the product (perceived in the denoted condition) was measured with a 7-point Likert scale (Cronbach's  $\alpha = .73$ ) containing statements of: "This brand makes a strong impression on my senses," "I find this brand interesting in a sensory way," "This brand does not appeal to my senses" (1 = strongly disagree, and 7 = strongly agree), adapted from (Brakus et al. 2009).

### **Covariates**

*Cognitive effort.* In order to make sure that respondents reviewed the product and the information in the ad, self-reported cognitive effort (*extent of evaluation*) was measured with a 7-point Likert scale response to the statement "the extent to which you tried to evaluate the product" (1 = not at all, 7 = very much), adapted from Ellen and Bone (1998). In addition, mental imagery was measured to investigate how much effort the respondents put into thinking about the product (*extent of imagining usage*). A mental imagery scale was adapted from Elder and Krishna (2012) and measured with response to the statement "To what extent while viewing the product could you imagine using the body wash?" (1 = not at all, 7 = a great extent). In both conditions, the time that respondents spent examining the product was measured to investigate the extent of cognitive elaboration (*time spent*). In both denoted and physical conditions, the automatic

timer feature of the Qualtrics survey software was used to record the time that the respondent examined the information given (e.g. Shiv et al. 2004).

*Familiarity and usage.* Brand familiarity and usage frequency of the brand given were measured with responses to two questions: “How familiar are you with the given brand” (1-not at all familiar, 7- very familiar) adapted from Kent and Allen (1994) and “How frequently do you use any product(s) of the brands given below” (1-never, 7-very frequently), adapted from Westbrook and Oliver (1991).

*Additional measures.* Participants rated the scent intensity (perceived scent intensity in the denoted condition) with “The scent of the product is” (1= very weak, 7= very strong) adapted from Spangenberg et al. (1996). Demographics of the respondents (gender, age, marital status) were also measured.

*Thoughts.* In the physical condition, respondents had opportunity to smell the product; in the denoted condition, they only reviewed the advertisement. In both conditions, respondents stated the thoughts that came to mind about the product after they examined it. Subjects were asked “*please write down what you were thinking as you were looking over the product.*” Two native speaker judges coded thoughts in four categories: *scent (sensory)* related, *brand* related, *product quality* related, and *imagery* related thoughts. Respondents’ thoughts are very important in determining the level of cognitive elaboration, depending on the average number of attributes and details of thoughts (i.e. Elder and Krishna 2010; McGill and Anand 1989).

#### **iv. Results of Study 1**

##### **Manipulation check**

Participants were asked to respond to the degree with which they agreed or disagreed with the following questions: “The product shown contains only one brand” for the branding strategy and “I physically reviewed the product shown above” for the presentation condition (1=strongly disagree, 7=strongly agree). Participants who received sensory co-branded product significantly scored lower ( $N=74$ ,  $Mean= 1.26$ ) than participants who received sensory regular product ( $N=82$ ,  $Mean= 6.7$ ) on the question “The product shown contains only one brand” and perceived that there was more than one brand in the co-branded product ( $F(1, 154) = 3729$ ,  $p=.000$ ). Participants who received the physical condition significantly scored higher ( $N=76$ ,  $Mean= 6.67$ ) than those who received the denoted condition ( $N=80$ ,  $Mean= 1.19$ ) on the question “I physically reviewed the product shown above” ( $F(1, 154) = 4882$ ,  $p = .000$ ). As a result, the effectiveness of manipulations was supported.

##### **Results**

The sample consisted of 156 participants; 95 (61%) male and 61 (39%) female. The age of the participants ranged from 19 to 63 with the average age of 28.89. Both product presentation and sensory branding strategy were manipulated.

Hypotheses 1 and 2 were tested using two-way multiple analysis of variance (MANOVA) and univariate analysis of variance (ANOVAs). Covariates including extent of evaluation, extent of imagining usage, submission time, scent intensity, gender, age, and familiarity with the brand were entered as covariates. However, except extent of imagining usage and age, all covariates were insignificant and dropped from analysis. As

suggested by Hair et al. (2006), covariates of *extent of imagining usage* and *age* were tested for independence of treatment variables and covariates. However, both covariates (age:  $F(1, 152) = 50.67, p = .000$ ; extent of imagining usage:  $F(1, 152) = 27.84, p = .000$ ) were dependent on the presentation and branding strategy, were dropped from the analysis.

The MANOVA results indicated significant multivariate effect for the interaction between branding strategy and product presentation on dependent variables (Wilks'  $\lambda = .947, F(3, 150) = 2.821, p < .05$ ). In addition, the results indicated significant multivariate main effects for presentation (Wilks'  $\lambda = .864, F(3, 150) = 7.89, p = .000$ ) and branding strategy (Wilks'  $\lambda = .880, F(3, 150) = 6.82, p = .000$ ).

These significant results were decomposed with univariate ANOVAs (please see table 3). Hypotheses 1 and 2 stated that branding strategy interacts with sensory product presentation to influence product evaluation. Consistent with the hypotheses, the interaction between branding strategy and product presentation showed significant effects on product quality ( $F(1, 156) = 4.994, p < .05$ ), scent evaluation ( $F(1, 156) = 4.360, p < .05$ ), and sensory experience ( $F(1, 156) = 5.009, p < .05$ ). In order to test hypotheses 1a, 1b, 1c, 1d, 2a, and 2b, planned contrasts were carried out. Hypotheses 1a, 1c, and 2a stated that when the presentation is physical, sensory co-branded products are evaluated more favorably than regular sensory products in terms of product quality (H1a), scent evaluation (H1c), and sensory experience (H2a). Planned contrast results showed that in the physical condition, there was no significant difference between sensory co-branded product and regular sensory product on the evaluation of product quality ( $F(1, 152) = 1.302, ns$ ;  $M_{\text{regular}} = 4.187$  vs.  $M_{\text{co-brand}} = 4.495$ ), scent evaluation ( $F(1, 152) = .439, ns$ ;

$M_{\text{regular}}=4.598$  vs.  $M_{\text{co-brand}}=4.805$ ) and sensory experience ( $F(1, 152) = .398$ , *ns*;  $M_{\text{regular}}=4.081$  vs.  $M_{\text{co-brand}}=4.276$ ). Therefore, hypotheses 1a, 1c, and 2a were not supported.

On the other hand, Hypotheses 1b, 1d, and 2b stated that when the presentation is denoted, regular sensory products are evaluated more favorably than sensory co-branded products in terms of product quality (H1b), scent evaluation (H1d), and sensory experience (H2b). Planned contrast results showed that, in the denoted condition, the co-branded sensory product resulted in a statistically significant better product quality evaluation ( $F(1,152) = 19.189$ ,  $p=.000$ ;  $M_{\text{regular}}=4.593$  vs.  $M_{\text{co-brand}}=5.744$ ), scent evaluation ( $F(1,152) = 13.523$ ,  $p=.000$ ;  $M_{\text{regular}}=4.805$  vs.  $M_{\text{co-brand}}=5.923$ ), and sensory experience ( $F(1,152) = 14.903$ ,  $p=.000$ ;  $M_{\text{regular}}=4.268$  vs.  $M_{\text{co-brand}}=5.427$ ) than in the regular sensory product (please see figure 3). Therefore, hypotheses 1b, 1d, and 2b were not supported.

Table 3. Study 1 ANOVA Results

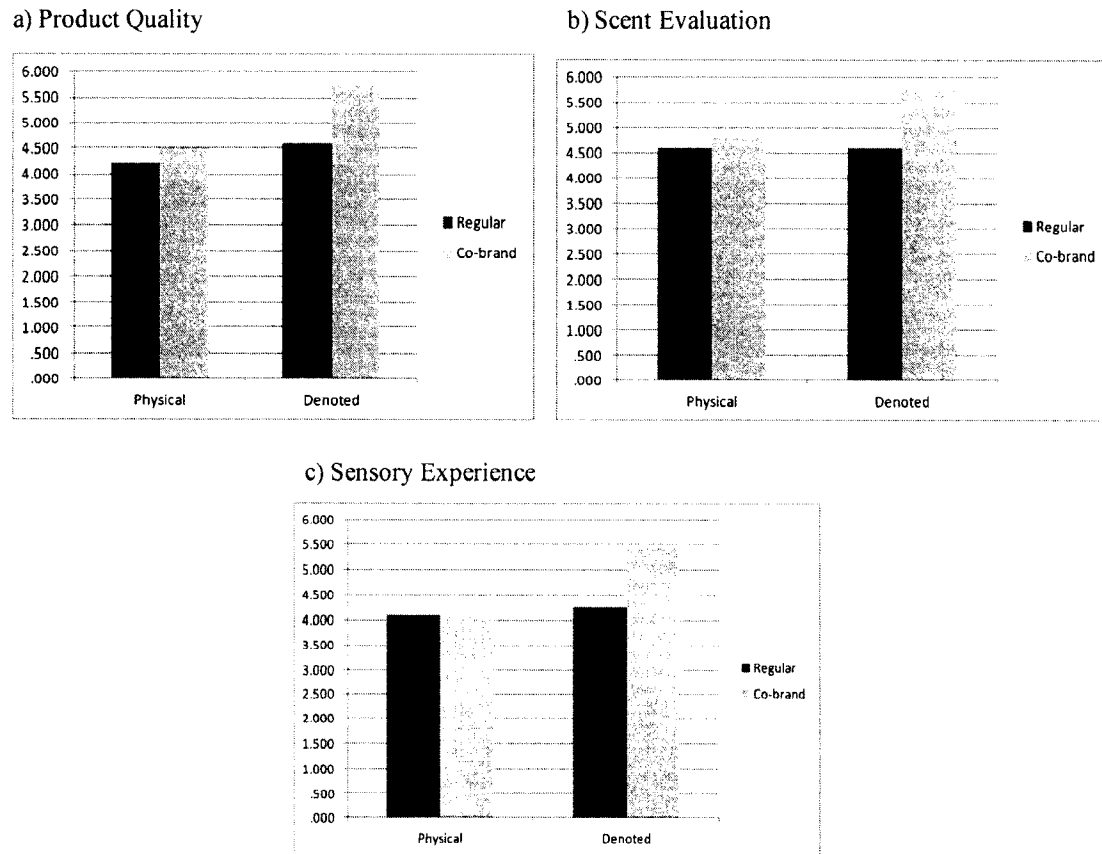
<i>Variable</i>	Product Quality	Scent Evaluation	Sensory Experience
	<i>F</i>	<i>F</i>	<i>F</i>
Presentation strategy	19.299**	9.233**	9.649**
Branding strategy	14.988**	9.229**	9.878**
Presentation * Branding	4.994*	4.360*	5.009*
Model	13.252**	7.689**	8.263**

\* $p<.05$  \*\* $p<.01$

Presentation strategy: Physical vs. denoted

Branding strategy: Regular vs. co-branding

Figure 3. The interaction effects of branding strategy and presentation strategy on product quality, scent evaluation and sensory experience.



Even though thoughts regarding the product were measured in both conditions, respondents' thoughts were not very clear or well stated. 70 of the respondents mentioned thoughts related to scent; only 6 and 8 respondents mentioned the brand and imagery related thoughts, respectively. Therefore, thoughts of the respondents were not used in the analysis. In order to identify the depth of cognitive effort, mean differences between conditions were also checked. When the presentation is physical, the mean of *extent of imagining usage* for sensory co-branded product ( $M_{\text{co-brand}} = 4.457$ ) was higher than for regular sensory product ( $M_{\text{regular}} = 3.927$ ). In addition, when the presentation is denoted, the mean value of *extent of imagining usage* was higher than the physical condition for



both sensory co-branded product ( $M_{\text{co-brand}} = 5.462$ ) and regular sensory product ( $M_{\text{regular}} = 5.317$ ). In summary, consistent with the theory and expectations, the *extent of imagining usage* of the product that refers to cognitive effort was higher in the denoted condition than in the physical condition.

#### **v. Discussion**

Study 1 provides evidence that consumer evaluations of products and sensory experiences can result in different responses depending upon whether they have been exposed to an advertisement or whether they have physically sampled the product and the branding strategy of the product. Contrary to expectations, consumers evaluated sensory co-branded products more positively when they reviewed the advertisement of the product. Hence, when consumers were given the advertisement, they evaluated Dial with Suave Spring Water scent (sensory co-branded) more positively than Dial with Spring Water scent (regular sensory). In addition, there was no difference in the evaluation of the sensory co-branded products and regular sensory products when consumers had a chance to physically evaluate and smell the product. When consumers were given the product to analyze, their evaluations of Dial with Suave Spring Water scent (sensory co-branded) and Dial with Spring Water scent (regular sensory) did not vary.

An explanation for the findings in Study 1 can be that cognitive process in the denoted condition may have decreased the ambiguity coming from the co-brand. It was proposed that sensory co-branded products would lead to ambiguity in the denoted condition, as co-branded products include multiple brands and tend to require more cognitive elaboration. Some findings in the previous literature suggest that intrinsic cues can be processed more automatically, while extrinsic cues tend to be processed more

deliberately (Elder and Krishna 2010). Both cue processing can work interchangeably. In the absence of intrinsic cues, imagining usage of the product was higher in the denoted condition than in the physical condition. Therefore, better elaboration may have resulted in better understanding of the contribution of the second brand (co-brand: extrinsic cue) in the absence of intrinsic cues (scent), which might have decreased ambiguity in the denoted condition. Consequently, consumers evaluated sensory co-branded products more positively when they were given the advertisement.

Consumers' evaluations did not differ among branding strategies in the physical condition. This evaluation can result from whether consumers' expectations are satisfied with intrinsic cues or not (i.e. "product smells nice, it must be a good product" or "this product smells ok, it might not be very different than other products"). As intrinsic cues influence consumers' evaluations, only smelling the product can create the judgments. Therefore, branding strategy as an extrinsic cue might not have made a contribution to the scent and not led to different evaluations between branding strategies. Therefore, when consumers received a chance to evaluate the sensory product physically, they may have automatically set their evaluations based on scent regardless of branding strategy and not deliberately processed the brand information. Consequently, consumers' evaluations did not differ between sensory co-branded product and regular sensory product when they were given the real product to analyze.

These results suggest that extrinsic and intrinsic cues that come from multiple branding strategies can result in different evaluations based on the presentation of the product to the customers. Even though specific hypotheses related to the physical presentation of the product were developed in Chapter 2, they will not be addressed in

future studies as the results of Study 1 did not show any significant difference between the two branding strategies in the physical condition.

## **CHAPTER IV**

### **STUDY 2: The Effect of Need for Smell**

Study 2 investigates the influence of need for smell on consumers' evaluations and experiences. According to the results of the first study, the interaction of branding strategy and presentation influenced product evaluation, scent evaluation and sensory experience. However, there was no significant difference between sensory co-branding and regular sensory branding in the physical condition where respondents could physically smell the product. In the denoted condition, however, the magnitude of sensory co-branding strategy was significantly larger than regular branding strategy. Therefore, in order to investigate this relationship with the influence of need for smell, physical condition was dropped from Study 2.

Study 2 examines how interaction of consumers' need for smell and branding (co-branded and regular) strategy influences consumers' product and sensory evaluations. As stated in hypotheses 3 and 4, it is expected that individuals with a high need for smell will evaluate regular sensory products more favorably than sensory co-branded products. In addition, evaluation of the product for individuals with a low need for smell will not change between the two branding strategies.

#### **i. Study 2 Design**

149 Amazon MTurk respondents (highest quality of respondent criteria was selected) participated in an online survey. The hypotheses were tested only in the denoted condition using a 2 (sensory branding: co-brand vs. regular) x 2 (need for smell: high vs. low) between-subject design. Participants were randomly assigned to one of the

conditions. Branding strategy and the level of need for smell were manipulated with different scenarios.

### **Procedure**

Participants were given an online survey and were informed that they would be asked some questions regarding consumer products. Instructions and different scenarios were given to the participants. The same product, Dial body wash, was used as the sensory product (please see figure 2). Parallel with Study 1, sensory product branding was manipulated; Dial with Spring Water Scent was used in the regular sensory condition, and Dial with Suave Spring Water Scent was used in the sensory co-branding condition.

The need for smell construct was manipulated with a goal manipulation scenario. People may automatically accept and aim to accomplish a goal that is given as another person's behavior (Aarts, Gollwitzer and Hassin 2004). For instance, in their study, Poor et al. (2003) found that after viewing of images of people consuming unhealthy food, real consumers' taste perceptions were increased. Also, this goal manipulation acted as a justification agent for real consumers for following indulgent consumption experience. It was shown that the perception of another person's behavior can trigger overlapping representations of that behavior in the observer, leading to synchronicity without intention or awareness (Friedman et al. 2010).

Parallel with the goal manipulation task that was adapted from Aarts, Gollwitzer and Hassin (2004), the need for smell was framed as someone else's behavior. Before the questions related to the body wash were revealed, a shopping task was given to the respondents. Respondents read a scenario about their roommate:

*You are going to the grocery store and you ask your roommate if she/he needs anything from the store. Your roommate realizes that she/he is out of body wash and asks you to buy a bottle of body wash for her/him. You are in the grocery store and trying to decide which body wash to buy. Your roommate did not mention any preference.*

In the high need for smell condition, the scenario continued as “*You know that your roommate enjoys the scents of the products, looks for the scented products and smells them where possible when she/he shops. Scents of the products are important for him/ her. Please state below what kind of body wash you would pick for your roommate.*”

In the low need for smell condition, the scenario continued as “*You know that your roommate does not care much about the scents of the products, does not look for specifically scented products when she/he shops. Scents of the products are not important for him/her. Please state below what kind of body wash you would pick for your roommate.*”

Consistent with the goal contagion studies in the extant literature (i.e. Aarts et al. 2004; Hassin et al. 2009, Friedman et al. 2010), respondents’ preference for the body wash selection actually was not related to the main study. The only purpose of these scenarios was to make the respondents adopt somebody else’s goals and lead them to feel like they care (high NFS) or do not care (low NFS) about the scent of the products. After the task, the respondents were informed that they had completed the first part of the questionnaire.

In the second part of the survey, the same procedure that was used in Study 1 was repeated. In the sensory co-branding condition, participants read the following

information “*The body care brand Dial has recently created a new body wash series with a new scent: Suave Spring Water. The advertisement is attached below. Please take a look at the ad and you will be asked some questions regarding the product.*” In the regular sensory branding condition, Suave was removed from the scenario and the advertisement. In the advertisement, respondents were clearly able to see the original product and its packaging (please see Figure 2 for advertisement details).

### **Dependent Variable Measures**

Parallel with Study 1, product quality (Cronbach’s  $\alpha = .96$ ), scent evaluation, and (Cronbach’s  $\alpha = .96$ ) sensory experience (Cronbach’s  $\alpha = .84$ ) were measured as dependent variables (for items, please see study1).

### **Covariates**

Parallel with Study 1, extent of evaluation, extent of imagining usage, time spent, familiarity with Dial brand, frequency of usage, scent intensity, gender, and age were measured as covariates (for items please see study1). Additionally, *extent of imagining the scent* was measured with a 7-point Likert scale response to the statement “as you viewed the ad, to what extent did you imagine the scent of the product” (1= not at all, 7= very much) adapted from Elder and Krishna (2012).

## **ii. Results of Study 2**

### **Manipulation check**

Participants were asked to respond to the degree to which they agreed or disagreed with the following questions: “The product shown contains only one brand” and “The product shown contains two brands” for the presentation condition (1=strongly disagree, 7=strongly agree). Participants who received the sensory co-branded product

significantly scored lower ( $N=67$ ,  $\text{Mean}= 2.46$ ) than participants who received sensory regular product ( $N=82$ ,  $\text{Mean}= 6.57$ ) on the question of “The product shown contains only one brand” ( $F(1, 147) = 359.539$ ,  $p=.000$ ). Participants who received the sensory co-branded product significantly scored higher ( $N=67$ ,  $\text{Mean}= 5.82$ ) than participants who received sensory regular product ( $N=82$ ,  $\text{Mean}= 1.54$ ) on the question of “The product shown contains two brands” ( $F(1, 147) = 355.018$ ,  $p=.000$ ).

Participants were also asked to respond to the degree to which they agreed or disagreed with the following question: “The person defined in the scenario is interested in the scents of the products” (1=strongly disagree, 7=strongly agree). Participants who received the low need for smell scenario scored significantly lower ( $N=76$ ,  $\text{Mean}= 1.23$ ) than participants who received the high need for smell scenario ( $N=73$ ,  $\text{Mean}= 6.65$ ) ( $F(1, 147) = 4641$ ,  $p=.000$ ). As a result, effectiveness of both need for smell and branding strategy manipulations were supported.

## Results

The sample consisted of 149 participants; 87 (58%) male and 62 (42%) female. The age of the participants ranged from 18 to 74 with the average age of 36.42. Both need for smell and sensory branding strategy were manipulated.

Hypotheses 3 and 4 were tested using two-way multiple analysis of covariance (MANCOVA) and univariate analysis of covariance (ANCOVAs). Covariates including extent of evaluation, extent of imagining usage, extent of imagining the scent, submission time, gender, age, and familiarity with the brand were entered as covariates. The first run of MANOVA revealed that, other than extent of imagining usage and extent of imagining the scent, all covariates were insignificant and dropped from analysis.



The MANCOVA results indicated significant multivariate effect for the interaction between branding strategy and level of need for smell on dependent variables (Wilks'  $\lambda = .917$ ,  $F(3, 141) = 4.235$ ,  $p < .01$ ). In addition, the results indicated significant multivariate main effects for branding strategy (Wilks'  $\lambda = .932$ ,  $F(3, 141) = 3.437$ ,  $p < .05$ ) but not for need for smell (Wilks'  $\lambda = .967$ ,  $F(3, 141) = 1.610$ ,  $ns$ ). Covariates extent of imagining usage (Wilks'  $\lambda = .868$ ,  $F(3, 141) = 7.152$ ,  $p = .000$ ) and extent of imagining scent were also significant (Wilks'  $\lambda = .946$ ,  $F(3, 141) = 2.702$ ,  $p < .05$ ).

These significant results were decomposed with univariate ANCOVAs (please see table 4) on each dependent variable. Results indicated significant effects of the covariate extent of *imagining usage* of the product ( $F(1, 143) = 7.066$ ,  $p < .01$ ) on product quality, scent evaluation ( $F(1, 143) = 15.164$ ,  $p < .01$ ) and sensory experience ( $F(1, 143) = 16.095$ ,  $p < .01$ ). In addition, results revealed significant effects of the covariate *extent of imagining scent* of the product on scent evaluation ( $F(1, 143) = 3.853$ ,  $p < .05$ ), and sensory experience ( $F(1, 143) = 7.510$ ,  $p < .01$ ), but not on product quality ( $F(1, 143) = 2.081$ ,  $ns$ ).

Hypotheses 3 and 4 stated that need for smell moderates the relationship between branding strategy and product evaluations. Consistent with the hypotheses, after controlling for the variables stated, the moderating effect of need for smell on the relationship between branding strategy and product quality ( $F(1, 143) = 6.312$ ,  $p < .05$ ) and sensory experience ( $F(1, 143) = 5.906$ ,  $p < .05$ ) was significant. However, the interaction effect was not significant on scent evaluation ( $F(1, 143) = .153$ ,  $ns$ ). Further, planned contrast analyses were conducted to test H3b and H4b.

The first part of hypotheses 3b and 4b stated that high need for smell individuals will evaluate the quality (3b) and sensory experience (4b) of the regular sensory products more favorably than sensory co-branded products in denoted condition. Consistent with the hypotheses, planned contrasts showed that in the high need for smell condition, the regular sensory product significantly increased product quality ( $F(1,145) = 14.420$ ,  $p = .000$ ;  $M_{\text{regular}} = 5.457$  vs.  $M_{\text{co-brand}} = 4.211$ ) and sensory experience ( $F(1,145) = 11.541$ ,  $p < .01$ ;  $M_{\text{regular}} = 5.271$  vs.  $M_{\text{co-brand}} = 4.067$ ) evaluations compared to co-branded sensory product (please see figure 4).

Table 4. Study 2 ANCOVA Results

	Product Quality	Scent Evaluation	Sensory Experience
<i>Variable</i>	<i>F</i>	<i>F</i>	<i>F</i>
Branding strategy	5.884*	3.507 (ns)	.196 (ns)
Need for Smell	.014 (ns)	.166 (ns)	2.784 (ns)
Branding * Need for Smell	6.312*	.153 (ns)	5.906*
Extent of Imagining Usage	7.066**	15.164**	16.095**
Extent of Imagining Scent	2.081 (ns)	7.510**	3.853*
Model	6.528**	12.515**	7.155**

\* $p < .05$  \*\* $p < .01$

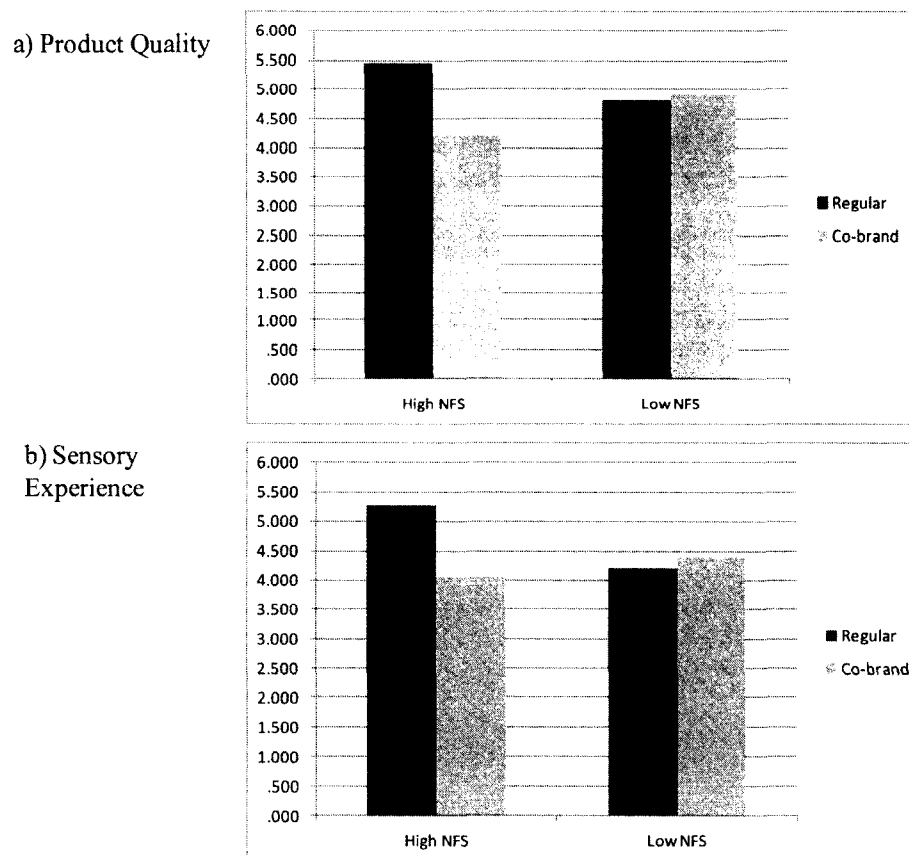
Branding strategy: Regular vs. co-branding

Need for smell: High vs. low

The second part of hypotheses 3b and 4b stated that, for low need for smell individuals, quality evaluation (3b) and sensory experience (4b) do not change between different branding strategies. Consistent with the hypothesis in the low need for smell condition, there was no significant difference between the sensory co-branded product

and regular sensory product on evaluation of product quality ( $F(1,145) = .096, ns$ ;  $M_{\text{regular}} = 4.812$  vs.  $M_{\text{co-brand}} = 4.910$ ) and sensory experience ( $F(1,145) = .438, ns$ ;  $M_{\text{regular}} = 4.188$  vs.  $M_{\text{co-brand}} = 4.414$ ), supporting hypotheses 3b and 4b. Hypothesis 3d was not supported as scent evaluation was not significant.

Figure 4. The interaction effects of branding strategy and need for smell on product quality and sensory experience.



### iii. Discussion

Study 2, parallel with hypotheses 3 and 4, provides evidence that consumer evaluations of products and sensory experiences can result in different responses when

consumers review the advertisement of the product, depending upon whether respondents have a high or low need for smell. Parallel with expectations, consumers who had a high need for smell evaluated the regular sensory product better on product evaluation and sensory experience than the sensory co-branded product. In addition, there was no difference in the evaluation of the sensory co-branded product and regular sensory product when consumers had low need for smell. Even though product quality and sensory experience were evaluated differently depending upon the need for smell, scent evaluation was not influenced by the interaction of branding strategy of the product and consumers' need for smell.

In summary, these results showed that when consumers had high need for smell, they evaluated the quality and sensory experience of Dial with Spring Water scent (regular sensory) more positively than Dial with Suave Spring Water scent (sensory co-branded). These results are parallel with the extant literature. As high need for smell individuals tend to imagine the scent when they do not have a chance to physically smell the product, the extent of their cognitive processing and mental imagery tends to be higher. However, when the branding strategy is sensory co-branding, more imagery leads to higher ambiguity. In that case, it could have been hard for the consumers to figure out how the co-brand contributed to the scent; as a result, they evaluated regular branding strategy more positively than co-branding strategy. On the other hand, low need for smell individuals do not desire to smell the products; therefore, their imagery that comes from previous experience is lower. The respondents might not have processed the extrinsic cues that come from the brands in both branding strategies, as they were not concerned

with the scent of the products. Consequently, their evaluations did not change between branding strategies.

## **CHAPTER V**

### **STUDY 3: The Effect of Sensory Attribute Functionality**

Study 3 investigates the influence of a product's sensory attribute (hedonic vs. utilitarian) on consumers' evaluations and experiences. As the physical condition in the first study did not give significant results, parallel with Study 2, hypotheses related to the physical product presentation were dropped from Study 3. The moderating effect of sensory attribute functionality was evaluated only in the denoted condition. As stated in hypotheses 5 and 6, it is expected that, when the sensory attribute of a product is hedonic (e.g. scent of a shampoo), regular sensory products will be evaluated more favorably than sensory co-branded products on product evaluations and sensory experiences. In addition, consumer evaluations will not differ between different branding strategies when the sensory attribute of the product is utilitarian (e.g. scent of an odor remover).

Before measuring these effects, a pretest was carried out. The purpose of the pretest was to identify two different products that contain either utilitarian or hedonic sensory attributes, to be used in the main study.

#### **i. Pretest**

We conducted a pretest to select different product categories for the stimuli to be used in the third study. We aimed to find scented products with scent attributes that were perceived as utilitarian or hedonic. 46 (27 female, 19 male; Mage=37) Amazon MTurk respondents (highest quality of respondent criteria is selected) participated in the survey. Respondents were asked to rate eight different scented (sensory) product categories such as scented trash bags, scented toilet paper, laundry detergent, hand soap, fabric softener, body lotion, body wash, and dish soap based on the extent to which they perceived the

scent attribute of the product to be utilitarian vs. hedonic. Respondents answered the question “For me, the scent attribute of this product is” (1-utilitarian, 7- hedonic) on a 7-point scale. The scale is adapted from Leclerc et al. (1994) and Okada (2005).

Perceived hedonic or utilitarian function of the scent for every product mentioned above was also measured with a 7-point differential semantic scale containing the statement “the scent feature of this product is hedonic” (fun/not fun, exciting/dull, delightful/not delightful, thrilling/not thrilling, and enjoyable/not enjoyable; utilitarian: effective/ineffective, helpful/unhelpful, functional/not functional, necessary/unnecessary, and practical/impractical), adapted from Voss, Spangenberg, and Grohmann (2003).

The results showed that the scent of a body wash was perceived as hedonic ( $M_{\text{bodywash}}=5.3$ ), followed by body lotion ( $M_{\text{bodylotion}}= 5.2$ ). On the other hand, the scent of laundry detergent perceived as utilitarian ( $M_{\text{laundry}}= 5.3$ ). Some products such as scented trash bags or toilet paper scored low in both utilitarian and hedonic measures. For these products scent was not an important attribute and therefore was not rated high on hedonic or utilitarian measures (Importance of the scent:  $M_{\text{toiletpaper}}= 2.1$  and  $M_{\text{trashbag}}= 2.4$  vs.  $M_{\text{bodywash}}= 5.8$  and  $M_{\text{bodylotion}}= 5.5$ ). Taking into account the results of the first and second pretest in the first study, and also the current pretest, body wash was selected as the product to be used in Study 3 for hedonic scent functionality. For the utilitarian scent functionality, laundry detergent was selected due to high utilitarian ( $M_{\text{laundry}}= 5.3$ ) and importance of the scent scores ( $M_{\text{laundry}}= 5.0$ ) in comparison to other products for which the scent was perceived as utilitarian. Both products were very common and could be easily found on the market. The same brands of Dial and Suave were used, and Tide with

Downy was selected as the second product manipulation. In order to avoid differences in scent, “Spring Water” scent (pretested in Study 1) was used for both products.

## **ii. Main Study Design**

145 Amazon MTurk respondents (highest quality of respondent criteria was selected) participated in the survey. The hypotheses were tested in the denoted condition using a 2 (sensory branding: co-brand vs. regular) x 2 (sensory attribute functionality: utilitarian vs. hedonic) between-subjects design. Branding strategy and sensory attribute functionality were manipulated with different scenarios. Participants were randomly assigned to one of the four scenarios.

## **Procedure**

Based upon the pretest results, two types of products were used in the scenarios. Dial body wash with Suave Spring Water scent (in regular branding condition Suave was removed) was used for the manipulation of hedonic sensory attribute functionality. Tide laundry detergent with Downy Spring Water scent (in regular branding condition Downy was removed) was used for the manipulation of utilitarian sensory attribute functionality.

In the sensory co-branding and hedonic function condition, participants read the following information “*The body care brand Dial has recently created a new body wash series with a new scent: Suave Spring Water. The advertisement is attached below. Please take a look at the ad and you will be asked some questions regarding the product.*” In the regular sensory branding condition Suave was removed from the scenario and the ad. In the advertisement given, respondents were clearly able to see the original product and its packaging. The same advertisements that were used in Study 1 and 2 were used in Study 3 (please see figure 2).



In the sensory co-branding and utilitarian attribute condition, participants read the following information “*The laundry detergent brand Tide has recently created a new detergent series with a new scent: Downy Spring Water. The advertisement is attached below. Please take a look at the ad and you will be asked some questions regarding the product.*” In the regular sensory branding condition Downy was removed from the scenario and advertisement. In the advertisement given, participants were clearly able to see the original product and its packaging. A professional graphic designer created the images and ads (please see figure 5). A short sentence “For a brilliant clean every time” appeared at the bottom of the advertisement. This statement was taken from a real Tide laundry detergent advertisement. In order to prevent priming of cognitive effort, a minimal number of words was used. As Tide is a very well-known detergent brand, the original product bottle and original logos of the Tide and Downy brands were used.

### **Dependent Variable Measures**

Parallel with Study 1, product quality. (Cronbach’s  $\alpha = .96$ ), scent evaluation, and (Cronbach’s  $\alpha = .96$ ) and sensory experience (Cronbach’s  $\alpha = .84$ ) were measured as dependent variables (for items please see Study1).

### **Covariates**

Parallel with Studies 1 and 2, extent of evaluation, extent of imagining usage, time spent, familiarity with the brands, frequency of usage, scent intensity, gender, and age were measured as covariates (for items please see study1). Parallel with Study 2, extent of imagining the scent was also measured as a covariate.

Figure 5. Advertisements used in Study 3 (Utilitarian)

a) Sensory Co-branded Product



b) Regular Sensory Product



### iii. Results of Study 3

#### Manipulation check

Participants were asked to indicate the degree to which they agree or disagree with the following questions: “The product shown contains only one brand” and “The product shown contains two brands” for the presentation condition (1=strongly disagree, 7=strongly agree). Participants who received the sensory co-branded product significantly scored lower ( $N=81$ ,  $Mean= 2.22$ ) than participants who received the sensory regular product ( $N=64$ ,  $Mean= 6.08$ ) on the question of “The product shown contains only one brand” ( $F(1, 143) = 224.49$ ,  $p=.000$ ). Participants who received the sensory co-branded product significantly scored higher ( $N=81$ ,  $Mean= 5.90$ ) than participants who received the sensory regular product ( $N=64$ ,  $Mean= 1.84$ ) on the question of “The product shown contains two brands” ( $F(1, 143) = 273.58$ ,  $p=.000$ ).

Participants were also asked to indicate the degree to which they agree or disagree with the following questions: “This product shown is a body wash” and “This product shown is a laundry detergent” (1=strongly disagree, 7=strongly agree). Participants who received the utilitarian attribute scored significantly lower ( $N=70$ ,  $Mean= 1.40$ ) on the first question than participants who received the hedonic attribute ( $N=70$ ,  $Mean= 6.47$ ) ( $F(1, 147) = 785.9$ ,  $p=.000$ ). Participants who the received hedonic attribute scored significantly lower ( $N=70$ ,  $Mean= 1.61$ ) on the second question than participants who received the utilitarian attribute ( $N=75$ ,  $Mean= 6.52$ ) ( $F(1, 147) = 687.26$ ,  $p=.000$ ). As a result, effectiveness of both sensory attribute functionality and branding strategy manipulations were supported.

## Results

The sample consisted of 145 participants; 65 (45%) male and 80 (55%) female. The age of the participants ranged from 19 to 75 with the average age of 38.8. Both sensory attribute functionality and sensory branding strategy were manipulated.

Hypotheses 5 and 6 were tested using two-way multiple analysis of covariance (MANCOVA), followed by univariate analysis of covariance (ANCOVAs). Covariates including extent of evaluation, extent of imagining usage, extent of imagining the scent, submission time, gender, age, and familiarity with the brand were entered as covariates. The first run of MANCOVA revealed that, other than extent of imagining usage and extent of imagining the scent, all covariates were insignificant and dropped from analysis.

Hypotheses 5 and 6 stated that sensory attribute functionality moderates the relationship between branding strategy and product evaluations. Consistent with the hypotheses, the MANCOVA results indicated significant multivariate effect for the interaction between branding strategy and sensory attribute functionality on dependent variables (Wilks'  $\lambda = .838$ ,  $F(3, 138) = 8.904$ ,  $p < .01$ ). In addition, the results indicated significant multivariate main effects for branding strategy (Wilks'  $\lambda = .865$ ,  $F(3, 138) = 7.207$ ,  $p < .01$ ) and sensory attribute functionality (Wilks'  $\lambda = .813$ ,  $F(3, 138) = 10.602$ ,  $p < .01$ ). The covariate extent of imagining usage was also significant (Wilks'  $\lambda = .111$ ,  $F(3, 138) = 5.755$ ,  $p < .01$ ).

These significant results were decomposed with univariate ANCOVAs (please see table 5) on each dependent variable indicated significant effects of the covariates; extent of imagining usage ( $F(1, 140) = 9.963$ ,  $p < .01$ ) on product quality, sensory experience ( $F(1, 140) = 10.791$ ,  $p < .01$ ) but not on scent evaluation ( $F(1, 140) = 2.308$ , *ns*). After

controlling for the covariate, interaction of branding strategy and sensory attribute functionality was significant on product quality ( $F(1,140) = 5.139, p < .01$ ), scent evaluation ( $F(1,140) = 4.389, p < .01$ ), and sensory experience ( $F(1,140) = 4.152, p < .01$ ). Further, planned contrast analyses were conducted to test H5b, H5d, and H6b.

Table 5. Study 3 ANCOVA Results

	Product Quality	Scent Evaluation	Sensory Experience
<i>Variable</i>	<i>F</i>	<i>F</i>	<i>F</i>
Branding strategy	4.802*	2.735 (ns)	3.594 (ns)
Sensory Attribute Functionality	17.462**	.538 (ns)	10.538**
Branding * Attribute Functionality	5.139*	4.389*	4.152*
Extent of Imagining Usage	9.963**	2.308 (ns)	10.791**
Model	11.248**	2.507*	7.991**
* $p < .05$ ** $p < .01$			

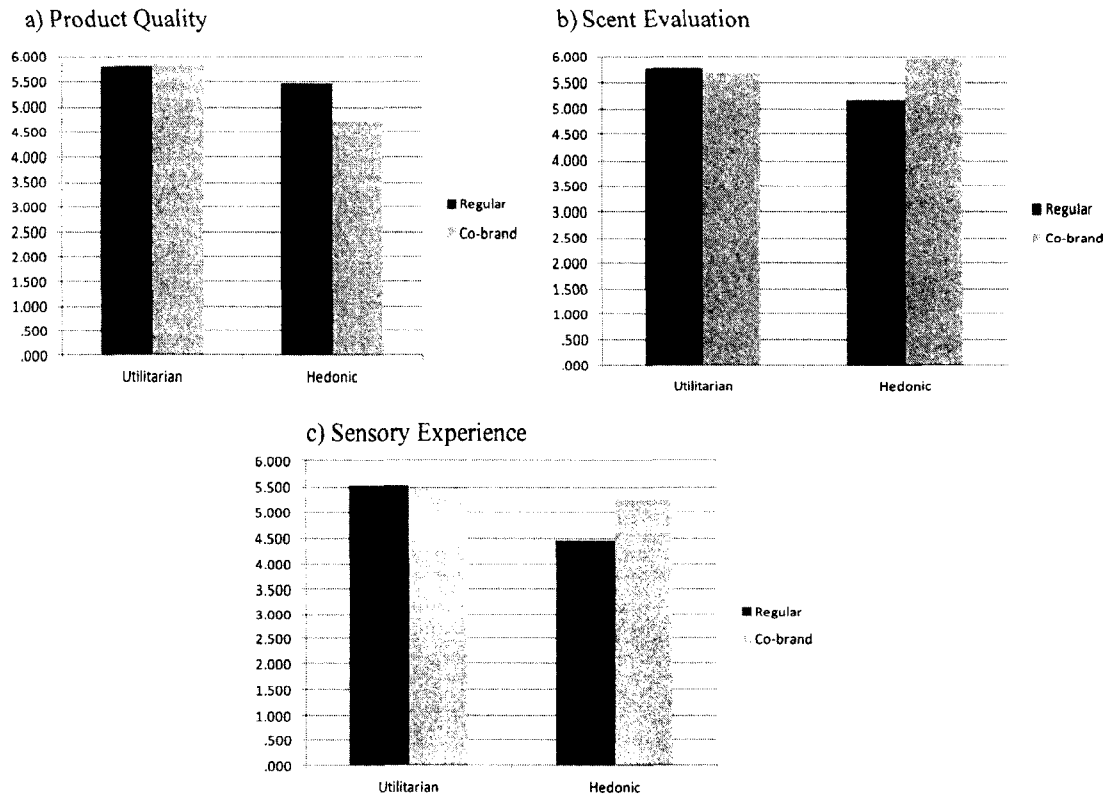
The first part of hypotheses 5b, 5d, and 6b stated that, if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive quality (5b), scent (5d), and sensory experience (6b) evaluation than sensory co-branded products. Consistent with hypothesis 5b, planned contrasts showed that, when the sensory attribute functionality was hedonic, the regular sensory product significantly increased product quality ( $F(1,141) = 10.106, p < .01$ ;  $M_{\text{regular}} = 5.444$  vs.  $M_{\text{co-brand}} = 4.649$ ). However, the co-branded sensory product significantly increased scent evaluation ( $F(1,141) = 6.608, p < .01$ ;  $M_{\text{regular}} = 5.141$  vs.  $M_{\text{co-brand}} = 5.941$ ) and sensory experience ( $F(1,141) = 6.519, p < .01$ ;  $M_{\text{regular}} = 4.414$  vs.  $M_{\text{co-brand}} = 5.171$ ) in the opposite direction of what was expected for H5d and H6b.

The second part of hypotheses 5b, 5d, and 6b stated that if the sensory attribute of the product is utilitarian, quality (5b), scent (5d) and sensory (6b) evaluations will not change between branding strategies. Consistent with the hypotheses, there was no significant difference between sensory co-branded product and regular sensory product on the evaluation of product quality ( $F(1,141) = .278, ns; M_{\text{regular}} = 5.925$  vs.  $M_{\text{co-brand}} = 5.795$ ), scent evaluation ( $F(1,141) = .345, ns; M_{\text{regular}} = 5.849$  vs.  $M_{\text{co-brand}} = 5.670$ ), and sensory experience ( $F(1,141) = .460, ns; M_{\text{regular}} = 5.667$  vs.  $M_{\text{co-brand}} = 5.470$ ) (please see figure 6). Therefore, hypothesis 5b related to the moderating effect of sensory attribute criticality is supported. Hypothesis 5d and 6b related to the moderating effect of sensory attribute criticality is supported when the sensory attribute is utilitarian.

#### **iv. Discussion**

Study 3 provides evidence that consumer evaluations of products and sensory experiences can result in different responses depending upon the sensory attribute of the product (hedonic vs. utilitarian) when consumers review the advertisement of the product. Parallel with expectations, when the sensory attribute of a product was hedonic, respondents evaluated a regular sensory product better on product evaluation. Contrary to expectations, consumers evaluated sensory co-branded products more highly on sensory experience and scent evaluations. In addition, there was no significant difference in the evaluation of the sensory co-branded products and regular sensory products when the sensory attribute of the product is utilitarian.

Figure 6. The interaction effects of branding strategy and sensory attribute functionality on product quality, scent evaluation and sensory experience.



For the evaluation of scent and sensory experience, consumers evaluated Dial with Suave Spring Water scent (sensory co-branded) more positively than Dial with Spring Water scent (regular sensory). The reason behind these results can be that sensory experience and scent evaluation are related to the hedonic function of the product, naturally, regardless of the product category. Scent and sensory evaluation about the products require perceptions for fun, excitement, and enjoyment, even though the sensory attribute is utilitarian. In the current study, when consumers evaluated sensory experience and scent of a product when the sensory attribute was hedonic, they might automatically

have processed co-brand as a strong extrinsic cue. Hence, co-brand as sensory contribution to the product might have led to more positive scent and sensory evaluation of sensory co-branded products. On the other hand, product quality measures tend to be more utilitarian as they are mainly focused on the function of the product. Therefore, even though the sensory attribute was hedonic, the less ambiguous regular branding strategy might have been evaluated more favorably than the sensory co-branding strategy.

In addition, results showed that consumers' evaluation regarding the quality, scent and sensory experience did not differ when the sensory attribute functionality of the product was utilitarian. Therefore, evaluations regarding Tide with Spring Water Scent (regular sensory) and Tide with Downy Spring Water Scent (sensory co-branded) did not vary when the sensory attribute functionality of the body wash was hedonic. When the attribute is utilitarian, the contribution of the sensory attribute to the product is clearer and less ambiguous than when the attribute is hedonic. In this case, intrinsic cues and extrinsic cues from the brands might not have been necessary to evaluate the product. Therefore, sensory attribute functionality did not make a difference between branding strategies.



## CHAPTER VI

### CONCLUSIONS AND DISCUSSION

This dissertation developed a conceptual framework in order to address the research gap on sensory branding strategies, focusing on olfaction, by investigating how sensory co-branding influences consumers' product evaluations and sensory experiences. Consumers develop perceptions on products and services depending on how they process sensory factors (Peck and Childers 2008). Therefore, this dissertation provides valuable insights for sensory marketing and sensory branding literature because three studies that were conducted investigated whether sensory co-branding was perceived positively, and if sensory co-branding efforts were worthwhile.

*Study 1.* In study 1, it was explored how branding strategies and different presentation methods of the products (physical or denoted) interact to influence consumer evaluations and experiences. Findings of the study indicated that consumer evaluations of products and sensory experiences could result in different responses depending upon product presentation (physically smelling the product vs. seeing an ad) and branding strategy (sensory co-branded product vs. regular sensory product). According to the findings of the study, consumers evaluated sensory co-branded products more positively when they reviewed the advertisement of the product. Yet, there was no difference in the evaluation of the sensory co-branded and regular sensory products when consumers had a chance to physically evaluate and smell the product.

These results are parallel with the concept of ambiguity and cue utilization theory (Sprott and Shimp 2004). Consumers arrive at product evaluations by using extrinsic and intrinsic cues and these cues can work interchangeably. When consumers had a chance to

evaluate the product physically, intrinsic cue (scent) dominated extrinsic cue (brand) and influenced product evaluations. According to the thoughts of the respondents, in the physical condition, respondents were very critical (both positive and negative) towards the scent regardless of the branding strategy. Therefore, extrinsic cues (brand) did not make a difference in the evaluation of the product. Consumers smelled the product and judged it based on the scent. Therefore, consumers did not evaluate regular sensory and co-branded sensory products differently.

Based on the results, consumers imagined themselves using the product in both conditions (denoted and physical); however, imagery was higher in the denoted condition than the physical condition. When consumers reviewed the product from an ad, higher cognitive effort that comes from imagining the usage might have decreased the ambiguity of the co-branding strategy. Better elaboration possibly led to better processing of extrinsic cue (brand) in the absence of intrinsic cue (scent) and the strategy of sensory co-branding led to more positive product and sensory evaluations. In summary, when consumers were given the advertisement, they evaluated Dial with Suave Spring Water scent (sensory co-branded) more positively than Dial with Spring Water scent (regular sensory). On the other hand, when consumers were given the product to physically analyze, their evaluations of Dial with Suave Spring Water scent (sensory co-branded) and Dial with Spring Water scent (regular sensory) did not vary.

These results do not necessarily indicate that using sensory co-branding strategies will not be beneficial for firms. If the sensory co-branding strategy is introduced before launching the product on the market and consumers are allowed to sample the smell, a

less ambiguous advertising strategy that focuses on the contribution of the co-brand (extrinsic cue) can lead to positive evaluations.

*Study 2.* In Study 2, the moderating effect of need for smell on the relationship between branding strategy and consumer evaluations was supported (only denoted condition was utilized). Results showed that consumer evaluations of products and sensory experiences could result in different responses, depending upon interaction of need for smell and the branding strategy of the product. Findings of the study indicated that consumers who had a high need for smell evaluated the regular sensory product better than the sensory co-branded product. Consumer evaluations did not change among branding strategies when consumers had a low need for smell. Therefore, regular sensory product strategies can be more influential for the people who are in high need for smell.

These results are consistent with the ambiguity literature and differences in cognitive processing based on extrinsic and intrinsic cues. Because extrinsic cues that come from the co-brand can be perceived as ambiguous, cognitive effort of people in the high need for smell condition can work negatively in the sensory co-branding condition. High need for smell individuals also look for intrinsic cues and prefer to satisfy their smelling needs. Therefore, less ambiguity in the regular branding strategy can be evaluated more positively. On the other hand, for low need for smell individuals, branding strategy might not make a difference, as they are not interested in scents in general. In addition, extrinsic cues might not be perceived as a contribution to the product.

In summary, when consumers were in high need for smell, Dial body wash with Spring Water scent was evaluated more positively than Dial body wash with Suave

Spring Water scent when consumers received the advertisement of the product. However, that does not necessarily mean that sensory co-branding products do not work on consumers. Manipulation of ambiguity in advertisements can give varying results. With sensory co-branding, more imagery leads to higher ambiguity. Moreover, giving scratch and sniff options on the ads like many brands do can satisfy the need for smell for high need for smell individuals. With this strategy, sensory co-branding strategies might be useful.

*Study 3.* In Study 3, the moderating effect of sensory attribute functionality on the relationship between branding strategy and consumer evaluations was supported (only denoted condition was utilized). Results showed that when the sensory attribute of a product was hedonic, respondents evaluated regular sensory product better on product quality. However, consumers evaluated the sensory co-branded products better on sensory experience and scent evaluations. Even though the differences among consumer evaluations in hedonic attribute were not expected, extant literature supports that the perception of hedonic attributes are perceived as ambiguous by consumers (Okada 2005). As hedonic attributes tend to be subjective, they can lead to different evaluations. Product quality perceptions are more utilitarian aspects, as they are evaluations based on the function of the product. However, since scent and sensory evaluations were more hedonic that might have created the differences among evaluations in the hedonic attribute condition. When the sensory attribute of the product was utilitarian, the evaluation of the sensory co-branded products and regular sensory products did not differ. Because utilitarian function might have decreased ambiguity, the important factor becomes whether the sensory attribute of the products contributed to the functionality. Therefore,

the extrinsic cue that came from the brand did not create evaluation differences between branding strategies in the utilitarian attribute condition.

In summary, when sensory attribute functionality was hedonic (body wash was used), the quality of Dial body wash with Spring Water scent was evaluated more positively than Dial body wash with Suave Spring Water scent. On the other hand, sensory experience and scent of Dial body wash with Suave Spring Water scent was evaluated more positively than Dial body wash with Spring Water scent. When sensory attribute functionality was utilitarian (laundry detergent was used), there was no evaluation difference between Tide with Spring Water Scent and Tide with Downy Spring Water Scent.

Three different studies conclude that sensory co-branding strategies are effective when consumers evaluate the sensory products from advertisements or any other condition that does not provide a real smelling opportunity (please see table 6). In addition, sensory co-branding strategies are effective in the evaluation of scent and sensory experience when the sensory attribute of the product is hedonic. On the other hand, regular sensory branding strategies are effective when consumers are in high need for smell and when the sensory attribute of the product is hedonic (for only product quality evaluation).

### **Reconciling the Results of the Three Studies**

According to the results of three studies, consumers arrived at different conclusions when they were presented sensory co-branded products or regular sensory products. For example, when consumers received the advertisement of the product, they evaluated co-branded sensory product more positively than regular sensory product

unlike expectations. When consumers had a chance to smell the product, however, their evaluations did not change between branding strategies. In the denoted condition, when the moderating effect of sensory attribute functionality was present, consumers evaluated the quality of regular sensory product better than regular sensory product in the hedonic condition. This pattern did not carry through, however, for scent evaluation and sensory experience. Therefore, sensory co-branded product was evaluated more positively. When the sensory attribute functionality is utilitarian, consumers' evaluations did not change between branding strategies. Hence, evaluations of the sensory co-branded and regular sensory products were different among studies. There can be multiple reasons behind these results. Firstly, brands that were used (Dial and Suave) could have led respondents to consider their existing judgments regarding these known brands. Perceptions regarding the price or the quality of the two brands, for instance, could have primed respondents' thoughts and evaluations. In order to measure the effects of co-branding, using real brands was necessary. However, both of the brands used were not in the luxury segment and they were one of the most affordable ones in the market. Price or brand name of a product influences perceptions of consumers, such as foreign ice cream brands are expected to be better quality than national ones (Leclerc et al. 1994). Therefore, the image or the segment of the brands might have influenced consumers in all studies.

In addition, Suave and Dial are two competitive brands in the market and they also carry similar products. Usage of two very similar and competitive brands might have influenced consumers' perceptions on congruency of the brands. According to the extant literature, better congruency and fit between two co-brands lead to better evaluations (Bone and Jantrania 1992). However, perceptions of the consumers about the congruency

were not measured in this dissertation. In addition to the brand names, among these three studies only one scent category “Spring Water” was used. When the intrinsic cue (scent of the product) was missing in denoted conditions, respondents might have developed different perceptions regarding the scent. In summary, the main influence behind the results of these studies might have been the brands and the scent used.

Even though second study aimed to capture the personal tendency of liking product scents, involvement with the product category presented might also have influenced the results. Consumers’ involvement with the product scents can change based on the product category that they purchase such as cologne vs. cleaning supplies. In Studies 1 and 2, only one product and in Study 3 two product categories were used. If the involvement levels among different sensory products are different, the results might be influenced. In addition, in Study 2, need for smell was manipulated with the task of buying a body wash for another person in high need for smell vs. low need for smell. This task might have magnified the importance of the scent for the product as consumers were leaded to consider the scent by the scenario. The differences among evaluation of product quality, scent evaluation and sensory experience might have occurred due to the need for smell manipulation.

In conclusion, this dissertation introduces the concept of sensory co-branding and empirically tests the effectiveness of sensory co-branding and regular sensory branding strategies under different conditions (Table 6 summarizes all hypotheses and findings). As extant literature strongly recommends, understanding how sensory marketing strategies influence consumers is very critical (Krishna 2012).

Table 6: Summary of the findings

		<i>Product Quality</i>	<i>Scent Evaluation</i>	<i>Sensory Experience</i>
<b>Study 1</b>				
	Physical	co-brand = regular	co-brand = regular	co-brand = regular
	Denoted	co-brand > regular	co-brand > regular	co-brand > regular
<b>Study 2 (denoted)</b>				
	High NFS	regular > co-brand	ns	regular > co-brand
	Low NFS	co-brand = regular	ns	co-brand = regular
<b>Study 3 (denoted)</b>				
	Hedonic	regular > co-brand	co-brand > regular	co-brand > regular
	Utilitarian	co-brand = regular	co-brand = regular	co-brand = regular

Specifically scents can influence consumer evaluations and judgments (Bone and Ellen 1999; Krishna 2012; Morrin 2010). Therefore, this dissertation aimed to contribute to the co-branding literature with the addition of sensory co-branding strategy and fulfill the need for research that focuses on sensory aspects of co-branding strategies. In addition, findings contribute to the advertising literature by showing usage of cues in advertisements for sensory products. This dissertation also contributes to marketing literature by examining the role of extrinsic and intrinsic cues in sensory product evaluations. Findings of this dissertation also provide practitioners better understanding of how consumers process sensory information and evaluate different branding strategies in the sensory context.



Table 7: Hypotheses Testing Results

H	Hypothesis	Result
H <sub>1a</sub>	When the presentation is physical, quality of the sensory co-branded products will be evaluated more favorably than regular sensory products	Not supported
H <sub>1b</sub>	When the presentation is denoted, quality of the regular sensory products will be evaluated more favorably than sensory co-branded products.	Not Supported
H <sub>1c</sub>	When the presentation is physical, scent of the sensory co-branded products will be evaluated more favorably than regular sensory products.	Not supported
H <sub>1d</sub>	When the presentation is denoted, scent of the regular sensory products will be evaluated more favorably than sensory co-branded products.	Not supported
H <sub>2a</sub>	When the presentation is physical, sensory experience of sensory co-branded products will be evaluated more favorably than regular sensory products.	Not supported
H <sub>2b</sub>	When the presentation is denoted, sensory experience of regular sensory products will be evaluated more favorably than sensory co-branded products.	Not supported
H <sub>3a</sub>	When the presentation is physical, low need for smell individuals will evaluate the quality of the sensory co-branded products more favorably than regular sensory products. Quality evaluation of high need for smell individuals will not change between different branding strategies.	Not tested
H <sub>3b</sub>	When the presentation is denoted, high need for smell individuals will evaluate the quality of the regular sensory products more favorably than sensory co-branded products. Quality evaluation of low need for smell individuals will not change between different branding strategies.	Supported
H <sub>3c</sub>	When the presentation is physical, low need for smell individuals will evaluate the scent of the sensory co-branded products more favorably than regular sensory products. Scent evaluation of high need for smell individuals will not change between different branding strategies.	Not tested
H <sub>3d</sub>	When the presentation is denoted, high need for smell individuals will evaluate the scent of the regular sensory co-branded products more favorably than sensory co-branded products. Scent evaluation of low need for smell individuals will not change between different branding strategies.	Not supported
H <sub>4a</sub>	When the presentation is physical, low need for smell individuals will evaluate sensory experience of sensory co-branded products more favorably than regular sensory products. Sensory product experience of high need for smell individuals will not change between different branding strategies.	Not tested
H <sub>4b</sub>	When the presentation is denoted, high need for smell individuals will evaluate the sensory experience of regular sensory products more favorably than sensory co-branded products. Sensory experience of low need for smell individuals will not change between different branding strategies.	Supported
H <sub>5a</sub>	When the presentation is physical, if the sensory attribute of the product is utilitarian, sensory co-branded products will lead to more positive quality evaluation than regular sensory products. If the sensory attribute of the product is hedonic, quality evaluations will not change between branding strategies.	Not tested
H <sub>5b</sub>	When the presentation is denoted and if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive quality evaluation than sensory co-branded products. If the sensory attribute of the product is utilitarian, quality evaluations will not change between branding strategies.	Supported
H <sub>5c</sub>	When the presentation is physical, if the sensory attribute of the product is utilitarian, sensory co-branded products will lead to more positive scent evaluation than regular sensory products. If the sensory attribute of the product is hedonic, scent evaluations will not change between branding strategies.	Not tested

H <sub>5d</sub>	When the presentation is denoted and if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive scent evaluation than sensory co-branded products. If the sensory attribute of the product is utilitarian, scent evaluations will not change between branding strategies.	Hedonic attribute: not supported Utilitarian attribute: Supported
H <sub>6a</sub>	When the presentation is physical, if the sensory attribute of the product is utilitarian, sensory co-branded products will lead to more positive sensory experience than regular sensory products. If the sensory attribute of the product is hedonic, sensory experience will not change between branding strategies.	Not tested
H <sub>6b</sub>	When the presentation is denoted and if the sensory attribute of the product is hedonic, regular sensory products will lead to more positive sensory experience than sensory co-branded products. If the sensory attribute of the product is utilitarian, sensory experience will not change between branding strategies.	Hedonic attribute: not supported Utilitarian attribute: Supported

## LIMITATIONS AND FUTURE RESEARCH

Besides its contributions, this dissertation also holds some limitations. First, this research is the first attempt at understanding sensory co-branding strategies. Therefore, there is no other study in the marketing literature with which the findings can be compared or merged. More studies are needed in this area to understand the role of cue utilization theory and ambiguity in sensory marketing.

Second, the methodology has some limitations, similar to many other consumer research studies. Study 1 uses an undergraduate and graduate student sample. Replicating the studies with data from real consumers can be beneficial and might lead to different results. A lab environment might not create the same pressure that consumers feel when they shop for their homes and family. Therefore, analyzing the product physically in a lab can be different than a real store environment. Moreover, other external sensory cues that consumers face when they shop at stores, such as temperature, lighting, other scents, and noise, can influence cognitive processes and as a result, decision making. Unfortunately, it is not possible to replicate the results in a real shopping environment. In addition, even

though Studies 2 and 3 are collected from the general public, online research tools give limited control over studies (such as attention level of the respondent). This study aimed to minimize that effect by asking open-ended questions. As Studies 2 and 3 were not tested in physical condition, future studies might address this limitation and measure whether consumer evaluations change in physical condition.

Third, in Study 1, only body wash was used as the sensory product. Using multiple product categories can help to understand how consumer evaluations change. Results of the three studies could depend on consumers' involvement, familiarity, and interest. In this dissertation, only familiarity and usage frequency were measured as covariates. Using multiple product categories that have different involvement levels can be beneficial. Moreover, need for smell was manipulated with a goal contagion scenario in Study 2. Future research can measure need for smell instead of manipulating it to ensure that the goal that is given to the respondent does not magnify the importance of the scent of the product. Therefore, future studies can enhance the current research by taking these limitations into consideration.

Fourth, the brand names that were used in all studies could have influenced consumers' evaluations and perceptions. In future, the findings of the three studies can be replicated using different brand names by considering congruency, fit, and brand competition. In addition, this dissertation only used one scent category. Usage of multiple scent categories (i.e. fresh and clean vs. sophisticated) could potentially lead to different evaluations. Even though the current research measured thoughts of the consumers, they did not lead to meaningful justifications regarding the results. Measurement of thoughts on certain categories (such as scent, product or quality) in

addition to the valence can help researchers to understand how consumers evaluate sensory co-branded products. In addition, a qualitative design that investigates what consumers think about sensory co-branded products can help understand the results of the studies in the current research.

Lastly, body wash was used as a product in Study 1. According to the pretest results of Study 3, body wash appeared to be a hedonic product. Therefore, a hedonic product was unintentionally used in the first study. The main reason for that was the importance of the scent measure. Based on pretests that were conducted in studies 1 and 3, most of the products for which consumers rated scent as an important attribute were also perceived as more hedonic. Not all, but most of the scented products are mainly used for hedonic purposes such as relaxation or enjoyment. It is hard to find a product that consumers think that the scent attribute is important which is also not rated very high in hedonic attributes. This is the natural structure of sensory products. Future studies can consider this effect by using multiple product categories with different levels of importance and hedonic attributes.

The results of this dissertation guide several other future research directions. Usage of sensory co-branding strategies has been increasing in recent years. There are different applications among brands; for instance, some companies use their own brands for co-branding and others use other companies' brands. If consumers are familiar with the main company that owns the brand, evaluations can be influenced differently. Also, sensory co-branding strategies among internal brands can increase brand exposure and might lead to different cognitive processes. Future research can take real sensory co-branding examples and test the effects accordingly.

In addition to these limitations and future directions stated above, there are many other interdisciplinary research opportunities in the sensory marketing field. Olfactory studies are fairly new in the marketing literature. Collaborations from the neuroscience field and marketing field have been increasing rapidly. It is essential to understand how consumers process the sensory related information and how this process occurs in the brain. Therefore, further research can take a more scientific approach and empirically test how physical and denoted presentation of olfactory-based sensory products influence the olfactory cortex.

### **MANAGERIAL IMPLICATIONS**

The findings of this dissertation have substantial managerial relevance, considering almost every major fast moving consumer goods (FMCG) company has started applications of sensory co-branding (e.g. P&G and Unilever). Results of the studies offer several insights for managers dealing with the question of how consumers evaluate sensory marketing strategies. Managers can use these findings to develop better product and advertising strategies for sensory products.

Findings of this dissertation suggest that managers should consider many factors when developing marketing strategies for sensory products. First of all, parallel with the marketing literature, the findings of this dissertation show that scents of many different product categories are very important for consumers. Scents are used as cues for cleanliness, relaxation, happiness, freshness, etc. Managers should create olfactory cues that not only are congruent with the product, but also congruent with consumers' expectations.

Regular sensory branding and sensory co-branding strategies can both be beneficial, depending on how they are presented to the consumer and how the consumer processes them. When the sensory co-branding applications are introduced, advertising strategies that consider usage of intrinsic and extrinsic cues can result in different evaluations. Before launching a sensory product that uses sensory co-branding strategy, or in the introduction level of a product life cycle, less ambiguous advertising strategy that focuses on the contribution of the co-brand (extrinsic cue) can lead to positive evaluations. In addition, store sampling that focuses on not only the scent, but also the sensory benefit that comes from the co-brand, can be valuable for sensory co-branded products.

Consumers can vary depending on their personal preference of focusing on scents of the products. If an olfactory based sensory co-branding strategy is applied, less ambiguous advertising design should be chosen. Adding a scratch-sniff feature to printed ads can help individuals who have high need for smell to decrease ambiguity that comes from the co-brand. Also, scent of some products might not be available to consumers due to certain packaging. In these conditions, scratch-sniff feature can help consumers to satisfy the need for smell.

The findings of this dissertation also show that adopting sensory co-branding strategies might not be efficient for every sensory product. If the sensory attribute of the product is more utilitarian (scented garbage bags or scented vacuum bags), using sensory co-branding strategy might not be worthwhile. On the other hand, if managers aim to increase the subjective evaluations regarding the product (i.e. liking, sensory experience, and feelings) usage of sensory co-branding strategies can be valuable for companies.

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**VITA**  
**CEREN EKEBAS**

Strome College of Business, Old Dominion University  
Department of Marketing, Norfolk, VA

**Education:**

Ph.D., Business Administration, Old Dominion University, Norfolk, VA. - June 2015.  
MEEM., Rochester Institute of Technology, Rochester, NY. - August 2008.  
BA, Marketing, Yeditepe University, Istanbul, Turkey. - May 2006.

**Manuscripts Under Review:**

Arndt, Aaron and **Ceren Ekebas-Turedi** , “When social witnesses reduce avoidance of embarrassing products: The case of free condoms” *Manuscript under review at Journal of Consumer Psychology*.

**Conference Proceedings and Presentations:**

Dara, Ilgim and **Ceren Ekebas-Turedi** (2015). “Momentary Pain for a Lifetime of Enjoyment: Me, Tattoo-self and I” American Marketing Association (AMA) 2015 Summer Educators’ Conference Proceedings, Chicago, IL.

Turedi, Serdar and **Ceren Ekebas-Turedi** (2014). “Exploring the Influence of Negative Emotions on ERP Usage Efficiency”. Decision Science Institute, Tampa, FL.

**Ekebas, Ceren** and Leona Tam (2013). “I Care When I Feel Like It! The Moderating Role of Emotion Stability in Cause Related Marketing”. Association for Consumer Research (ACR) North American Conference, Working Paper Session, Chicago, IL.

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**Ekebas, Ceren** and Aaron Arndt (2012). “I am so embarrassed!” –The Sales Clerk Influence On Customers When Purchasing Personal Products”. Academy of Marketing Science (AMS) 2012, New Orleans, LA.

**Honors and Awards:**

AMA- Sheth Foundation Doctoral Consortium Fellow, 2014.  
Outstanding Doctoral Student in Marketing, Old Dominion University, 2013.  
President, Doctoral Student Association- Old Dominion University, 2013-14.  
AMS World Congress- Doctoral Consortium Fellow, Melbourne -Australia, 2013.  
Scholarship- Master’s degree, Rochester Institute of Technology, 2007.

**Professional Experience**

Sisecam Group, Istanbul, Turkey - *Assistant Strategic Planning Specialist*, 2007-2009.  
Brand on Campus Advertising Agency , Istanbul, Turkey- *Account Executive, Corporate Communications and Marketing*, 2005-2006.