The Effects of Descriptive Food Names on Impressions, Anticipated Satisfaction, and Willingness to Pay

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

In

Hospitality and Tourism Management

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July 1, 2015

Blacksburg, Virginia

Keywords: Hospitality Management, Descriptive Menu Labels, Impression Management, Anticipated Satisfaction, Willingness to Pay More

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ABSTRACT

Descriptive menu labels are omnipresent elements in restaurant menus. Food service operations often use sensory, nostalgic, and brand descriptions to signal a customer's food-specific perceptions. Extant research has shown links between descriptive menu labels and food taste/enjoyment perceptions. To extend and expand the extant literature, this dissertation proposes that descriptive menu labels can be viewed as an anthropomorphizing factor, leading to different magnitudes of consumption-related attitudes and behavioral intentions in a restaurant.

Drawing from metaphoric transfer theory and social impression models, the present research study suggests that descriptive labels in a restaurant transmit metaphors that influence consumers' impending warmth and competence perceptions of a restaurant. This dissertation also investigates the potential inversed magnitudes of anticipated satisfaction and willingness-to-pay-more driven by warmth/competence. In this empirical study, descriptive menu labels were experimentally manipulated. Consumers' warmth-related and competence-related service impressions, anticipated satisfaction, and willingness-to-pay-more more were measured.

The empirical investigation comprised two pretests and one main study. The hypotheses were tested in two menu contexts (an entrée menu vs. a dessert menu). Overall, the results suggest that customers view a restaurant with sensory- and nostalgia-

triggering descriptions as offering warmer impending services (i.e., with kindness, generosity, and understanding) compared to a restaurant with general descriptions. On the other hand, customers view a restaurant that utilizes brand-related descriptions as providing more competent and skilled impending services than a restaurant that utilizes general descriptions. In addition, the findings suggest that consumers' warmth impressions serve a more important role in their anticipated satisfaction than do their competence impressions; however, regarding willingness-to-pay-more, competence impressions factor more significantly than do warmth impressions. The replications of the results across the two menu contexts showed the robustness of the findings; however, there was a different pattern observed for the effects of sensory labels on consumers' warmth-related impressions in the dessert menu selection context.

This dissertation contributes to emerging streams of menu labeling and service management literature. The findings presented in this dissertation have both theoretical and managerial implications for the food service industry.

DEDICATION

I wish to express my deepest thanks and appreciation to my wife and daughter, who support me in all my endeavors. They are pillars of love that make every day a joy and teach me the value of hard work and the importance of following my dreams.

ACKNOWLEDGEMENTS

I am humbled. I am blessed. Pursuing a PhD degree was, at times, a challenging journey, but instrumental, emotional, and social support from my dissertation committee and family carried me through this program. First, I would like to express my sincerest gratitude to my committee chair for his invaluable support and guidance. Dr. Vincent Magnini has been the best mentor I could have imagined. The seeds of my fragmentary research ideas and teaching philosophy have been showered with your persistent guidance and encouragement. There has never been a time that I have walked out of your office without joy and having learned to be a better researcher, a more effective teacher, and a greater person. I appreciate you taking me on when others would or could not. I appreciate you standing behind me when I needed it. I appreciate you showing up consistently. Thank you for always being present, responsive, and supportive.

My sincere appreciation is extended to my truly outstanding committee members. They were always welcoming, open, and generous with their time. Dr. Li Miao, thank you for inspiring and nurturing my intellectual and academic achievements. You welcomed me into academia when I was in the MS program at Purdue University, and you have since guided each and every step of my way to producing higher-quality research. Dr. Muzaffer Uysal, thank you for being a mentor and a friend. Without your trust, support, expertise, and encouragement, I could not have completed my PhD journey successfully. I always enjoyed our small talks about politics and life in general. Dr. Zheng Xiang, thank you for serving on my committee and providing valuable input on my dissertation. It was my pleasure to work with and learn from this dissertation committee.

Finally, I would like to express my profound gratitude to my family. My wife, Mina Choi, keeps me working hard and remaining humble. The sacrifices you made have not gone unnoticed, and they have allowed me to achieve my goals both personally and professionally. Thank you for your unconditional love and support. Hwiram (Hailey) Kim, my daughter, is my light, inspiration, and motivation. Thank you for all the hugs and kisses that remind me why I have pursued my doctoral journey. I would also like to thank my parents, Jejung Kim and Yangeun Pyo, and my parents-in-law, Byeongho Choi and Myeonghee Lee, for their financial and emotional support.

I hope to always make my dissertation committee and family proud to have had me as student, colleague, child, husband, and father.

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CHAPTER 1. INTRODUCTION

1.1. Background

In a foodservice operation, the food, the service, and the setting are the primary components that contribute to the customers' perceptions and attitudes. One component of a restaurant setting is the restaurant's menu. A restaurant menu is an initial signal to customers regarding their impending experiences. Because services are intangible, a foodservice operation sends tangible messages to their consumers through the design elements of the menu, projecting a desired image to generate greater profit margins. Building on this practice, extant research has addressed several effects of restaurant menus on customers' perceptions and attitudes: product placement (Reynolds, Merritt, & Pinckney, 2005; Yang, 2012), caloric labeling (Wei & Miao, 2013; Yoon & George, 2012), and pricing (Kreul, 1982; Pavesic, 1989; Raab, Mayer, Kim, & Shoemaker, 2009).

Descriptive food names are additional omnipresent elements of restaurant menus (Wansink, Painter, & van Ittersum, 2001). These descriptive labels comprise sensory names (i.e., buttery plump pasta), nostalgic names (i.e., grandma's pasta or Nana's favorite pasta), and brand names (i.e., Olive Garden's pasta) as opposed to general names (i.e., pasta). Despite the prevalent use of such descriptive menu labels in the area of full-service restaurants (Verhoeven, van Rompay, & Pruyn, 2009), emerging research on menu descriptions has focused mainly on food-related numerical information (i.e., serving size: 8 oz [227 g], calories: 400, and total fat: 50 g; (Kim, Ham, Yang, & Choi, 2013; Yoon & George, 2012). Research focusing on the effects of descriptive food names on a consumer's perceptions and attitudes, however, has been relatively scant. This gap is surprising for several reasons. First, many restaurant customers tend to rely on descriptive

food names for simple heuristic searching (Chaiken, 1980; Chandon & Wansink, 2012). Second, changes in menu labels from generic names to descriptive names have been found to significantly increase post-consumption satisfaction and increase sales by as much as 27 percent (Wansink et al., 2001). Third, adapting descriptive food names is associated with relatively little cost for restaurant operators; therefore, research studying the effects of descriptive food names on restaurant menus has both theoretical and practical significance.

This dissertation examines how descriptive food names influence customers' anticipated satisfaction and willingness to pay and explores the complementary underlying processes. More specifically, this dissertation investigates when customers are exposed to different types of descriptive food names and how they shape their social impressions toward their impending service experiences as well as how different social impressions affect anticipated satisfaction or willingness to pay more.

Following Wansink et al's (2001, 2014) conceptualization of descriptive food labels, this dissertation focuses on three descriptive names, including (1) sensory names, (2) nostalgic names, and (3) brand names. A general label (noun) represents a food name as a whole (e.g., pasta), while descriptive labels (adjectives) can be conceptually linked with nouns to convey certain attributes of food. More specifically, sensory names describe the taste, smell, texture, and mouth feel of a menu item, whereas nostalgic names elicit happy memories of family, tradition, and national origin (Davis, Magnini, Weaver, & McGehee, 2013; Guéguen & Jacob, 2012; Wansink & Love, 2014). Brand names involve cross-promotion with related reputable brands (Wansink et al., 2001).

Grounded in metaphoric information processing (Krishna, 2012; Landau, Meier, & Keefer, 2010), this dissertation proposes that certain attributes driven by different descriptive sources (i.e., sensory, nostalgic, and brand) can manifest in different forms of social impressions. A facet of information processing, metaphoric transfer (Landau et al., 2010), contends that metaphors can directly influence social information processing. In addtion, drawing on a social cognition model (Fiske, Cuddy, & Glick, 2007), this dissertation considers two universal dimensions of impressions, warmth and competence, which can be potentially involved in forming customers' perceptions of restaurants (Aaker, Garbinsky, & Vohs, 2012; Aaker, Vohs, & Mogilner, 2010). Specifically, warmth impressions typically comprise intention-related perceptions of generosity, kindness, honesty, sincereity, helpfulness, trustworthiness, and understanding (Fiske, Malone, & Kervyn, 2012; Fournier & Alvarez, 2012). On the other hand, competence impressions comprise ability and performance-related perceptions such as confidence, effectiveness, intelligence, and competitiveness; thus, this dissertation proposes that different metaphoric information included in descriptive food names can be translated into perceived warmth and/or perceived competence toward customers' impending service experiences.

As an extension of the social cognition model in conjunction with metaphoric transfer (Landau et al., 2010), this dissertation also proposes that warmth and competence, generated by descriptive food names, can drive different magnitudes of attitude (i.e., anticipated satisfaction) and behavioral intention (i.e., willingness to pay more). In hospitality literature, the roles of warmth and competence in attitude and behavioral intention encompass unexplored dimensions that lately have attracted

attention in alternative contexts, such as in a green hotel context (Gao & Mattila, 2014). Despite the importance of cultivating warmth and/or competence in hosptialtiy marketing (Gao & Mattila, 2014), little fine-grained empirical research scruitinizing the outcomes of warmth and competence in restaurant contexts has been conducted to date; therefore, this dissertation further explores the influences of warmth and competence on anticipated satisfaction and willingness to pay more.

1.2. Research Objectives

The purpose of the present study is to examine customers' social impressions, attitudes, and behavioral intentions toward descriptive menu labels. Specifically, this research (1) explores the relationships between descriptive menu labels and warmth-related and/or competence-related impressions. The metaphoric information processing model suggests that metaphors influence social information processing. That is, metaphors contained in descriptive menu labels can be transferred to warmth and competence impressions regarding impending service experiences. This research also (2) examines how warmth and competence affect customers' anticipated satisfaction. The social cognition model posits that the valence of impressions (warmth and competence) elicits different magnitudes of attitude, such as anticipated satisfaction. Finally, this dissertation (3) considers behavioral intentions and examines how warmth and competence influence willingness to pay more. The social cognition model goes further to posit that the valence of impressions leads to behavioral intentions, such as willingness to pay more; therefore, this study explores the relationships between impressions and willingness to pay.

1.3. Research Significance

1.3.1. Theoretical Significance

This dissertation has both theoretical and practical significance. This study contributes to existing research on restaurant menu designs in several ways. First, this dissertation represents an early attempt to theorize and evaluate warmth and competence dimensions to explain the influences of descriptive menu labels on social impression formation. The extant empirical research has focused on food-specific perceptions, such as food taste perceptions, associated with descriptive menu labels (Imm, Lee, & Lee, 2012; Wansink, van Ittersum, & Painter, 2004; Wansink, van Ittersum, & Painter, 2005). Yet the link between descriptive menu labels and the two fundamental impressions of warmth and competence has been unexplored. To this end, this dissertation uses the metaphoric transfer strategy associated with a social cognition model as a theoretical foundation for empirically testing whether descriptive menu labels signal warmth and/or competence impressions related to impending service experiences.

Second, this research offers novel insight into warmth and competence impressions toward satisfaction, which lately has attracted research attention in other contexts (Bauman & Skitka, 2012; Cuddy, Glick, & Beninger, 2011; Gao & Mattila, 2014). The significance of these two impression dimensions lies in their encompassing, but parsimonious, capacity to understand the magnitude of satisfaction. Despite limited research focusing on menu designs, previous research has proposed that competence judgments play a more important role in influencing the magnitude of satisfaction relative to warmth judgments (Aaker et al., 2012; Grandey, Fisk, Mattila, Jansen, & Sideman, 2005). Counter to what one might expect, however, warmth judgments can serve a more

powerful role in influencing anticipated satisfaction in impending restaurant service experiences.

Third, this dissertation expands existing research by examining the effect of descriptive labels on willingness to pay more. The limited empirical studies comprising the extant literature have provided mixed evidence. In one study conducted by Wansink et al., (2001), descriptive names of foods did not contribute to intentions to pay more; however, another study (Guéguen & Jacob, 2012) found that descriptive names *did* influence a consumer's willingness to pay more for a dining experience. These mixed findings might have been driven by study designs that did not consider competence-related impressions. That is, empirical research outside of hospitality literature posits that competence can be a powerful factor in purchase-related behaviors relative to warmth (Aaker et al., 2010); thus, this dissertation provides empirical evidence for willingness to pay associated with descriptive names by incorporating competence and/or warmth-related impressions, thereby establishing building blocks for future studies in this area of research.

1.3.2. Managerial Significance

This dissertation also has several important managerial implications for the foodservice industry. First, this study brings to practitioners' attention the significance of menu descriptions in driving impending warm and/or competent services (as evaluated by customers). The use of descriptive label names is an emerging trend in the hospitality industry because changing descriptions on menus involves relatively little cost for practitioners (Wansink & Love, 2014; Wansink et al., 2001). For example, some

restaurants (i.e., Cracker Barrel) rely on nostalgic food names, but other restaurants (i.e., Outback Steakhouse) predominantly use sensory food names. Still other restaurants (i.e., K & W) employ general non-descriptive food names; thus, the metaphoric transfer theoretical perspective allows practitioners to understand that different types of descriptive labels can successfully signal a firm's desired impression management in a customer's pre-service consumption situation.

Second, the conceptualization and empirical evidence of anticipated satisfaction related to warmth and/or competence provide important implications for service design and management. The results of this dissertation show that perceived warmth might play a more important role in anticipated satisfaction than perceived competence; therefore, practitioners should design and deliver warmth-related service environments and strategies for optimizing anticipated satisfaction during menu-selection situations.

Third, this study offers an improved understanding of menu design for increased profit margins. That is, this study examines and explicates the effects of warmth and/or competence on willingness to pay. The findings help practitioners to understand under which conditions customers have a greater willingness to pay and, therefore, how warmth and/or competence-triggering resources can be allocated accordingly.

1.4. Summary

This dissertation investigates the effects of descriptive food names on anticipated satisfaction and willingness through the lens of social cognition (warmth and competence). The global objective of this study is to examine the antecedents (sensory, nostalgic, and brand names) and the outcomes (anticipated satisfaction and willingness to

pay) of warmth and competence in pre-service consumption situations. Drawing upon metaphoric information processing and social cognition models, this dissertation offers important building blocks for hospitality service marketing in general and restaurant menu design in particular. The theoretical and managerial contributions of this study lie in the notions of the metaphoric transfer strategy and the associated conceptualizations of the social cognition model (warmth and competence) on customers' attitudes (anticipated satisfaction) and behavioral intentions (willingness to pay) during their menu selections.

The remainder of this dissertation is structured as follows. Chapter 2 provides a review of literature, including theoretical framework and research hypothesis development. Following the literature review, the methodology employed to test the hypotheses is laid out in Chapter 3. Next, Chapter 4 contains an interpretation of the results of the study. Chapter 5 then includes a discussion of the conclusions, theoretical and managerial implications, limitations, and an agenda for future research. Finally, a list of references and appendices are provided.

CHAPTER 2. REVIEW OF LITERATURE

2.1. Overview

This chapter integrates conceptual metaphor and social cognition theories to propose descriptive food names as potential differential drivers of warmth and/or competence impressions toward a restaurant. The chapter further proposes that anticipated satisfaction (attitudes) and willingness to pay (behavioral intentions) can be outcomes of warmth or competence judgments. In the chapter, the relevant theoretical background of the framework and hypothesized relationships is discussed. Chapter 2 contains five sections. The first section provides the theoretical underpinnings of the conceptual metaphors of descriptive food names. The second section reviews the existing research based on the social cognition model. The third section provides the potential links between descriptive food names and social impressions. The fourth section offers the differential effects of social impressions on a customer's attitude, such as anticipated satisfaction toward his or her impending services. The fifth section explicates the differential effects of social impressions on a customer's behavioral intentions, such as willingness to pay more in a restaurant. This chapter then presents the conceptual model for the present study.

2.2. Descriptive Food Names: Conceptual Metaphors

Menu labels serve as marketing tools for a foodservice firm because they are intended to promote particular perceptions to the customer. The use of extensive descriptive menu labels is prevalent in the hospitality industry (Wansink & Love, 2014).

Descriptive menu labels can be broadly categorized into numerical and linguistic-centric expressions (Wansink & Love, 2014; Wansink et al., 2001). Most existing research on restaurant menus has focused on the elements of nutritional, caloric, and pricing labels that are often expressed numerically (i.e., serving size: 8 oz [227 g], calories: 400, and total fat: 50 g, $13.99); however, empirical findings surrounding numerical labels on customers' perceptions are inconsistent (Naipaul & Parsa, 2001; Yoon & George, 2012). Stemming from these mixed findings concerning nutritional, caloric, and pricing labels, numerous studies have identified moderating and mediating factors that can potentially intervene in the relationships between the numerical labels and customers' perceptions (Wei & Miao, 2013; Yang, Kimes, & Sessarego, 2009).

Wansink et al. (2001, 2014) suggested that customers are more likely to rely on food-related trigger adjectives as simple heuristic cues rather than on numerical expressions in their food decision situations (Schuldt and Schwartz, 2010). For this reason, Wansink and his colleagues (2001) focused on the language-specific elements of menus, such as on descriptive food names. Descriptive food names include various adjectives in addition to nouns to effectively describe conceptual meanings associated with food names. These descriptive food names comprise sensory names (i.e., buttery plump pasta), nostalgic names (i.e., classic, old-world Italian Pasta), and brand names (i.e., Maggiano's Little Italy® pasta) as opposed to general names (i.e., BBQ Ribs). More specifically, sensory names can be defined as menu items that elicit multisensory experiences, including the taste, smell, and mouth feel of the menu item (Wansink & Love, 2014; Wansink et al., 2001). Nostalgic names can be described in terms of menu items that trigger wholesome memories of tradition and family (Guéguen & Jacob, 2012).

In contrast, brand names involve cross-promotion with reputable brands in the market (Wansink & Love, 2014).

While descriptive food names can have a positive effect on restaurant sales, studies on their adjective-triggering effects are largely overlooked in the current body of menu research (Verhoeven, van Rompay, & Pruyn, 2009; Wansink & Love, 2014). Despite limited empirical research in this area, descriptive food names are generally conceptualized as taste judgments (Wansink et al., 2001; Wansink et al., 2005); yet, the effects of descriptive food names on impending service consumptions are not explicitly explored in this research stream (Guéguen & Jacob, 2012; Wansink et al., 2005). To extend this body of menu research, however, there is a theoretical foundation supporting the contention that descriptive food names can influence customers' social judgments related to their impending service experiences.

The notion of *framing* posits that perceptions are driven by how a given piece of description is framed on menus (Hur & Jang, 2015; Wei & Miao, 2013). Research conducted on framing effects provides evidence regarding how food descriptions are used to make judgments about similar concepts (i.e., food description = food taste perceptions; Cacciari, 1998; Wansink 2014). As an extension of framing effects, *conceptual metaphor theory* suggests that language is an important part of the cognitive devices that people use to grasp abstract concepts in terms of superficially dissimilar concepts (Barsalou, 2008; Barsalou, Santos, Simmons, & Wilson, 2008; Landau et al., 2010). Specifically, metaphors operate in conceptual mapping between source concepts and dissimilar target concepts (Landau et al., 2010). *Source concepts* comprise attributes of descriptions, such as language choices. On the other hand, *target concepts* comprise relatively more abstract

referents, which are difficult to understand, such as social judgments toward firms and employees; therefore, language choices (source concepts) act as metaphors that shape how customers perceive the social judgments aspects of impending service experiences (abstract concepts: the target concepts).

2.3. Impression Formation: Warmth and Competence

Warmth and competence have emerged as two universal dimensions of impression formation in social cognition (Fiske et al., 2007). "Warmth" is defined as judgment of *intent*, such as being friendly, sincere, generous, trustworthy, and understanding, while "competence" is described as judgment of *ability and performance*, including skill, intelligence, and efficacy. These two dimensions have been extensively studied in organizational behavior literature because they are important determinants of professional and organizational outcomes, such as hiring, employee evaluation, and allocation of tasks and resources (Cuddy, Glick, & Beninger, 2011). Specifically, this research stream has applied the *stereotype content model* (Cuddy, Fiske, & Glick, 2008) to explain and predict how stereotypes can lead to biased ambivalent impressions toward individuals and groups. For example, some groups (i.e., older people or housewives) are often perceived as being warm but incompetent (Rudman & Phelan, 2008). In contrast, other groups (i.e., Asians or rich people) are often perceived as being competent but devoid of warmth, resulting in hostility and jealousy (Fiske, Cuddy, Glick, & Xu, 2002; Ho & Jackson, 2001). Empirical evidence has also shown that competence is considered a more salient factor than warmth in hiring and evaluation processes in a professional

workplace, whereas warmth is regarded as a more powerful factor in non-professional places, such as social gatherings (Cuddy et al., 2011).

In marketing literature, organizations have often been anthropomorphized. In other words, the notion of "*brand personality"* suggests that a brand possess human characteristics, which is consistent with the tendency to assign human traits to inanimate objects, such as foods or services (Aaker, 1997). Similarly, the *brands as intentional agents framework* shows that customers judge organizations in the same way they perceive people (Kervyn, Fiske, & Malone, 2012). Consistent with these theoretical predictions, recent marketing research focusing on social cognition illustrates that not-for-profit and for-profit organizations are associated with distinct reputations that influence customers' impression formations (Aaker et al., 2010). Customers perceive nonprofits as warm but less competent; thus, they are more willing to buy a product when they view it as being made by a for-profit (competent) organization than by a not-for-profit (warm) organization (Aaker et al., 2010).

Emerging research has extended these earlier studies, examining the influences of firms' marketing communications on customers' social judgments toward those firms. For example, Gao and Mattila (2014) found that a green hotel can be viewed as higher in both warmth and competence than a non-green hotel. In particular, they indicated that the provision of a green certification message can signal a hotel's warmth. Similarly, Bolton and Mattila (2015) showed that corporate social responsibility (CSR) cues can lead to customers' perceived warmth more so than to customers' perceived competence. The effect of CSR cues on warmth can be particularly salient when the CSR message is

consistent with a signal that is important in light of service consumption as customers seek evidence that a hospitality firm cares for its customers.

Despite the recognition of linguistic effects on service consumption-related judgments, there are limited applications of conceptual metaphor theory that explain and predict the relationships between food descriptions and social judgments (such as warmth and competence) in existing service literature. Except for the antecedents of warmth and competence examined under the rubrics of brand personality and corporate social responsibility, empirical findings are also scant regarding how customers perceive specific food descriptions through the lenses of warmth and competence toward a restaurant; therefore, the influences of food descriptions in social judgments of firms are not well understood. To bridge this knowledge gap, this dissertation takes into consideration the impacts of different metaphoric meanings contained in food descriptions in examining social-related impression formation.

2.4. Effects of Descriptive Food Names on Impression Formation

Verbal cues are known to have a strong impact on impressions (Magnini & Karande, 2010; Magnini, Miller, & Kim, 2011). Studies have shown that verbal cues contribute to evaluations because they serve as signals that prompt impressions of service experiences (Davis et al., 2013). Support for this contention can be drawn from framing and signaling theories to link food description and food taste-related perceptions. For example, Wansink et al. (2001) studied the effects of descriptive food names in a cafeteria setting. In their experiment, general menu labels (e.g., grilled chicken) were replaced by descriptive menu labels (e.g., tender grilled chicken). They found that

customers who were exposed to descriptive food names on menus expressed more pleasant taste perceptions than did those who were exposed to general names. They also found that attitudes toward the foods on the menu (i.e., whether foods represented "good values") and the restaurant (a high-quality restaurant) were more positive when the descriptive food names were used rather than when the general names were used. In a similar vein, Wansink et al. (2005) indicated that customers who ate food with descriptive food names (i.e., Succulent Italian Seafood Filet) generated a larger number of positive comments about the food and rated it as more appealing in taste than those eating food with general names (i.e., seafood filet). Verhoeven et al. (2009) also found that such descriptive food names have a more powerful effect on customer perceived restaurant service quality scales, such as on the extent to which a service is perceived as luxurious, more so than those food items that had general names.

Given the aforementioned discussion, prior research has suggested that descriptive food names as a whole lead to more positive food taste-related impressions (Wansink et al., 2001; Wansink et al., 2005), thereby signaling more premier service on quality scales than general food names (Verhoeven et al., 2009). This dissertation extends the existing studies by disentangling the effects of three distinct descriptive food names. Specifically, this research applies the theoretical prediction of conceptual metaphors (Krishna, 2012; Landau et al., 2010) to link different types of food descriptions and a seemingly unrelated factor, which is customers' social perceptions toward a restaurant. According to conceptual metaphor theory (Landau et al., 2010), in particular, evaluations of verbal cues can be driven by message characteristics, which in turn can lead to abstract social impressions through specific metaphors associated with descriptions. Furthermore,

a significant facet of metaphoric transfer strategy suggests that linguistic metaphors can influence distinct social information processing (Landau et al., 2010). In line with this conceptual metaphoric theoretical prediction, this dissertation suggests that different descriptive food names can be linked to customers' different social perceptions toward their impending service experiences.

2.4.1. Sensory Names

Sensory names are an important factor that is frequently used in restaurant menus (Wansink & Love, 2014; Wansink et al., 2001). On a restaurant menu, foods are often described using sensory-related adjectives to convey the taste, smell, and mouth feel of the items (Magnini & Karande, 2010; Wansink et al., 2005). It is well-documented that sensory descriptions can influence a customer's perceptions of food taste, enjoyment, and satisfaction (Auvray & Spence, 2008; Davis et al., 2013; Krishna, 2012). Through a series of experiments in a restaurant context, for instance, Wansink et al. (2005) found that customers who were shown food with descriptive food names (i.e., Succulent Italian Seafood Filet) rated those food items as more appealing and tasty than did those who exposed to general food names (i.e., seafood filet). Their findings also indicated that descriptive food names yield a larger number of positive comments about the food than do general food names. In addition, in the context of the packaged food industry, Imm et al. (2012) found that sensory labels significantly influence customers' sensory thoughts and perceived tastes of given foods, such as expected and perceived sensory quality and taste acceptance. Likewise, Swahn, Mossberg, Öström, and Gustafsson (2012) showed that sensory description labels enhance food taste perceptions in retail grocery stores

more so than generic descriptions, which emphasizes the important role of sensory marketing for food products. Davis et al. (2013) further demonstrated that verbal sensory descriptions in restaurants' radio advertisements (i.e., "You can almost *smell* the *smoky* and *delicious* aroma of your steak *grilling* to perfection") affect customers' perceived abilities to "almost taste" and "almost smell" advertised food items and purchase intentions.

While there is a prevailing view linking menu sensory labels and food taste perceptions, emerging research outside of hospitality literature has posited that many social-cognitive processes can be intertwined with low-level perceptions of sensory metaphors (Barsalou, 2008; Fay & Maner, 2012; Lakoff & Johnson, 1999; Meier, Schnall, Schwarz, & Bargh, 2012); therefore, sensory descriptions can provide a foundation for representation of social thoughts, such as warmth and competence (Cacciari, 2008; Fenko, Otten, & Schifferstein, 2010; Slepian, Weisbuch, Rule, & Ambady, 2011; Williams, 1976). In other words, sensory terms that describe physical properties of things (such as a "sweet person" or "sweetie") can also connote some higher-order concepts, such as social thought-related qualities (i.e., a "warm person"; (Fenko et al., 2010; Meier, Robinson, & Clore, 2004). This contention is consistent with the prediction of conceptual metaphor theory, which suggests that the use of metaphors influences social information processing (Landau et al., 2010).

Empirical evidence also shows that warmth impressions may be represented through the lens of sensory metaphors. For instance, Williams and Bargh (2008) examined the link between sensory experiences and impressions of prosocial behavior toward others. Results of two experimental studies collectively indicated that the

experience of physical warmth increases interpersonal warmth without one's awareness of this influence, and this psychological warmth consequently affects positive judgment of another's personality; therefore, they suggested that sensory metaphors can signal warmth-related mindsets, and, once they are cued, these warmth-related mindsets can influence one's judgments and related prosocial behaviors. Similarly, Zemke and Shoemaker (2008) found that the use of sensory cues can enhance social interaction behaviors with strangers in meeting events. Specifically, they indicated that when compared to no provision of scent, adding a pleasant scent (which was Geranium, a warm, rich citrusy fragrance) enhanced the number of social interaction behaviors by approximately 52 percent on a per-participant basis. In another experimental study conducted by Saint-Bauzel and Fointiat (2013), the participants were read a written list of character qualities describing a food (sweet smell vs. no smell) before judging the given food regarding social behaviors. The results of their study showed that the verbal descriptions of the food as smelling like vanilla promoted warmth-related impressions about the given food. Macrae, Raj, Best, Christian, and Miles (2013) extended these earlier studies and found that a warmth-triggering effect can be particularly salient in imagined sensory experiences rather than in actual experiences.

In light of the above discussion, sensory names can act as enhanced food-related sensory qualities, and warmth-related impressions can be driven by sensory metaphors. Extending this logic, this dissertation posits that sensory names can elicit a greater magnitude of warmth-related impressions due to sensory-warmth metaphoric effects. The logic of this hypothesis is summarized as follows:

Hypothesis 1: Sensory names can yield a greater magnitude of warmth-related impressions compared to general names.

2.4.2. Nostalgic Names

Nostalgia is another potent communication tool for food descriptions (Wansink et al., 2001). Although definitions vary, "nostalgia" is typically defined as a preference (general liking, positive attitude, or favorable emotion) toward objects (people, places, or things) from an earlier age (Holbrook, 1993; Sedikides, Wildschut, Arndt, & Routledge, 2008). Food descriptions are often designed to engender a sense of nostalgia as customers believe foods were better in an earlier time and may have fond memories of the way Mom or Grandma made foods; therefore, food descriptions often embrace nostalgic bonding to trigger warm memories of family and tradition, such as Mom's homemade and/or traditional pasta.

Foodservice research has suggested that nostalgia can be identified as a powerful source for food description, thereby generating positive customer responses about foods (Brown, Edwards, & Hartwell, 2010; Holbrook & Schindler, 2003). Using a qualitative approach, for example, Unger, Mcconocha, and Faier (1991) examined the incidence of nostalgic ads in different product categories (foods and beverages, household cleaning products, cosmetics, medicine, automotive, etc.). Their results indicated that ads for foods and beverages were the most popular product category that contained nostalgic elements in their advertising appeal. Furthermore, using an experimental approach, Locher, Yoels, Maurer, and Van Ells (2005) showed that homemade food connotes emotional attachment to the given food, which in turn drives positive associations between familiar tastes and

nostalgic thoughts of home and belonging. To complement, Guéguen and Jacob (2012) conducted an experiment to test the contention that nostalgic labels elicit happy memories of family and tradition. Their findings further indicated that these types of food names (e.g., Grandma's favorite grilled chicken), as compared to generic food names (e.g., grilled chicken), can be associated with greater sales because of the potential positive emotions associated with the nostalgic names.

However, there is scant attention devoted to implicate nostalgia as a resource or strategy for social perceptions in hospitality literature. Interestingly, research on social psychology has suggested that nostalgic cues can signal social proximity-related perceptions, such as social connectedness and empathy (Sedikides et al., 2008; Turner, Wildschut, & Sedikides, 2012). For instance, individuals exposed to nostalgic cues reported feeling more protected and loved (Wildschut, Sedikides, Arndt, & Routledge, 2006), showed greater attachment security and approach orientations toward others (Wildschut et al., 2006), had stronger perceptions of social support (Wildschut, Sedikides, Routledge, Arndt, & Cordaro, 2010), and emphathized more with the suffering of others (Zhou, Wildschut, Sedikides, Shi, & Feng, 2012). It is prudent to note that such cooperative intention and prosocial behaviors are particularly associated with warmth (Aaker et al., 2012; Cuddy et al., 2008).

Given the aforementioned discussion, nostalgic food names can induce warm memories of family and tradition, and the induction of such cues can be related to social connectedness and empathy. Extending this logic to the present context, this dissertation posits that nostalgic food names can potentially influence warmth-related impressions

because nostalgia can become metaphorically embodied in warmth impressions; therefore, the following hypothesis is offered:

Hypothesis 2: Nostalgic names can yield a greater magnitude of warmth-related impressions compared to general names.

2.4.3. Brand Names

Brand names involve cross-promotion with a reputable brand that has important food quality associations (Wansink & Love, 2014). Food branding research has utilized signaling theory to suggest that a brand name acts as a key extrinsic cue to influence customers' evaluations of food quality (Bredahl, 2004; Brodie, Whittome, & Brush, 2009; Richardson, Dick, & Jain, 1994). In an experiment conducted within the context of the food packing industry, for example, McCarthy and Norris (1999) examined the effects of branded ingredients on food quality perceptions. Their results indicated that the use of branded ingredients leads to greater food quality perceptions than does the use of non-branded ingredients. Likewise, Banović, Grunert, Barreira, and Fontes (2009) investigated how a brand can signal quality experiences after the blind-tasting of beef steaks at a supermarket. Brand of beef was found to be the predominant credibility-related cue that affects the quality of beef (Rubio, Oubiña, & Villaseñor, 2014).

While food branding literature has typically focused on the link between brand and food quality, restaurant branding literature has linked anthropomorphic traits to restaurant brands. Adapting Aaker's (1997) brand personality paradigm, numerous studies conducted within restaurant contexts have shown that restaurant brands are

associated with five human characteristics: sincerity, excitement, competence, sophistication, and ruggedness (Kim, Magnini, & Singal, 2011; Lee, Back, & Kim, 2009). It bears noting that among these five characteristics related to restaurant brands, "competence" is ranked as the most important dimension and "sophistication" is ranked as the least important dimension (Lee et al., 2009; Musante, Bojanic, & Zhang, 2008; Siguaw, Mattila, & Austin, 1999).

As an extension of the brand personality (BP) paradigm, emerging research has applied "brand" as an intentional agent framework (BIAF) to posit that judgments of warmth and competence can play an important role in customers' perceptions of brands. The major difference between the BP paradigm and the BIAF is valence of perceptions. That is, while brand personality comprises "personality traits" ("what" a brand is), the BIAF model incorporates both "social" and "brand perceptions" ("how" a brand and/or an employee *seems*; (Kervyn et al., 2012). Specifically, according to Aaker's (1997) brand personality (BP) paradigm, perceptions of brand personality require "actual" experiences to explain "actual" and "ideal" attributes of a particular brand. On the other hand, according to Kervyn, Fiske, and Malone's (2012) brand as an intentional agent framework (BIAF), actual experiences of brands are not necessarily needed because brands are associated with particular stereotypes. In support, empirical evidence grounded in BIAF shows that customers generally view for-profit companies as being competent, whereas nonprofits are perceived as being warm (Aaker et al., 2010). Aaker and her colleagues instructed their participants to look at a firm's webpage showing a product, an Ogio-designed message bag. The organization type was manipulated by using a .com (for-profit) versus a .org (nonprofit) Internet domain name. This subtle

manipulation was found to induce the participants in the.com for-profit condition to perceive the firm as being more competent and less warm than in the.org for-profit condition.

Taken together, prior research has suggested that a branded food name can lead to higher quality and credibility perceptions of the food relative to a non-branded food because of a signaling effect (similar concepts: branded food = food credibility). In addition, competence is also influenced by restaurant brands due to for-profit metaphors associated with competence. To incorporate these findings into a metaphoric theoretical perspective (dissimilar concepts: branded food = social perception toward a restaurant), the following hypothesis is proposed:

Hypothesis 3: Brand names can yield a greater magnitude of competence-related impressions compared to general names.

2.5. Anticipated Satisfaction

Anticipated satisfaction is an important factor in understanding customers' attitudes (Shiv & Huber, 2000). Specifically, anticipated satisfaction is typically described in terms of pre-consumption judgments in which customers vicariously experience the satisfaction of consuming a product and service prior to actual service consumption (LaTour & Peat, 1979; Shiv & Huber, 2000). Further, anticipated satisfaction is related to affective evaluations according to imagined experiences, which occur prior to consuming a core service (Shiv & Huber, 2000; Walker, 1995); therefore, anticipated satisfaction is conceptually different from post-consumption satisfaction,

which occurs after actual core service (Shiv & Huber, 2000; Walker, 1995). While anticipated satisfaction judgments are linked to service setting cues, such as menu descriptions (Botti & McGill, 2011), empirical evidence has made a direct link between descriptive food names and post-consumption satisfaction (Wansink et al., 2001; Wansink et al., 2005). For example, Wansink et al. (2001) indicated that descriptive food names have a positive effect on post-consumption satisfaction; nevertheless, the impacts of descriptive food names on *anticipated* satisfaction are largely overlooked in the existing body of menu research.

Emerging research outside of the restaurant menu context has posited that warmth and/or competence can be key predictors of anticipated satisfaction (Grandey et al., 2005; Scanlan & McPhail, 2000). For instance, one research stream has suggested that both warmth and competence lead to anticipated satisfaction in service encounters (Gao & Mattila, 2014; Grandey et al., 2005). On the other hand, another research stream has proposed that competence can serve a more predominant role than warmth in satisfaction with for-profit organizations, such as in the hospitality industry (Jennifer Aaker et al., 2010). While these two dimensions can be fundamental to understanding anticipated satisfaction (Gao & Mattila, 2014; Grandey et al., 2005), the warmth-triggering effect can be more salient than the competence-triggering effect in comprehending anticipated satisfaction during restaurant menu selection.

According to Fiske et al.'s (2007) social cognition model, warmth impressions are primary, reflecting the importance of first assessing others' intentions before determining their abilities to implement those intentions (Cuddy et al., 2008); therefore, people can be more sensitive to warmth cues than to competence cues, particularly when making initial

impressions (Bergmann, Eyssel, & Kopp, 2012; L. E. Williams & Bargh, 2008; Wojciszke & Abele, 2008). Empirical evidence has also posited that warmth judgments can be made more quickly than competence judgments and can have a greater effect on general attitudes, such as on anticipated satisfaction (Willis & Todorov, 2006; Wojciszke, Dowhyluk, & Jaworski, 1998; Ybarra, Chan, & Park, 2001). In addition, this social cognition model suggests that warmth judgments carry more weight in affective-based evaluations than do competence judgments (Cuddy et al., 2011).

To summarize the above discussion, anticipated satisfaction can be related to imagined experiences and affective-based evaluations that occur before actual core product and service consumptions. Further, warmth judgments can contribute more to anticipated satisfaction than can competence judgments because warmth effects can be pronounced under overall attitudes and affective-based evaluations. The logic of this hypothesis is summarized as follows:

Hypothesis 4: Warmth-related impressions have a more positive effect on anticipated satisfaction than have competence-related impressions.

2.6. Willingness to Pay

Willingness to pay for products or services is an essential factor reflecting purchasing behavioral intentions. “Willingness to pay” is described in terms of “the maximum amount of money a customer is willing to spend for a product or service” (Homburg, Koschate, & Hoyer, 2005). Willingness to pay is also the result of a customer’s cognitive evaluation of paying a higher price than s/he expected (Baker,

Davis, & Weaver, 2014; Han, Hsu, & Lee, 2009); therefore, willingness to pay is more cognitive-based than is anticipated satisfaction. That is, willingness to pay is more dependent on a customer's cognitive beliefs about a firm's ability to produce reliable, high-quality products or services (Ajzen & Driver, 1992).

Studies focusing on the effects of descriptive food names on willingness to pay are sparse, and the extant literature has provided mixed evidence. For instance, in one study conducted by Guéguen and Jacob (2012), researchers found that customers would be willing to pay a higher price for descriptive food names; however, the study does not identify how and why descriptive food names may be linked to a willingness to pay more. Similarly, Verhoeven et al. (2009) found that descriptive food names can have positive impacts on price expectations. Conversely, another study found that descriptive food names did not influence an increased willingness to pay (Wansink et al., 2001). Interestingly, Wansink and his colleagues indicated that increase in satisfaction, spawned by descriptive food names, was not reflected in an increase in willingness to pay. This finding is opposed to prior research suggesting that satisfied customers should be more willing to pay a higher price for a product or service (Homburg et al., 2005).

There is limited research studying the relationship between warmth/competence and willingness to pay; however, a social cognition model suggests that competence can take primacy as the weight people assign to each dimension is context-specific (Fiske et al., 2007). That is, although warmth can be weighted more heavily in affective-driven evaluations, people can weigh competence more heavily in cognitive-driven evaluations (Bennett, Hill, & Oleksiuk, 2013; Cuddy et al., 2008). Furthermore, this primacy of competence can be asymmetrical compared to the warmth impression because

competence and warmth can be inversely related in terms of ability-related perceptions (Cuddy et al., 2011). In support, Aaker et al. (2010) found that customers were more willing to buy from for-profit organizations due to higher levels of perceived competence. Ironically, customers viewed nonprofits as less competent but warmer, and, thus, warmth and competence were negatively correlated in terms of customers' willingness to buy products from either a for-profit or a nonprofit organization.

Extending the above logic, competence impressions can trump warmth in willingness to pay more because competence can have a stronger effect on requsite skills and abilities-related assessments of a firm's performance assurance; therefore, the following hypothesis is put forward:

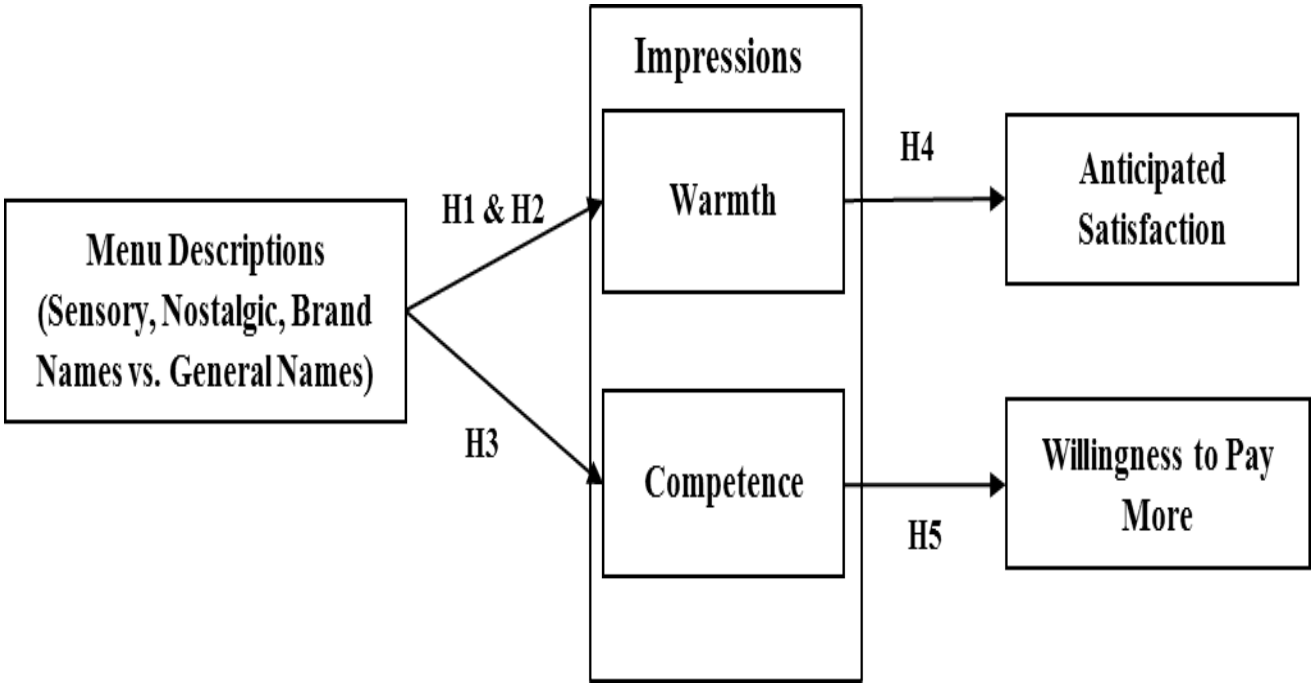
Hypothesis 5: Competence-related impressions can yield greater willingness to pay relative to warmth-related impressions.

2.7. Summary

This chapter has provided a review of literature that pertains to potential drivers (descriptive food names) and outcomes (anticipated satisfaction and willingness to pay more) of warmth and competence judgments toward a restaurant. Based on theoretical and empirical anchoring, this chapter proposes that descriptive food names can serve as associated metaphors that can shape different social impressions through customers' lenses; thus, a menu containing descriptive food names can be viewed as a human factor that spawns social impressions. It is further proposed that warmth and competence can be inversely related to anticipated satisfaction (attitudes) and willingness to pay more

(behavioral intentions); therefore, this dissertation answers which dimension can be more important in attitude and behavioral intention formations and how practitioners can balance communicating the two dimensions. The hypothesized relationships presented in the preceding discussion are depicted in Figure 2.1.

Figure 2. 1. Conceptual Model with Hypotheses



The hypotheses proposed in this dissertation are summarized below:

Hypothesis 1: Sensory names can yield a greater magnitude of warmth-related impressions compared to general names.

Hypothesis 2: Nostalgic names can yield a greater magnitude of warmth-related impressions compared to general names.

Hypothesis 3: Brand names can yield a greater magnitude of competence-related impressions compared to general names.

Hypothesis 4: Warmth-related impressions have a more positive effect on anticipated satisfaction than have competence-related impressions.

Hypothesis 5: Competence-related impressions can yield greater willingness to pay relative to warmth-related impressions.

In the following chapter, the methodology used to empirically test the above hypotheses is presented.

CHAPTER 3. METHODOLOGY

3.1. Method and Design Overview

This investigation includes two pretests and main study that use different sample populations (students and general customers). This chapter presents the methodology and results of the two pretests comprising explication of the validity and realism of the manipulated variables. Specifically, using a student sample, pretest 1 examined the efficacy of the descriptive entrée food name manipulations associated with intended different perceptions. Pretest 2 was conducted to increase the reliability, validity, and generalizability of the measures and findings derived from the pretest 1 by using different menu items (dessert items). Finally, based on the findings of the pretests, the experimental designs of the main study are presented.

3.2. Pretest 1

3.2.1. Overview

The primary purposes of pretest 1 were to develop experimental stimuli for descriptive entrée food names and to check the efficacy of the manipulations before conducting the main study. Following Wansink et al.'s (2001, 2014) conceptualization, descriptive entrée labels comprised sensory, nostalgic, and brand names. Pretest 1 was, therefore, conducted to ascertain whether adjectives that portray sensory, nostalgic, and brand themes could help trigger associated perceptions. This pretest helped ensure that food name manipulations were appropriate to proceed with in the main study for testing

the specific hypotheses involved with different social impressions. Finally, the experimental realism and the adequacy of the sample population were checked.

3.2.2. Experimental Stimuli, Participants, and Procedure

To develop experimental stimuli for descriptive entrée food names, several procedures were followed in pretest 1. First, previous studies have presented popular entrée items based on orders (Wansink et al., 2001); thus, in the pretest, an evaluation of the consumption habits of customers was carried out to determine which entrée item was to be used to evaluate the influence of descriptive entrée food names. Second, in this pretest, four labels (i.e., the "usual" label, the "sensory" label, the "nostalgic" label, and the "brand" label) were generated for entrée items (Wansink & Love, 2014). Third, the pretest 1 was completed to assess the validity of the manipulation checks for the adjective-triggering perceptions derived from previous studies (Wansink & Love, 2014; Wansink et al., 2001). Fourth and finally, the experimental realism and the adequacy of the sample population were tested in the this pretest (Perdue & Summers, 1986).

Participants in pretest 1 comprised 203 students at a large Mid-Atlantic University; 50% of whom were female, and 71% of whom were Caucasian. Respondents were randomly assigned to one of four treatment conditions: sensory names (n = 53), nostalgic names (n = 49), brand names (n = 53), or usual names (n = 48). Subjects were asked to complete an online-based questionnaire to aid in the development of the main study by testing the efficacy of manipulations of descriptive labels on an entrée menu. Subjects were instructed to imagine themselves in a situation at a restaurant where they were to order from among the entrée menu items. Then subjects were to select an entrée

item that they would be most likely to order as presented in an online questionnaire. Upon selecting an entrée item, the respondents were exposed to different types of descriptive food names (e.g., sensory, nostalgic, brand, and usual names) and instructed to evaluate their perceptions of those descriptive food names. Finally, the respondents were asked to respond to questions concerning experimental realism, the likely frequency of eating the item at a restaurant, and some basic demographic items. The entrée menu labels used in this pretest are presented in Table 3.1.

Table 3. 1. Menu Labels for Entrée Items Used in Pretest 1

Usual Label	Sensory Label	Nostalgic Label	Brand Label
Rotisserie Chicken	Wood-fired Savory Rotisserie Chicken	Grandma's Homemade Rotisserie Chicken	Capital Grille® Rotisserie Chicken
BBQ Ribs	Sweet Smoked Succulent BBQ Ribs	Mom's Favorite BBQ Ribs	Bobby Flay's® BBQ Ribs
Ribeye Steak	Sweet Glazed Grilled Ribeye	Traditional Classic Ribeye	Ruth Chris's USDA Prime® Ribeye
Pasta	Buttery Plump Pasta	Classic Old-world Italian Pasta	Maggiano's Little Italy® Pasta
Salmon	Smoked Savory Poached Salmon	Grandma's Home-style Poached Salmon	Bonefish Grill® Poached Salmon
Shrimp Linguine	Succulent Shrimp Linguine	Classic Home-style Shrimp Linguine	Bonefish Grill® Shrimp Linguine
Eggplant	Fresh Grilled Eggplant Supreme Crusted with Butter	Mom's Home-style Eggplant Supreme	Bobby Flay's® Eggplant Supreme

3.2.3. Measurement of Variables, Manipulation Checks, Experimental Realism, and Sample Adequacy

Entrée item ordered. Participants were presented with seven entrée items, including "Rotisserie Chicken," "BBQ Ribs," "Ribeye Steak," "Pasta," "Salmon," "Shrimp Linguine," and "Eggplant.". Then the subjects were asked to select the one entrée item that they would be most likely to order at a restaurant.

Usual entrée names. Usual entrée names were operationalized by using only food names without the addition of any adjectives. To check the effectiveness of this manipulation, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following item: "this menu label contains a food name."

Sensory entrée names. Sensory entrée names were manipulated by adding sensory-triggering adjectives to the usual entrée names. The sensory names were "Wood-fired Savory Rotisserie Chicken," "Sweet Smoked Succulent BBQ Ribs," "Sweet Glazed Grilled Ribeye," "Buttery Plump Pasta," "Smoked Savory Poached Salmon," "Succulent Shrimp Linguine," and "Fresh Grilled Eggplant Supreme Crusted with Butter." Three items were included to serve as manipulation checks for the sensory entrée names (Wansink et al., 2001). The three items were "this menu label attempts to convey the taste of the item," "this menu label attempts to convey the smell of the item," and "this menu label attempts to convey the mouth feel of the item." All of the items were measured on a seven-point scale with the endpoints of 1 = strongly disagree and 7 = strongly agree (Cronbach Alpha = .71).

Nostalgic entrée names. Nostalgic entrée names were assessed by inserting nostalgia-triggering adjectives alongside the usual entrée names. The nostalgic names were "Grandma's Homemade Rotisserie Chicken," "Mom's Favorite BBQ Ribs," "Traditional Classic Ribeye," "Classic Old World Italian Pasta," "Grandma's Home-style Poached Salmon," "Classic Home-style Shrimp Linguine," and "Mom's Home-style Eggplant Supreme." Consistent with previous studies (Wansink et al., 2001), to check the effectiveness of this manipulation, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following two items: "this menu label attempts to convey a wholesome feeling of family" and "this menu label attempts to convey a wholesome feeling of tradition" (r = .70).

Brand entrée names. Branded entrée names were operationalized by adding brands to the usual entrée names. The brand names were "Capital Grille ® Rotisserie Chicken," "Bobby Flay's® BBQ Ribs," "Ruth Chris's USDA Prime® Ribeye," "Maggiano's Little Italy® Pasta," "Bonefish Grill ® Poached Salmon," "Bonefish Grill ® Shrimp Linguine," and "Bobby Flay's® Eggplant Supreme." One item was included to serve as the manipulation check for the brand names. The item was "this menu label contains a brand name," and it was measured on a seven-point Likert-type Scale with the endpoints of 1 = strongly disagree and 7 = strongly agree.

Experimental realsim. To assess the realism of the experiment, the subjects were asked to respond to the following item: "this entrée item could be seen on an actual restaurant menu" (strongly disagree = 1; strongly agree = 7). The mean used in the experiment earned a mean realism score of 6.20.

Sample and entrée adequacy. Regarding sample adequacy, all of the participants had eaten the entrée items presented in the online questionnaire in a restaurant at least once in the previous year, and 50 percent had dined at a restaurant more than fifty times in the previous year. To assess entrée adequacy, the subjects were also asked to respond to the following item: "I generally enjoy eating this type of entrée at a restaurant" (strongly disagree = 1; strongly agree = 7). This experimental item earned a mean realism score of 5.52.

3.2.4. Results

3.2.4.1. Entrée item's popularity

To determine the entrée items for the main study, the popularity of the seven entrée items presented in the online questionnaire of this pretest was assessed using descriptive statistics. That is, an evaluation of the consumption habits of customers was conducted in the pretest to ascertain which entrée items would be used to assess the effects of descriptive food names in the main study. Table 3.2 provides the frequency and percent of the entrée items as they were ordered by the subjects in the pretest.

Table 3. 2. Frequency of Entrée Items Ordered

Entrée Items	Frequency (Percent)
Rotisserie Chicken	19 (9.4 %)
BBQ Ribs	27 (13.4 %)
Ribeye Steak	51 (25.2 %)
Pasta	35 (17.3 %)
Salmon	36 (17.8 %)
Shrimp Linguine	31 (15.3 %)
Eggplant	3 (1.5 %)

3.2.4.2. Manipulation Checks for Descriptive Entrée Names

As indicated in the measurement section, a corresponding measure was used as a manipulation check for each descriptive entrée name. For example, a sensory name index was formed by averaging the ratings of three related items (Cronbach Alpha = .71). A nostalgic name index was created by averaging the scores of two related items (r = .70). Both the brand and the general name indices were single-associated items, respectively. The means and standard errors of the four descriptive manipulations are listed in Table 3.3. As presented, the mean scores across the four conditions were all within the range of 5.08 to 6.04 on a seven-point Likert-type scale. Overall, these high mean scores suggested that the manipulations of the salience of the descriptive entrée names were successful (as expected) before the main study was conducted.

Table 3. 3. Means and Standard Errors of Descriptive Entrée Names' Ratings

Descriptive Entrée Names (N = number of participants assigned)	Means (Standard Errors)
Usual Names (N = 53)	6.02 (.16)
Sensory Names (N = 49)	5.08 (.17)
Nostalgic Names (N = 53)	5.70 (.17)
Brand Names (N = 48)	6.04 (.19)

3.2.5. Discussion

Pretest 1 investigated the efficacy of the descriptive entrée food name manipulations. First, regarding the popularity of entrée items, "eggplant" was selected with only 1.5 percent frequency, which might comprise cause for eliminating this item

from the main study design due to a low level of popularity. This procedure is consistent with previous studies in that consumption habits of customers were investigated to select items for evaluating influences of descriptive labels (Guéguen & Jacob, 2012; Wansink et al., 2001).

Second, the results indicate that the manipulation checks for the descriptive entrée names might be deemed successful; however, the manipulation of the sensory names elicited a relatively low mean rating compared to other descriptive names (i.e., nostalgic names, brand names, and general names). Therefore, there was a need to revise the manipulation of the sensory names for the design for the main study.

Third, the reliability of the sensory measures was acceptable ($\alpha = .71$) but was lower compared to others exhibiting over .80. This relatively low reliability also cautioned that a stronger manipulation of sensory names would be more effective for the main study; however, it is prudent to note that this pretest was the earliest attempt to check the efficacy of the manipulation checks for the descriptive food names based on the definitions provided by Wansink et al.'s (2001) study. That is, previous studies have not explicitly tested these manipulations (Guéguen & Jacob, 2012; Verhoeven et al., 2009).

Fourth and finally, the pretest assisted in determining the experimental realism and the adequacy of the sample population. Unrealistic manipulations and inadequate sample populations could lead to confusion and erroneous results (Perdue & Summers, 1986). Overall, the manipulations were deemed realistic and appropriate in terms of the entrée items and the sample population.

3.3. Pretest 2

3.3.1. Overview

Prior research posits that the effects of descriptive labels on perceptions might differ regarding “dessert items” compared to “entrée items” (Wansink et al., 2005). The rationale for this presumption is that choice of dessert items might be influenced by names more so than choice of entrees because customers might already be at an evaluation ceiling (Wansink et al., 2004; Wansink et al., 2005); therefore, the objectives of this pretest were twofold: (1) to develop experimental stimuli for descriptive dessert items and (2) to replicate the pretest in a different menu context-related experiment. Ultimately, pretest 2 served to increase the reliability, validity, and generalizability of the manipulations and measures derived from pretest 1 concerning the design of the main study.

3.3.2. Experimental Stimuli, Participants, and Procedure

The same procedures used in pretest 1 were employed to develop experimental stimuli for the descriptive dessert food names in pretest 2. First of all, the frequency of the dessert items ordered was assessed to decide which dessert items were to be used for the main study. Next, the four manipulations of the dessert items were created and evaluated in terms of manipulation checks (Wansink & Love, 2014; Wansink et al., 2005). Finally, the experimental realism and the adequacy of the sample population were pretested in this pretest (Perdue & Summers, 1986).

Pretest 2 was conducted on a sample of 132 undergraduate students at a large Mid-Atlantic University. Of the 132 participants, 60% were female, and 63% were

Caucasian. Subjects were randomly assigned to each of the four stimuli in a between-subject experimental design: sensory names (n = 34), nostalgic names (n = 32), brand names (n = 32), and usual names (n = 34). Respondents were asked to complete an online-based questionnaire designed for evaluating the manipulation checks. They were instructed to project themselves into a dessert-ordering situation at a restaurant. Respondents then selected the dessert item that they would be most likely to order. Based on the item that they chose, respondents were exposed to different types of descriptive food names (e.g., sensory, nostalgic, brand, and usual names) and instructed to assess their perceptions. Finally, the participants responded to items regarding experimental realism, the frequency of eating the item at a restaurant, and some basic demographic items. The dessert menu labels used in this pretest are presented in Table 3.6.

Table 3. 4. Menu Labels for Entrée Items used in Pretest 2

Usual Label	Sensory Label	Nostalgic Label	Brand Label
Chocolate Ice Cream Cake	Rich and Moist Triple Chocolate Ice Cream Cake	Traditional Triple Chocolate Ice Cream Cake	Haagen-Dazs ® Triple Chocolate Ice Cream Cake
Apple Pie	Succulent Apple Pie	Grandma's Homemade Apple Pie	Paula Deen's® Apple Pie
Cheesecake	Sweet Glazed Cheesecake	Classic Old NewYork Style Cheesecake	Cheesecake Factory® Cheesecake
Peach Cobbler	Succulent Peach Cobbler	Mom's Favorite Peach Cobbler	Ruth Chris® Peach Cobbler

3.3.3. Measurement of Variables, Manipulation Checks, Experimental Realism, and Sample Adequacy

Dessert item ordered. Participants were presented with four dessert items: "Chocolate Ice Cream Cake," "Apple Pie," "Cheesecake," and "Peach Cobbler." Then the subjects were asked to select the one dessert item that they would be most likely to order if they were at a restaurant.

Usual desert names. Usual desert names were operationalized by using only food names (nouns). A manipulation check was conducted on the food names by including a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) regarding the following item: "this menu label contains a food name."

Sensory dessert names. Sensory dessert names were assessed by adding sensory-triggering adjectives to the usual food names. The sensory names were "Rich and Moist Triple Chocolate Ice Cream Cake," "Succulent Apple Pie," "Sweet Glazed Cheesecake," and "Succulent Peach Cobbler." For a manipulation check, subjects were asked to respond on a seven-point Likert-type scale (strongly disagree = 1; strongly agree = 7) to the following three items: "this menu label attempts to convey the taste of the item," "this menu label attempts to convey the smell of the item," and "this menu label attempts to convey the mouth feel of the item." Not as expected, the three items failed to achieve adequate reliability (Cronbach Alpha = .24).

Nostalgic dessert names. Nostalgic dessert names were manipulated by inserting nostalgia-triggering adjectives alongside the usual dessert names. The nostalgic names were "Traditional Triple Chocolate Ice Cream Cake," "Grandma's Homemade Apple Pie," "Classic Old NewYork Style Cheesecake," and "Mom's Favorite Peach Cobbler."

The effectiveness of this manipulation was assessed by a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) regarding the following items: “this menu label attempts to convey a wholesome feeling of family” and “this menu label attempts to convey a wholesome feeling of tradition” (r = .50).

Brand dessert names. Branded dessert names were operationalized by adding brands to the usual entrée names. The brand names were “Haagen-Dazs ® Triple Chocolate Ice Cream Cake,” “Paula Deen’s® Apple Pie,” “Cheesecake Factory® Cheesecake,” and “Ruth Chris® Peach Cobbler.” For a manipulation check, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following item: “this menu label contains a brand name.”

Experimental realism. Regarding experimental realism, the following item was included as a check: “this entrée item could be seen on an actual restaurant menu” (strongly disagree = 1; strongly agree = 7). This experiment earned a mean realism rating of 5.81.

Sample and entrée adequacy. To assess sample adequacy, 119 participants out of the 132 total undergraduate students reported having eaten the dessert item they selected in the online questionnaire at a restaurant at least once in the past year. In addition, 50 percent of the participants reported having dined at a restaurant more than fifty times in the past year. Regarding dessert adequacy, the subjects were asked to assess the following item: “I generally enjoy eating this type of dessert at a restaurant” (strongly disagree = 1; strongly agree = 7). The measure used in this experiment earned a mean realism score of 5.31.

3.3.4. Results

3.3.4.1. Dessert item popularity

The popularity of the four dessert items was assessed using descriptive statistics. This pretest was conducted to ascertain which dessert items would be used for the main study. Results show that the dessert items ultimately included in the main study were selected at least 13 times in this pretest, and those three items were ordered with greater than 20% frequency in the pretest. Table 3.5 presents the frequency and percent of the entrée items ordered by the subjects in pretest 2.

Table 3. 5. Frequency of Dessert Items Ordered

Dessert Items	Frequency (Percent)
Chocolate Ice Cream Cake	58 (43.9 %)
Apple Pie	20 (15.2 %)
Cheesecake	41 (31.1 %)
Peach Cobbler	13 (9.8 %)

3.3.4.2. Manipulation Checks for Descriptive Dessert Names

The means and standard errors for the four descriptive manipulations are presented in Table 3.8. As mentioned earlier, the composite measure of the sensory names failed to earn an acceptable reliability rating given a very low Cronbach Alpha (.24); therefore, the means and standard errors for the three sensory items are reported separately. Overall, except for the sensory name manipulation, descriptive name manipulations earned relatively high mean scores; however, the standard error of the

branded dessert names was higher than the standard errors of other names. Thus, the manipulation of the branded dessert names would be considered for the main study design.

Table 3. 6. Means and Standard Errors of Descriptive Dessert Names' Ratings

Descriptive Dessert Names (N = number of participants assigned)	Means (Standard Errors)
Usual Names (N= 34)	6.00 (.18)
Sensory Names (N= 34)	Taste: 5.47 (.19) Smell: 3.50 (.30) Mouth Feel: 5.24 (.24)
Nostalgic Names (N= 32)	5.36 (.19)
Brand Names (N = 32)	5.78 (.34)

3.3.5. Discussion

Unlike pretest 1, pretest 2 validated the effectiveness of the food name manipulations in a different menu context: with dessert menu labels. The results provide important insights regarding the design of the main study. First, the four dessert items can be considered for experimental stimuli in the main study design because they were selected within the range of 9.8% (Peach Cobbler) to 43.9% (Chocolate Ice Cream Cake) frequency in this pretest. Second, the manipulations of the usual names and nostalgic names were received as intended; however, the failure of the reliability of the sensory manipulation needs to be further addressed in the main study design. In particular, the

sensory names should be revised to elicit a high mean rating of smell perception. In addition, the unequivocal magnitude of the branded dessert names was evident in the standard error rating of the mean when compared to other manipulation checks; therefore, the effective manipulation of the brand names and the appropriate measure related to brand attachment are needed to capture and control the nuance of differences between the four conditions. Third and finally, the manipulations were deemed realistic and appropriate concerning the dessert item selections and sample population.

3.4. Methodology of the Main Study

The purpose of the main study was to empirically test the proposed hypotheses of this dissertation. The hypotheses were tested regarding two menu contexts: entrées and desserts. Consistent with the conceptualizations of the pretests, four descriptive menu labels were experimentally manipulated as between-subjects: sensory labels, nostalgic labels, and brand labels as opposed to general labels. Following the food name manipulations of the pretests, a set of dependent variables and a control variable were measured: social impressions ("warmth" and "competence"), emotional attachment (the control variable), attitudes (anticipated satisfaction), and behavioral intentions (willingness to pay more). Finally, demographic information about the participants was measured.

3.4.1. Experimental Design, Participants, and Procedure

The research hypotheses in the main study were tested using a replicated between-subjects experimental design. This study was replicated across two menu contexts:

entrée menu label vs. dessert items. Participants were randomly assigned to one of the eight experimental conditions. Five hundred participants were recruited from an online consumer panel at a large, reputal marketing research company targeting general consumers in the US. These data collection procedures were approved by the Institutional Review Board of a large Mid-Atlantic University (see Appendix D). Of these, 213 participants were female (43%). The participants were between the ages of 18 and 78 (*M* = 50.43).

Individuals were instructed to project themselves into a situation in which they were seated in a restaurant, and they were deciding what to order. Next, the subjects selected the one food item from either entrées or desserts that they would be most likely to order at a restaurant. Each subject was then exposed to different descriptive food manipulations based on the item they had selected. Upon exposure to the manipulations, the participants responded to a set of dependent variable measures, manipulation checks, and some basic demographic items. Upon the completion of the experiment, the participants were debriefed and thanked for their participation in the study. Menu labels for the entrées and desserts that were used in the main study are presented in Table 3.7. and Table 3.8., respectively. In addition, the experimental procedure is described in Figure 3.1.

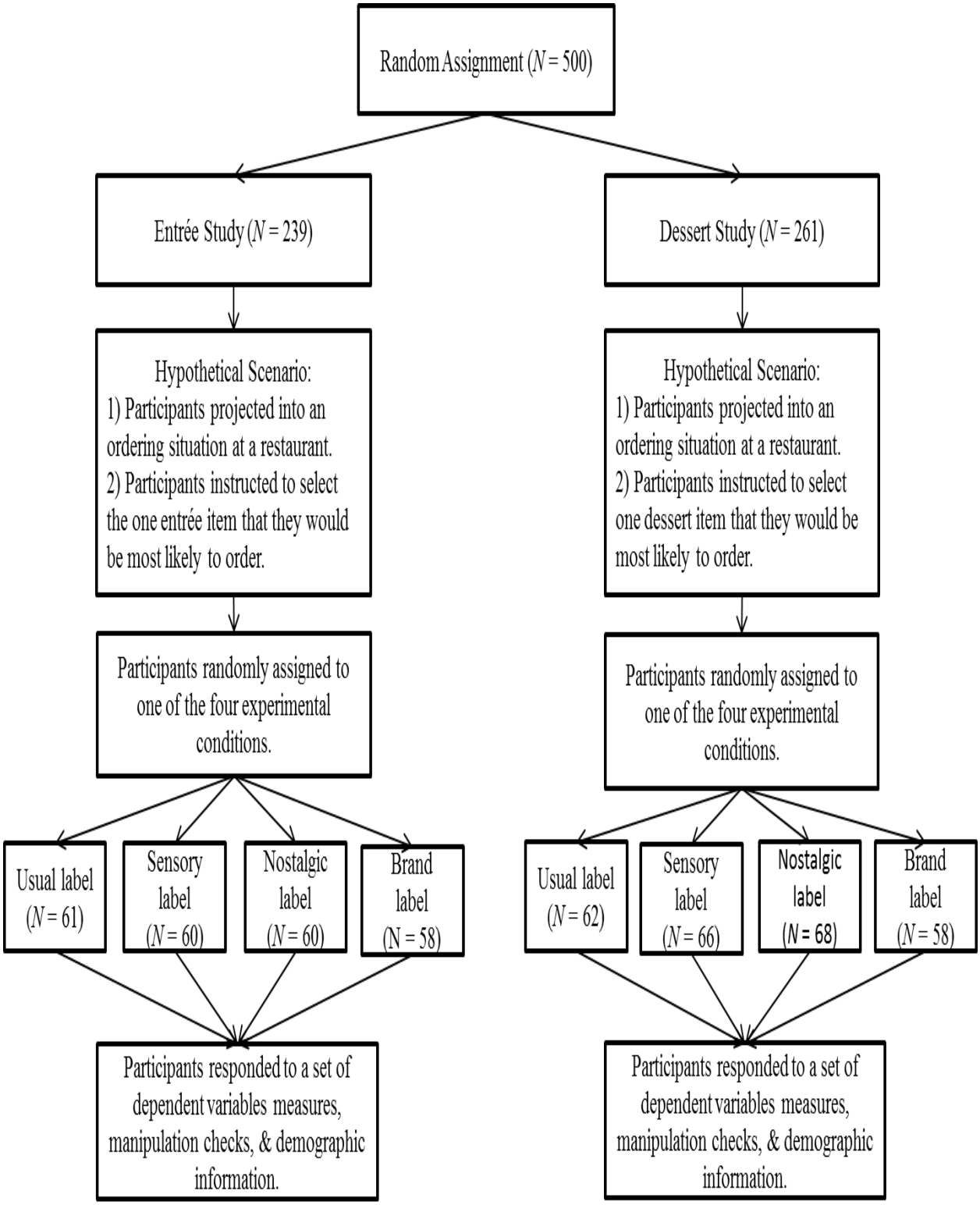
Table 3. 7. Menu Labels for Entrée Items Used in the Main Study

General Label	Sensory Label	Nostalgic Label	Brand Label
Rotisserie Chicken	Wood-fired Savory Rotisserie Chicken	Grandma's Homemade Rotisserie Chicken	Capital Grille® Rotisserie Chicken
BBQ Ribs	Sweet Smoked Succulent BBQ Ribs	Mom's Favorite BBQ Ribs	Bobby Flay's® BBQ Ribs
Ribeye Steak	Sweet Glazed Grilled Ribeye	Traditional Classic Home-style Ribeye	Ruth Chris's USDA Prime® Ribeye
Pasta	Buttery Plump Pasta	Mom's Home-style Italian Pasta	Maggiano's Little Italy® Pasta
Salmon	Smoked Savory Poached Salmon	Grandma's Home-style Poached Salmon	Bonefish Grill® Salmon
Shrimp Linguine	Sweet and Succulent Grilled Shrimp Linguine	Classic Home-style Shrimp Linguine	Bonefish Grill® Shrimp Linguine
Eggplant	Sweet Grilled Eggplant	Mom's Home-style Eggplant	Bobby Flay's® Eggplant Supreme

Table 3. 8. Menu Labels for Dessert Items Used in the Main Study

General Label	Sensory Label	Nostalgic Label	Brand Label
Chocolate Ice Cream Cake	Moist and Succulent Triple Chocolate Ice Cream Cake	Traditional Chocolate Ice Cream Cake	Haagen-Dazs® Chocolate Ice Cream Cake
Apple Pie	Crispy and Buttery Apple Pie	Grandma's Homemade Apple Pie	Paula Deen's® Apple Pie
Cheesecake	Rich and Creamy Glazed Cheesecake	Traditional NewYork Style Cheesecake	Cheesecake Factory's Prime® Cheesecake
Peach Cobbler	Snappy Seasonal Peach Cobbler	Mom's Favorite Peach Cobbler	Paula Deen's® Peach Cobbler

Figure 3. 1. Experimental Procedure



3.4.2. Manipulation Checks, Measurement of Variables, Experimental Realism, and Sample Adequacy

General names. General names were operationalized by using only food names (nouns). For entrée items, six general names were used: “Rotisserie Chicken,” “BBQ Ribs,” “Ribeye Steak,” “Pasta,” “Salmon,” “Shrimp Linguine,” and “Eggplant.” For dessert items, four general names were employed: “Chocolate Ice Cream Cake,” “Apple Pie,” “Cheesecake,” and “Peach Cobbler.” For manipulation checks, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following item: “this menu label contains a food name.”

Sensory names. Sensory names were manipulated by including sensory-triggering adjectives with the general names. Sensory entrée names were “Wood-fired Savory Rotisserie Chicken,” “Sweet Smoked Succulent BBQ Ribs,” “Sweet Glazed Grilled Ribeye,” “Buttery Plump Pasta,” “Smoked Savory Poached Salmon,” and “Sweet Smoked Succulent Shrimp Linguine.” Sensory dessert items were “Rich and Moist Triple Chocolate Ice Cream Cake with Hazelnut Flavor,” “Crispy Apple Pie with Buttery Flavor,” “Rich Creamy Glazed Cheesecake with Luscious Flavor,” and “Snappy Seasonal Peach Cobbler.” For manipulation checks, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following items: “this menu label attempts to convey the taste of the item,” “this menu label attempts to convey the smell of the item,” and “this menu label attempts to convey the mouth feel of the item” (sensory entrée names: Cronbach Alpha = .84 / sensory dessert names: Cronbach Alpha = .78).

Nostalgic names. Nostalgic names were operationalized by inserting nostalgia-triggering adjectives alongside the general entrée names. Nostalgic entrée names were "Grandma's Homemade Rotisserie Chicken," "Mom's Favorite BBQ Ribs," "Traditional Classic Ribeye," "Mom's Home-style Italian Pasta," "Grandma's Home-style Poached Salmon," and "Classic Home-style Shrimp Linguine." Nostalgic dessert names were "Traditional Chocolate Ice Cream Cake," "Grandma's Homemade Apple Pie," "Traditional NewYork Style Cheesecake," and "Mom's Favorite Peach Cobbler." For manipulation checks, participants were asked to respond to the following two items: "this menu label attempts to convey a wholesome feeling of family" and "this menu label attempts to convey a wholesome feeling of tradition." All of the items were measured on a seven-point scale with the endpoints of 1 = strongly disagree and 7 = strongly agree (nostalgic entrée names: r = .80 / nostalgic dessert names: r = .80)

Brand names. Brand names were manipulated by adding brands to the general entrée names. Branded entrée names were "Capital Grille ® Rotisserie Chicken," "Bobby Flay's® BBQ Ribs," "Ruth Chris's USDA Prime® Ribeye," "Maggiano's Little Italy® Pasta," "Bonefish Grill ® Salmon," and "Bonefish Grill ® Shrimp Linguine." Branded dessert names were "Haagen-Dazs® Chocolate Ice Cream Cake," "Paula Deen's® Apple Pie," "Cheesecake Factory's Prime® Cheesecake," and "Paula Deen's® Peach Cobbler." For manipulation checks, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following item: "this menu label contains a brand name."

Warmth. Warmth was measured using a three-item scale adapted from Aaker et al.'s (2010) study. The warmth dimension included the following three items: "warm,"

"kind," and "generous." All of the responses were assessed on a seven-point Likert-type Scale (strongly disagree = 1, strongly agree = 7; entrée study: $\alpha = .91$, dessert study: $\alpha = .91$).

Competence. Competence was assessed using a three-item scale adopted from Gao and Mattila's (2014) study. The scale comprised three items: "competent," "effective," and "efficient." All of the responses were measured on a seven-point Likert-type Scale (strongly disagree = 1, strongly agree = 7; entrée study: $\alpha = .95$, dessert study: $\alpha = .95$) .

Emotional attachment. Emotional attachment might have affected the measures of warmth (Thomson, MacInnis, & Whan Park, 2005) and competence (Brakus, Schmitt, & Zarantonello, 2009). That is, the stronger an individual's attachment to a menu item, the more likely he/she might have formed favorable impressions. To rule out this potential alternative explanation, emotional attachment was assessed as a control variable. Adopting from Chen and Phou's (2013) study, the emotional attachment scale comprised three items: "this menu item means a lot to me," "I feel a strong sense of belonging to this menu item," and "I am very attracted to this menu item" (entrée study: $\alpha = .90$ / dessert study: $\alpha = .88$). All of the responses were measured on a seven-point scale with the endpoints of 1 = strongly disagree and 7 = strongly agree.

Anticipated satisfaction. Anticipated satisfaction was measured using a three-item instrument: "very dissatisfied/very satisfied," "very unhappy/very happy," and "very bad/very good," adopted from Yang and Mattila's (2013) study. All of these items were measured on a seven-point, bipolar scale (entrée study: $\alpha = .91$ / dessert study: $\alpha = .92$).

Willingness to pay more. Willingness to pay more was measured using a three-item scale (Baker et al., 2014; Han et al., 2009). Subjects were asked to respond on a seven-point Likert-type scale to the following three items (strongly disagree = 1; strongly agree = 7): "it is acceptable to pay more for this type of entrée/dessert," "I am willing to pay more for this type of entrée/dessert," and "I am willing to spend extra money for this type" (entrée study: $\alpha = .90$ / dessert study: $\alpha = .88$). In addition, two open-ended items were included (Wansink, 2001). Subjects were asked to respond to the following two items: "What do you think the price is for this entrée or dessert item?" and "For this menu label, I am willing to spend a maximum of ___ dollars and ___ cents." The "willingness to pay more" variable equaled the "expected price for this food item" subtracted from the "maximum amount of money willing to pay" for the descriptive menu item (resulting in extra money paid for this menu label item).

Experimental realism. Regarding experimental realism, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following items: "this food item could be seen on an actual restaurant menu" and "if I were at a restaurant, I would be very likely to order this food item."

Sample and entrée adequacy. To assess sample adequacy, subjects were asked to respond on a seven-point Likert-type Scale (strongly disagree = 1; strongly agree = 7) to the following item: "on average, how many times per year do you eat at restaurants?" To measure entrée adequacy, the following item was included: "typically, I have a preference for this menu item as a food choice in a restaurant?"

Demographic variables. Some basic demographic items were measured, including the participants' genders, ages, and ethnic backgrounds.

3.5. Summary

This chapter presents the methodology of the pretests to develop experimental stimuli and explicate the validity of realism of the manipulated variables. Based on the results of the pretests, experimental design, experimental stimuli and measurement variables of the main study were described in detail. Chapter 4 reports the results of the main study.

CHAPTER 4. RESULTS OF THE MAIN STUDY

4.1. Overview

In this chapter, the results of the data analysis of the main study and hypothesis testing are presented. First, this chapter provides the demographic information of the respondents, measures, manipulation checks. Then, the results of the hypothesis testing in two menu contexts are presented using a series of analyses of covariance and multiple hierarchical regression.

4.2. Demographic Profile of Participants

A total of 239 questionnaires were completed for the entrée experiment and 261 responses were gathered for the dessert experiment. For the entrée study, 43.5% of the participants were female and 78.2% Caucasians. The mean age of the participants was 43.6 years. Regarding education, 57.4% of percent of the participants held an associate's degree or higher. Likewise, for the dessert study, 42.5% of the respondents were female and 78.5% Caucasians. The mean age of the respondents was 45.6 years, and 63% held an associate's degree or higher. Table 4.1. presents the demographic profiles of the respondents for both the entrée study and dessert study. In addition, the results of Pearson's chi-square tests show no statistically significance differences in gender (χ^2 (1, 496) = .05, p = .82), age (χ^2 (5, 497) = 4.45, p = .49), ethnicity (χ^2 (5, 499) = 4.93, p = .42), or education (χ^2 (5, 494) = 5.50, p = .36); therefore, the respondents' demographics did not differ between the two studies.

Table 4. 1. Main Study Demographic Profile of Respondents

Characteristics	Entrée Names (N= 239)		Dessert Names (N = 261)	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	134	56.5%	149	57.5%
Female	103	43.5%	110	42.5%
Age				
18–24 years	13	5.5%	11	4.2%
25–34 years	54	22.7%	68	26.3%
35–44 years	85	35.7%	85	32.8%
45–54 years	16	6.7%	16	6.2%
55-64 years	25	10.5%	18	6.9%
65 years or older	45	18.9%	61	23.6%
Ethnicity				
African-American	16	6.7%	21	8.1%
Asian	16	6.7%	11	4.2%
Caucasian	187	78.2%	204	78.5%
Hispanic	16	6.7%	14	5.4%
Other	4	1.7%	10	3.1%
Education				
Less than high school diploma	5	2.1%	7	2.7%
High school diploma	37	15.7%	44	17.0%
Some college, but no degree	58	24.7%	44	17.0%
Associate's degree	21	8.9%	30	11.6%
Bachelor's degree	85	36.2%	94	36.3%
Graduate degree	29	12.3%	40	15.4%

4.3. Menu Item Ordered

Evaluations of the consumption habits of the participants were conducted using descriptive statistics. The participants ordered their one entrée item within the range of 4.6% (Eggplant) to 32.2% (Ribeye Steak) frequency in the main study. Dessert items were selected between 9.2% (Peach Cobbler) and 36.4% (Chocolate Ice Cream Cake). Table 4.2. provides the frequency and percent of the entrée and dessert items as they were ordered by the participants in the main study.

Table 4. 2. Frequency of Entrée / Dessert Items Ordered in the Main Study

Entrée Study	
Entrée Items	**Frequency (Percent)**
Rotisserie Chicken	29 (12.1 %)
BBQ Ribs	47 (19.7 %)
Ribeye Steak	77 (32.2 %)
Pasta	28 (11.7%)
Salmon	31 (13.0 %)
Shrimp Linguine	16 (6.7%)
Eggplant	11 (4.6%)

Dessert Study	
Dessert Items	**Frequency (Percent)**
Chocolate Ice Cream Cake	95 (36.4%)
Apple Pie	54 (20.7%)
Cheesecake	88 (33.7%)
Peach Cobbler	24 (9.2%)

4.4. Manipulation Checks

Manipulation checks were conducted for sensory names, nostalgic names, and brand names as well as experimental realism and are described below.

4.4.1. Sensory names

To check the efficacy of the sensory name manipulation, an independent sample t-test and Analysis of Variance (ANOVA) tests on the sensory response measures were performed between the four conditions (i.e., general names, sensory names, nostalgic names, and brand names) and across the two menu contexts (i.e., entrées and desserts).

For the entrée experiment, as expected, the participants in the sensory name condition rated the entrées as tastier, better smelling, and more satisfactory mouth feeling items than participants in the general name condition ($M_{\text{sensory entrée names}} = 5.17$ vs. $M_{\text{general entrée names}} = 4.32$; $t\ (119) = 3.86$, $p = .000$). In addition, one-way ANOVA analysis was conducted to test the efficacy of the sensory name manipulation compared to other conditions. Results show significant differences in composite sensory responses (to the taste, smell, and mouth feel of the items) across the four descriptive names (i.e., general names, sensory names, nostalgic names, and brand names; $F_{(3, 235)} = 4.89$, $p = .003$). Paired comparisons indicate that the sensory entrée name manipulation led to a higher level of sensory response than any other type of descriptive name manipulation ($M_{\text{sensory entrée names}} = 5.17$, SD = 1.02 vs. $M_{\text{general entrée names}} = 4.32$, SD = 1.36, $p = .001$; $M_{\text{nostalgic entrée names}} = 4.60$, SD = 1.26, $p = .02$; $M_{\text{brand entrée names}} = 4.43$, SD = 1.61, $p = .003$); therefore, the sensory entrée name manipulation was proven effective.

For the dessert experiment, as expected, the results of an independent sample t-test indicated that subjects in the sensory name condition showed a higher sensory response (to taste, smell, and mouth feel) than those in the general name condition ($M_{\text{sensory dessert names}} = 5.34$ vs. $M_{\text{general dessert names}} = 4.82$; $t\ (119) = 2.60$, $p = .011$). In addition, results of ANOVA tests indicate significant sensory response differences among the four conditions ($F_{(3, 257)} = 2.63$, $p = .05$). More specifically, paired comparisons show that the sensory dessert name manipulation elicited a higher level of sensory response compared to the other manipulations ($M_{\text{sensory dessert names}} = 5.34$, SD = 1.17 vs. $M_{\text{general dessert names}} = 4.82$, SD = 1.10, $p = .05$; $M_{\text{nostalgic dessert names}} = 4.92$, SD = 1.41, $p = .02$; $M_{\text{brand dessert names}} = 4.81$, SD = 1.25, $p = .02$); hence, the sensory dessert name manipulation was deemed successful.

Furthermore, to check the difference in the sensory name manipulation across the two menu contexts (i.e., entrées vs. desserts), a one-way ANOVA test was conducted. Results show that the sensory responses were different between the entrée items and dessert items ($F_{(1, 498)} = 8.67$, $p = .003$; $M_{\text{entrées}} = 4.63$, SD = 1.36 vs. $M_{\text{desserts}} = 4.98$, SD = 1.25). Collectively, the results of a series of independent sample t-tests and ANOVA tests suggest that the manipulation of the salience of the sensory names was strong in each menu context (i.e., entrées and desserts); however, there was a difference in the sensory name manipulations between the different menu contexts (Wansink et al., 2004; Wansink et al., 2005). Therefore, the hypothesis testing results are reported separately for the two menu contexts.

4.4.2. Nostalgic names

Manipulation checks for nostalgic names were conducted using a series of independent sample t-tests and ANOVA tests. For the entrée experiment, as expected, the participants in the nostalgic name condition felt the entrée items evoked much stronger feelings of family and tradition than their counterparts in the general name condition ($M_{\text{nostalgic entrée names}} = 5.74$ vs. $M_{\text{general entrée names}} = 4.18$; $t\ (119) = 7.27$, $p = .000$); moreover, the one-way ANOVA results indicate that the nostalgia responses were different among the four descriptive menu labels ($F_{(3, 235)} = 14.43$, $p = .000$). Paired comparisons also show that the nostalgic entrée name manipulation led to a stronger feeling of family and tradition than each of the other descriptive labels ($M_{\text{nostalgic entrée names}} = 5.74$, SD = 1.05 vs. $M_{\text{general entrée names}} = 4.18$, SD = 1.30, $p = .000$; $M_{\text{sensory entrée names}} = 4.34$, SD = 1.58, $p = .000$; $M_{\text{brand entrée names}} = 4.50$, SD = 1.79, $p = .000$); thus, the nostalgic entrée name manipulation was proven successful.

For the dessert experiment, similarly, the participants in the nostalgic name condition reported the desserts as conveying stronger feelings of family and tradition than those in the general name condition ($M_{\text{nostalgic dessert names}} = 5.56$ vs. $M_{\text{general dessert names}} = 4.74$; $t\ (128) = 3.57$, $p = .001$). In addition, ANOVA tests indicate that the participants in the nostalgic name manipulation also felt the dessert items involved stronger feelings of family and tradition than their counterparts in the other descriptive labels ($F_{(3, 257)} = 7.72$, $p = .000$). Furthermore, paired comparisons show that the nostalgic name manipulation led to a stronger nostalgic response than each of the other name manipulations ($M_{\text{nostalgic dessert names}} = 5.56$, SD = 1.26 vs. $M_{\text{general dessert names}} = 4.74$, SD = 1.35, $p = .002$; M_{sensory}

$_{\text{dessert names}}$ = 4.42, SD = 1.84, p = .000; $M_{\text{brand dessert names}}$ = 4.67, SD = 1.31, p = .001); therefore, the nostalgic dessert name manipulation was successful.

Finally, an ANOVA test on the nostalgic name manipulations was performed in different menu contexts (i.e., entrées and desserts) as a between-subjects factor. The one-way ANOVA test results show that the effect of the menu context was also insignificant ($F_{(1, 498)}$ = 1.41, p = .24; $M_{\text{entrées}}$ = 4.69, SD = 1.57 vs. M_{desserts} = 4.85, SD = 1.52). Taken together, the results suggest that the manipulation of the nostalgic names was successful.

4.4.3. Brand names

A series of independent sample t-tests and ANOVA tests was performed to check the efficacy of the brand name manipulation. For the entrée experiment, as expected, the participants in the brand name condition perceived the entrée items as containing a brand name compared to those in the general name ($M_{\text{branded entrée names}}$ = 5.81 vs. $M_{\text{general entrée names}}$ = 3.49; t (115) = 7.82, p = .000). In addition, the participants in the brand name condition perceived the entrées to comprise brand name affiliations more often compared to the other three descriptive names ($F_{(3, 232)}$ = 24.62, p = .000). Furthermore, paired comparisons indicate that the effects of the brand manipulation for the brand entrée names were different from those in each of the other descriptive names ($M_{\text{branded entrée names}}$ = 5.81, SD = 1.36 vs. $M_{\text{general entrée names}}$ = 3.49, SD = 1.81, p = .000; $M_{\text{sensory entrée names}}$ = 3.20, SD = 2.08, p = .000; $M_{\text{nostalgic entrée names}}$ = 3.86, SD = 1.93, p = .000); therefore, the brand entrée name manipulation was proven effective.

For the dessert experiment, similarly, the participants in the brand name condition rated the items as branded to a greater degree than those in the general name condition

($M_{\text{branded dessert names}}$ = 6.03 vs. $M_{\text{general dessert names}}$ = 3.74; t (124) = 8.24, p = .000). In addition, the participants in the brand name condition rated the dessert items to be associated with a brand name to a greater degree than their counterparts in the other descriptive labels ($F_{(3, 254)}$ = 22.22, p = .000); moreover, the effects of the brand name manipulations were stronger compared to each of the other descriptive labels ($M_{\text{branded dessert names}}$ = 6.03, SD = .96 vs. $M_{\text{general dessert names}}$ = 3.74, SD = 1.99, p = .000; $M_{\text{sensory dessert names}}$ = 3.67, SD = 2.22, p = .000; $M_{\text{nostalgic dessert names}}$ = 4.50, SD = 1.98, p = .000). Therefore, the brand dessert name manipulation was proven successful.

Regarding menu contexts, however, there was a difference in the brand name manipulations ($F_{(1, 492)}$ = 4.87, p = .03; $M_{\text{entrées}}$ = 4.08, SD = 2.07 vs. M_{desserts} = 4.49, SD = 2.07). That is, the efficacy of the brand manipulation was stronger in the dessert context than in the entrée context; thus, the results of the hypothesis testing are reported in the two menu contexts separately.

Table 4.3. shows the manipulation checks for each of the experimental conditions across the two studies.

Table 4. 3. Manipulation checks for descriptive food names

Menu Context	Descriptive Food Names; M (SD)				
Entrée study (N = 239)	Manipulations	Usual names (N = 61)	Sensory names (N = 60)	Nostalgic names (N = 60)	Brand names (N = 58)
	Sensory	4.32 (1.36)	5.17 (1.02)	4.60 (1.26)	4.43 (1.61)
	Nostalgic	4.18 (1.30)	4.34 (1.58)	5.74 (1.05)	4.50 (1.79)
	Brand	3.49 (1.81)	3.20 (2.08)	3.86 (1.93)	5.81 (1.36)

Dessert study (N = 261)	Manipulations	Usual names (N = 62)	Sensory names (N = 66)	Nostalgic names (N = 68)	Brand names (N = 65)
	Sensory	4.82 (1.10)	5.34 (1.17)	4.92 (1.41)	4.81 (1.25)
	Nostalgic	4.74 (1.35)	4.42 (1.84)	5.56 (1.26)	4.67 (1.31)
	Brand	3.74 (1.99)	3.67 (2.22)	4.50 (1.98)	6.03 (.96)

4.5. Experimental Realism and Sample Adequacy

The experimental realism and the adequacy of the sample population were assessed in the main study. The participants in the experiments indicated that the food items could be seen on an actual restaurant menu. The menu items used in the experiments earned mean realism ratings of 5.56 (entrée experiment) and 5.61 (dessert experiment). In addition, the respondents indicated that they had a preference for their chosen entrée (M = 5.34) or dessert item (M = 5.38) when presented food choice at a restaurant. Furthermore, the participants revealed that if they were at a restaurant, then they would be likely to order their chosen menu item (entrée experiment: M = 5.56; dessert experiment: M = 5.52). Regarding the adequacy of the sample, of the respondents, all claimed to eat at restaurants at least two times per year, and 50 percent claimed to dine at restaurants more than 24 times per year. These figures serve as evidence that this sample population adequately relates to the experimental setting. Overall, the manipulations were deemed realistic and appropriate concerning the experiments and sample population.

4.6. Hypothesis Testing

In the main study, the between-subjects factorial was replicated in two menu contexts (entrées and desserts); therefore, in the following sections, the results of the hypothesis testing in these two contexts are reported separately.

4.6.1. Experiment 1: Entrée Menu Context

A series of Analysis of Covariance (ANCOVAs) tests were performed to test Hypothesis 1, Hypothesis 2, and Hypothesis 3. The associated homogeneity assumptions were tested before conducting the ANCOVA models. The results of the Levene's Tests were insignificant (all *ps* > .29), suggesting that the equalities of error variances across the different experimental conditions were assumed. A covariate of "emotional attachment" was significant in all of the ANOVA models reported in the entrée study (all $p = .000$). Regarding Hypothesis 4 and Hypothesis 5, hierarchical multiple regression analyses were performed using the residuals of the variables produced by the ANOVA procedures. Residuals were used in the regression analyses to remove the direct effects of menu labels on warmth/competence and anticipated satisfaction/willingness to pay more due to the experimental manipulations. All assumptions with regard to the hierarchical regression analyses were also met (i.e., linearity of relationships, homoscedasticity, normality, and lack of outliers).

Hypothesis 1 predicted that consumers would perceive a restaurant with sensory menu labels as being warmer than a restaurant that utilized general menu (not sensory) labels. An ANCOVA test with "perceived warmth" as the dependent variable, "sensory names" (vs. "general names") as the independent variables, and "emotional attachment"

as the control variable revealed a significant main effect of sensory names ($F(2, 118) = 5.09$, $p = .02$). As expected, the participants in the sensory condition perceived the restaurant to be warmer ($M_{sensory} = 5.00$, $SD = 1.24$) than those in the general condition ($M_{general} = 4.39$, $SD = 1.17$); therefore, Hypothesis 1 was supported.

Hypothesis 2 proposed that consumers would perceive a restaurant with nostalgic menu labels as being warmer than a restaurant with general labels. To test this hypothesis, an ANCOVA test was performed on "perceived warmth" as the dependent variable, "nostalgic/general names" as the predictors, and "emotional attachment" as the control variable. The ANCOVA results showed that the main effect of nostalgic menu labels was statistically significant ($F(2, 118) = 17.40$, $p = .000$). Respondents who saw nostalgic menu labels perceived the restaurant to be warmer ($M_{nostalgic} = 5.26$, $SD = 1.06$) than those who saw general menu labels ($M_{general} = 4.39$, $SD = 1.17$); hence, Hypothesis 2 was supported.

Hypothesis 3 stated that consumers exposed to brand menu labels would perceive a restaurant as being more competent than those exposed to general menu labels. An ANCOVA test with "perceived competence" as the dependent variable, "brand/general names" as the independent variables, and "emotional attachment" as the control variable elicited a significant main effect for brand names ($F(2, 115) = 4.06$, $p = .04$). The participants in the brand condition reported higher mean competence ratings ($M_{brand} = 5.05$, $SD = 1.15$) than those in the general condition ($M_{general} = 4.44$, $SD = 1.28$); thus, Hypothesis 3 was supported.

Hypothesis 4 predicted that "perceived warmth" would garner a higher rating in "anticipated satisfaction" than in "competence" impressions in menu-selection situations.

To test this hypothesis, hierarchical multiple regression procedures were applied using the residuals of the variables produced by the ANOVA procedures. The residuals of warmth and competence were modeled as independent variables in the hierarchical regression analyses. To control for the effect of descriptive labels on anticipated satisfaction, the residuals for anticipated satisfaction were also modeled as dependent variables in the analyses. In other words, the residuals for anticipated satisfaction were regressed on the residuals of "competence" and "warmth" in the hierarchical model. For the first stage, the control variable (the residuals of competence) was entered. For the second stage, the residuals of warmth were added to the model. A significant increment in R^2 would indicate that the residuals of warmth contributed to anticipated satisfaction after competence was accounted for. As expected, the results showed a significant increase in R^2 (ΔR^2 =.19, $F(1, 235) = 67.87$, $p = .000$). The direction and magnitude of the relationship were positive and strong ($\beta = .51$, $t = 8.24$, $p = .000$). That is, in menu-selection situations, the participants' anticipated satisfaction was more influenced by the participants' perceived warmth than by their perceived competence. Taken together, Hypothesis 4 was supported.

Hypothesis 5 proposed that "perceived competence" would lead to a higher level of "willingness to pay more" than would "perceived warmth" in menu-selection situations. The residuals for willingness to pay more were regressed on the residuals of "warmth" and "competence" in the model. For the first step, the residuals of warmth were entered as a predictor for the residuals of willingness to pay more in the hierarchical model. The results indicated that the residuals of "competence" contributed more to the residuals for "willingness to pay more" than did the residuals of "warmth" in the

hierarchical analyses (ΔR^2 =.13, F(1, 230) = 42.81, p = .000). As predicted, the direction and magnitude of the relationship were positive and strong (β = .53, t = 6.54, p = .000). That is, the higher the perceived competence the participants indicated, the more likely they were willing to pay more; thus, Hypothesis 5 was supported. The results of the individual analyses of covariance (ANCOVAs) and hierarchical regression analyses using the residuals of the variables reported in Experiment 2 are described in Table 4.4, Table 4.5, and Table 4.6.

Table 4. 4. Experiment 1: ANCOVA Results Regarding H1, H2, and H3

	H1, H2, and H3	
Variables	*F* Value	Significance
Sensory labels (Sensory vs. no sensory)	5.09	.02
Nostalgic labels (Nostalgic vs. no nostalgic)	17.40	.000
Brand labels (Brand vs. no brand)	4.06	.04

Table 4. 5. Experiment 1: Hierarchical Multiple Regression Results Regarding H4

	Anticipated Satisfaction	
	Stage 1	Stage 2
Competence	.35***	.08
Warmth		.51***
R^2	.14	.33

ΔR^2	.19
F for R^2	67.87^{***}

$^{***}p < .000$.

Table 4. 6. Experiment 1: Hierarchical Multiple Regression Results Regarding H5

	Willingness to Pay More	
	Stage 1	Stage 2
Warmth	$.56^{***}$	$.27^{*}$
Competence		$.53^{***}$
R^2	.19	.32
ΔR^2		.13
F for R^2		42.81^{***}

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

4.6.2. Experiment 2: Dessert Menu Context

Prior research posited that the influences of descriptive menu labels on impressions might differ regarding dessert items relative to entrée items. That is, dessert items might be inherently driven by names more so than entrée items because they might be at an evaluation ceiling (Wansink et al., 2005); therefore, the hypotheses tested in the entrée menu context were replicated in the dessert menu context.

As with Experiment 1, H1, H2, and H3 were tested using individual analyses of covariance (ANCOVAs) with "social impressions" as the dependent variable,

"descriptive menu labels" as the independent variable, and "emotional attachment" as the covariate. Emotional attachment, a control variable, was significant in all of the ANCOVA models reported in the dessert experiment (all $p = .000$). The homogeneity assumption was met in all of the ANCOVA models (all $p = .40$). In addition, hierarchical multiple regression analyses were performed to test H4 and H5 while meeting the assumptions associated with the regression analyses (i.e., linearity of relationships, homoscedasticity, normality, and lack of outliers).

Unlike the data for the entrée context, the data for the dessert context did not support Hypothesis 1's prediction. ANCOVA results revealed an insignificant main effect of "sensory labels" on "warmth" for the dessert menu items (F (2, 125) = .79, p = .37). The means were in the expected direction, indicating that the participants in the sensory name condition reported higher mean warmth ratings ($M_{\text{sensory}} = 4.87$, $SD = 1.38$) than did those in the general condition ($M_{\text{general}} = 4.77$, $SD = 1.25$).

Like in Experiment 1, however, Hypothesis 2 was supported in this experiment. ANCOVA results showed that nostalgic labels were statistically significant in the dessert context ($F(2, 127) = 8.56$, $p = .004$). The mean warmth for the nostalgic name condition was 5.39 ($SD = 1.14$) compared with 4.77 ($SD = 1.25$) for the general name condition without the provision of nostalgic names; hence, consumers perceived a restaurant with nostalgic labels to be warmer than a restaurant with general menu (not nostalgic) labels.

Regarding Hypothesis 3, ANCOVA results indicated a significant main effect of "brand labels" on "competence" in the dessert context (F (2, 124) = 9.45, p = .003). As expected, the mean restaurant competence score for the brand label condition ($M_{\text{brand}} =$ 5.38, $SD = 1.09$) was higher than the mean score for the general label condition (M_{general}

= 4.71, *SD* = 1.23). These results showed that dessert items containing brand names led consumers to perceive a restaurant to be more competent than did those containing general names. Taken together, as in the entrée context, Hypothesis 3 was supported in the dessert context. The results of the series of ANCOVA tests in Experiment 2 are presented in Table 4.9.

Hypothesis 4 was supported in the dessert context. To remove the direct effects of menu labels due to the experimental manipulations, a hierarchical regression procedure was employed using the residuals of the variables produced by the ANOVA procedures. Hierarchical regression results indicated a significant increment in R^2 when the residuals of "warmth" was added in a hierarchical fashion (ΔR^2 =.06, F (1, 258) = 22.19, p = .000). In addition, the direction and magnitude of the relationship were positive and strong (β = .27, t = 4.71, p = .000). Taken together, in dessert menu selections, warmth-related impressions had a stronger positive effect on "anticipated satisfaction" than had competence-related impressions.

Regarding Hypothesis 5, a significant increase in R^2 indicated that the residuals of "competence" contributed more to the residuals for "willingness to pay more" than did residuals of "warmth" in the hierarchical analyses (ΔR^2 =.15, F (1, 258) = 62.11, p = .000). In addition, the direction and magnitude of the relationship were strongly positive (β = .59, t = 7.88, p = .000). That is, consumers' willingness to pay more was more strongly influenced by their perceived competence than by their perceived warmth; hence, Hypothesis 5 was supported in Experiment 2. The results of the individual analyses of covariance (ANCOVAs) and hierarchical regression analyses using the

residuals of the variables reported in Experiment 2 are described in Table 4.7, Table 4.8, and Table 4.9.

Table 4. 7. Experiment 2: ANCOVA Results Regarding H1, H2, and H3

	H1, H2, and H3	
Variables	*F* Value	Significance
Sensory labels (Sensory vs. no sensory)	.79	.37
Nostalgic labels (Nostalgic vs. no nostalgic)	8.56	.004
Brand labels (Brand vs. no brand)	9.45	.003

Table 4. 8. Experiment 2: Hierarchical Multiple Regression Results Regarding H4

	Anticipated Satisfaction	
	Stage 1	Stage 2
Competence	.40***	.23***
Warmth		.27***
R^2	.24	.30
ΔR^2		.06
F for R^2		22.19***

*** $p < .000$.

Table 4. 9. Experiment 2: Hierarchical Multiple Regression Results Regarding H5

	Willingness to Pay More	
	Stage 1	Stage 2
Warmth	.60***	.19*
Competence		.60***
R^2	.23	.38
ΔR^2		.15
F for R^2		62.11***

*$p < .05$, ***$p < .001$.

4.7. Summary

This chapter presented the results of the main study and hypothesis testing. First, this chapter provided the results of the main study, including the demographic profile of the participants, the measures, and the manipulation checks. In the chapter, the ANCOVAs and multiple hierarchical regression results were also discussed. Table 4.10. presents a summary of the results of the hypothesis testing in the two menu contexts.

Table 4. 10. Results of Hypothesis Testing

Hypothesis	Entrée Experiment	Dessert Experiment
H1: Sensory names can yield a greater magnitude of warmth-related impressions compared to general names.	Supported	Not supported
H2: Nostalgic names can yield a greater magnitude of warmth-related impressions compared to general names.	Supported	Supported
H3: Brand names can yield a greater magnitude of competence-related impressions compared to general names.	Supported	Supported
H4: Warmth-related impressions have a more positive effect on anticipated satisfaction than have competence-related impressions.	Supported	Supported
H5: Competence-related impressions can yield greater willingness to pay relative to warmth-related impressions.	Supported	Supported

CHAPTER 5. DISCUSSION AND CONCLUSIONS

This chapter begins with an overview of the present empirical study, followed by a discussion of the results. Next, the chapter addresses the theoretical and managerial implications of the findings. Finally, the chapter concludes with limitations and suggestions for future research.

5.1. Overview of Empirical Study

The present empirical study applied conceptual metaphor and social impression theories to investigate how descriptive menu labels influence consumers' perceived warmth and competence of a restaurant. In addition, this study examined how perceived warmth and competence affect different magnitudes of attitude (anticipated satisfaction) and behavioral intention (willingness to pay more).

The empirical investigation comprised two pretests and one main study. The two pretests were conducted to develop experimental stimuli for the main study. The main study was conducted to test the proposed hypotheses. In the main study, descriptive menu labels were experimentally manipulated. Consumers' perceived warmth, perceived competence, emotional attachment, anticipated satisfaction, and willingness to pay more were measured. Hypotheses were tested in two menu contexts: an entrée menu vs. a dessert menu.

The results of the empirical investigation suggest that descriptive labels in a restaurant menu do transmit signals that influence consumers' impending social impressions. Consumers perceived a restaurant with descriptive menu labels as being warmer and/or more competent than a restaurant with general menu labels. Furthermore,

the findings suggest that consumers' perceived warmth served a more important role in their anticipated satisfaction than did their perceived competence. Conversely, regarding willingness to pay more, perceived competence acted as a more significant factor than did perceived warmth. The replications of the results across the two menu contexts demonstrate the robustness of the findings; however, there was a different pattern observed for the effects of sensory labels on consumers' perceived warmth in the dessert menu context. In the following sections, discussion of results, theoretical and managerial implications, as well as limitations and suggestions for future research are presented.

5.2. Discussion of the Results

5.2.1. Sensory Names

The results of the entrée study support the hypothesis that sensory menu labeling yields a greater magnitude of warmth-related impressions compared to general menu labeling. This finding is consistent with the prediction of conceptual metaphor theory (Landau et al., 2010), suggesting that sensory descriptors (linguistic metaphors) can shape how consumers perceive social judgments regarding their impending restaurant service experiences (social information processing). Previous research has shown that sensory descriptions, compared to general descriptions, lead consumers to perceive food as more tasty due to the heightened sensory-related thoughts driven by sensory descriptors (Davis et al., 2013; Imm et al., 2012; Wansink et al., 2001); however, extant literature has devoted scant attention to the influences of sensory menu labels on consumers' perceived warmth. Counter to what one might expect, sensory names allow

consumers to perceive a restaurant with the provision of sensory labels to be warmer than a restaurant service with the provision of general labels.

The findings in the present study's entrée context were replicated in the dessert menu context; however, the effects of the sensory labels on warmth-related perceptions were different across the two menu contexts. An explanation for this pattern of difference follows: dessert items might be less influenced by names than entrée items because dessert names already comprise an evaluation ceiling (Wansink et al., 2005). This postulation was upheld in the data from the main study across the two contexts. While sensory responses positively related to warmth-related impressions (t (1, 247) = 13.90, p = .000), dessert names (M = 4.32) were inherently expected to be more sensory compared to entrée names (M = 4.82; F (1, 121) = 4.93, p = .028). These findings are noteworthy because they provide empirical evidence for the differential effects of sensory effects on perceived warmth in the two menu contexts; therefore, the findings suggest that sensory labeling is more effective at affecting consumers' perceived warmth in entrée menu contexts than it is in dessert menu contexts.

5.2.2. Nostalgic Names

The findings of the present empirical investigation demonstrate that a restaurant with nostalgic menu labeling is perceived to be warmer than a restaurant with general labeling through consumers' mindsets. These results were robust across the two menu contexts. Despite limited empirical evidence, prior research has postulated that nostalgic labels can elicit nostalgic thoughts of family and tradition without the provision of manipulation checks (Guéguen & Jacob, 2012). In the main study, the results of the

manipulation checks suggest that nostalgic menu labels lead consumers to elicit strong nostalgic thoughts of home, tradition, and belonging. In addition, the nostalgic labeling manipulations were not different across the two menu contexts (F (1, 249) = 1.50, p = .22); therefore, nostalgic labeling can be used to prompt consumers' perceived warmth in both entrée and dessert menu contexts.

More importantly, the results provide empirical evidence for nostalgic menu labels serving as proxy for a restaurant's warmth. Prior research focusing on nostalgic menu labeling has linked nostalgic names and taste-related perceptions because consumers might feel nostalgia for food items (Guéguen & Jacob, 2012; Wansink et al., 2001). Unlike prior empirical studies, the findings of this study establish a link between nostalgic labeling and perceived warmth, thereby extending food service research. These findings are also consistent with the prediction of conceptual metaphor theory (Landau et al., 2010) because language choices (nostalgic descriptions) can elicit social judgments (social impression processing).

Furthermore, it is prudent to note that the nostalgia-triggering effect is particularly relevant to warmth rather than to competence. In support, follow-up ANCOVA tests were conducted on "competence" as a dependent variable, "nostalgic names" as independent variables, and "emotional attachment" as a control variable. The ANCOVA results indicate an insignificant main effect for nostalgic names on perceived competence in both the entrée and dessert menu contexts (entrée menu: F (2, 117) = 2.29, p = .13; dessert menu: F (2, 127) = 3.34, p = .07); therefore, this empirical study is the first to show how consumers' social impressions are shaped based on nostalgic menu labels.

5.2.3. Brand Names

The results of the present empirical study support brand menu labels yielding a greater magnitude of competence-related impressions compared to general menu labeling. Replication of the results also demonstrates the robustness of the findings across the two menu contexts. Follow-up ANCOVA tests with "emotional attachment" as the control variable were also conducted to determine whether brand names could also generate salient warmth impressions compared to general names. The results show an insignificant effect for brand labels on perceived warmth across the two menu contexts (entrée menu: F (2, 116) = .67, p = .42; dessert menu: F (2, 124) = 1.33, p = .25); therefore, brand names used in menus are not a strong predictor of perceived warmth, while brand names *are* a powerful source of perceived competence. These findings are also consistent with Aaker et al.'s empirical study (2010), suggesting that for-profit brands tend to relate to consumers' perceived competence regarding a firm but tend to be devoid of perceived warmth. Consistent with "brand" as an intentional agent framework (BIAF) (Fiske et al., 2012), this empirical study finds that a restaurant's commercial brand induces a competence metaphor (performance-related images).

5.2.4. Anticipated Satisfaction

The results of the present study support the hypothesis that warmth-related impressions have a more positive effect on anticipated satisfaction than have competence-related impressions during menu-selection situations. The replications across the two menu contexts bolster the generalizability of these findings. In addition, follow-up moderated mediation analyses (Hayes, 2012) were conducted to validate the

hypothesized model of this dissertation, including the indirect effects of the sensory and nostalgic descriptions on anticipated satisfaction. The follow-up results confirm that warmth mediated the effects of sensory and nostalgic labels on anticipated satisfaction in the two menu contexts; therefore, consumers show higher levels of anticipation because they are likely to view sensory and nostalgic labels as the restaurant's services signaling warmth, kindness, and generosity.

The present study is among pioneering endeavors to examine the differential effects of warmth and competence on anticipated satisfaction in a restaurant menu-selection situation. Consistent with the prediction of the social impression model (Cuddy et al., 2008), under certain conditions, warmth and competence elicit different magnitudes of attitude, such as anticipated satisfaction. Prior research has shown that descriptive menu labels have a positive effect on post-consumption satisfaction; however, the influences of *anticipated* satisfaction are largely unexplored in the existing body of menu research. More importantly, prior research has made a direct association between descriptive menu labels and satisfaction. Unlike prior research, the present study considers a mediating factor (social impressions) to offer important insights regarding how certain menu labels lead to anticipated satisfaction through social impressions.

Furthermore, emerging research has been conducted in other contexts (corporate social responsibility) to provide evidence regarding warmth and competence impressions on anticipated satisfaction (Bolton & Mattila, 2015; Gao & Mattila, 2014). This area of research has shown that both warmth and competence are important factors for satisfaction; however, there has been no evidence as to what factor would be more critical in eliciting consumers' greater satisfaction during their restaurant menu selections.

Interestingly, the present study shows that warmth explains a significant amount of variation in anticipated satisfaction beyond that explained by competence; hence, these findings indicate the relative importance of warmth on anticipated satisfaction.

5.2.5. Willingness to Pay More

The findings of the present study demonstrate that competence-related impressions yield greater willingness to pay relative to warmth-related impressions. These results were robust across the two menu contexts. Furthermore, the results of the follow-up mediation tests (Hayes, 2012) indicate that competence mediates the effects of brand labels on willingness to pay more, which supports the rationale behind the hypothesized model of this study; thus, consumers exposed to brand menu labels are more likely to report a higher willingness to pay than are those exposed to general menu labels because brand names cultivate competence-related impressions through consumers' minds.

Whether descriptive menu labels induce in consumers a greater willingness to pay more is currently unknown because findings have been mixed. While there is empirical evidence of the effects of descriptive menu labels on willingness to pay more, another study found no significant effects (Guéguen & Jacob, 2012; Wansink et al., 2005); therefore, the present study reconciles these mixed findings of prior studies and suggests that competence is an essential factor that leads to greater willingness to pay more because commercial branding is particularly associated with competence rather than with warmth (Valta, 2013)

Moreover, there has been limited empirical evidence showing the importance of competence relative to warmth in willingness to pay more. Previous research has examined the effects of warmth/competence on attitude (satisfaction); however, little is known about warmth/competence as a key determinant of willingness to pay more (Bolton & Mattila, 2015; Gao & Mattila, 2014). Interestingly, when considering warmth- and competence-triggering effects, the present study shows that competence is a more salient factor in willingness to pay more, whereas warmth is a more essential factor in expected satisfaction. Specifically, both warmth and competence lead to a greater willingness to pay, but competence impressions trump warmth in willingness to pay more. These findings are consistent with the prediction of the social impression model (Cuddy et al., 2008), which suggests that warmth/competence can inversely relate to the magnitude of attitudes and behavioral intentions under certain contexts; hence, the present study fills a gap in the existing research, showing the potential inversed magnitudes of satisfaction and willingness to pay more driven by warmth/competence.

5.3. Theoretical Implications

This dissertation contributes to menu labeling and service management literature in several important ways. First of all, this research represents an early attempt to theorize and evaluate warmth and competence to explain the effects of descriptive menu labels on social impressions. Extant research has shown links between descriptive menu labels and food-specific perceptions (food taste perceptions); however, unlike prior research, grounded in metaphoric transfer theory (Landau et al., 2010), the present study demonstrates previously unrelated links between descriptive menu labels and impending

social impressions in a restaurant. That is, a menu containing descriptive menu labels can be viewed as an anthropomorphizing factor because consumers attribute impressions of warmth and competence to menu labels. In particular, the findings indicate that certain attributes driven by different descriptive sources manifest in different forms of impending social impressions. Specifically, sensory and nostalgic labeling is metaphorically embodied in warmth-related impressions, whereas brand labeling is metaphorically embodied in competence-related impressions (sensory and nostalgic labeling → warmth-related impressions / brand labeling → competence-related impressions); therefore, the theoretical contribution of this research study is its early recognition of the dynamics of menu- design-element to impeding-social-impression management in a restaurant.

The present research indicates that sensory labels elicit impressions of better taste, better smell, and more satisfactory mouth feeling than do general labels, which is consistent with previous research that has investigated the effects of sensory labeling (Davis et al., 2013; Imm Et al., 2012; Wansink et al., 2001). Interestingly, however, this study suggests that sensory labels are metaphorically embodied in warmth-related impending service impressions, which has not been explored in existing literature. In addition, this research demonstrates that contextual factors come into play regarding the effects of sensory descriptions on warmth-related impressions because dessert names already comprise an evaluation ceiling regarding sensory perceptions (Wansink et al., 2005); therefore, this study extends the prediction of conceptual metaphor theory (Landau et al., 2010) by suggesting that sensory descriptions (language choices) can have differential effects on warmth-related impressions (social judgments) in different menu contexts.

Furthermore, nostalgic menu labeling evokes much stronger feelings of family and tradition than does general labeling, which is consistent with previous research (Guéguen & Jacob, 2012; Wansink et al., 2001). The present study further suggests that nostalgic labels are metaphorically embodied in warmth-related service impressions, which has not been theorized in existing research (Guéguen & Jacob, 2012); therefore, the present study contributes to menu labeling and service management research by suggesting the existence of nostalgia-triggering warmth effects.

Moreover, brand menu labeling is metaphorically embodied in competence-related impending service impressions. Previous research has documented that a brand image influences five human-related personalities of a restaurant, which are sincerity, excitement, competence, sophistication, and ruggedness (Kim et al., 2011; Lee et al., 2009). To extend this branding research to a restaurant menu context, the present empirical study applies "brand" as an intentional agent framework (BIAF) (Fiske et al., 2012). Consistent with the prediction of BIAF, the present empirical study indicates that competence is strongly influenced by branded food names due to the for-profit metaphors associated with commercial brands used in menus. These findings are also consistent with Aaker et al.'s empirical study (2010), suggesting that for-profit brands tend to relate to consumers' perceived competence regarding a firm but tend to be devoid of perceived warmth. The results further support the prediction of conceptual metaphor theory. That is, branded menu labels (language choices) are strongly associated with a certain social-related metaphor because a restaurant's commercial brand triggers a competence metaphor (performance-related images); therefore, the present study deepens our

theoretical and empirical understandings of restaurant menu designs and brand-related perceptions.

Last, this study provides novel insight into warmth and competence impressions on anticipated satisfaction and willingness-to-pay-more. Prior research has shown that warmth and competence play an important role in satisfaction (Bolton & Mattila; Gao & Mattila, 2014). That is, the extant literature is scant regarding the simultaneous conceptualization of testing the relative importance of warmth and competence on satisfaction and willingness to pay more in a restaurant; however, in the present study, drawing upon the social impression model (Cuddy et al., 2008), the significance of these two dimensions was found to lie in their encompassing, but parsimonious, capacity to understand the inversed magnitudes of attitude and behavioral intention. That is, warmth trumps competence in consumers' attitude formations (anticipated satisfaction) toward a restaurant service, but competence exceeds warmth in consumers' behavioral intention formations (willingness to pay more); hence, the present study fills a gap found in the extant literature, and the empirical evidence revealed in this study sheds light on consumers' attitudes and behavioral intentions regarding service impression management in a restaurant.

5.4. Managerial Implications

This dissertation also has several important managerial implications for the food service industry. First, the findings from this dissertation suggest that consumers treat descriptive menus as social factors. Common sense dictates that menu labeling serves as an input factor when consumers form taste-perceptions of food items. Counter to what a

practitioner might expect, however, this study reveals that effective uses of descriptive menu labels can be a strategic resource that can be incorporated into service promises to instill warmth- and competence-related impressions. Specifically, consumers view a restaurant with sensory- and nostalgia-triggering descriptions as offering warmer services (i.e., with kindness, generosity, and understanding) but not as offering more competent services (i.e., with confidence, effectiveness, and efficiency); on the other hand, consumers view a restaurant with brand-related descriptions as providing more competent and skilled services but not as providing warmer services.

Food service operations usually invest a tremendous amount of time and money in offering warm and competent hospitality services through employee training and advertisements; however, changing descriptions on menus involves relatively little time/cost for practitioners. Therefore, practitioners should take into account the types of menu descriptions that are used to promote their target images to consumers in light of their brand positioning. For example, some restaurants (i.e., Outback Stakehouse) rely on sensory-provoking descriptions, but other restaurants (i.e., Cracker Barrel) predominantly rely on nostalgia-triggering descriptions; still other restaurants (i.e., Ruth's Chris Steak House) frequently employ brand descriptions on their menus. When a restaurant lacks generous and caring services, using sensory or nostalgic descriptions can be beneficial to strengthening warmth-related images of the restaurant. On the other hand, when a restaurant attempts to signal competitive and efficient images, it would be wise for the practitioners to appeal to brand descriptions through cross-promotion with related reputable brands.

The present research study provides additional important outcomes regarding warmth and competence evaluations in menu-selections. Based on the results of the present study, warmth has a greater impact on overall attitude formation (anticipated satisfaction) than has competence. Specifically, consumers with higher warmth evaluations expect a more satisfactory consumption experience than those with higher competence evaluations of their pre-service consumption situation; therefore, this study recommends that practitioners make it a priority to deliver warmth-related service promises to maximize anticipated satisfaction. However, it is also prudent to note that raising anticipated satisfaction in the early stage of services might backfire if consumers disconfirm consecutive core products (foods). For example, when a restaurant uses sensory/nostalgic descriptions intended to signal higher warmth services but the actual food quality is not consistent with the given descriptions, the restaurant is injured by heightening consumers' expected satisfaction; therefore, core products/services should be adequately delivered in accordance with intended promises.

Finally, the findings of the present research study suggest that competence evaluation carries more weight in behavioral intention formation (willingness to pay more) than does warmth evaluation. That is, consumers who evaluate a restaurant as highly competent are more likely to pay more in a restaurant than are those who evaluate a restaurant as highly warm during their menu selections. According to these results, however, it is prudent to note that while cultivating warmth is a factor influencing consumers' willingness to pay more, cultivating competence is relatively more of an influencing factor than warmth in comparing the two impression evaluations. While many restaurants often use sensory descriptions, it is recommended that restaurants also

use co-branding of their popular menu items, if they do not already do so. For example, Ruth's Chris Steak House describes their steak as a signature USDA prime steak, while T.G.I. Friday's uses Jack Daniel's Grill Glazed Ribs. In addition to using sensory/nostalgic labels, the strategic use of co-branding labels is an effective menu design strategy for signaling competence-related cues because it ultimately can help a restaurant's profit margins through consumers' greater willingness to pay more.

5.5. Limitations and Future Research

Despite valuable theoretical and managerial implications, several limitations in this study deserve consideration and imply suggestions for future research. First, methodological limitations should be acknowledged. While it would have been preferable to use real menu ordering situations, the lack of control regarding physical environment and consumer interaction with service providers might have confounded the findings (Perdue & Summers, 1986).

Second, the limitations of the willingness to pay more measure should also be acknowledged. In the present study, a three-item Likert-type Scale was used to assess willingness to pay more (Baker et al., 2014; Han et al., 2009). Rather than using the Likert-type Scale, however, it would have been productive to measure how great of an additional percentage consumers would have been willing to pay for a food and/or service regarding descriptive menu labels. Considering this, the present study initially measured consumers' "expected" price for their chosen food item and "maximum amount" of money they were willing to pay for their descriptive food item; however, subtraction values ("maximum amount of money willing to pay" minus "expected price")

were not used due to violations of the assumptions regarding the regression analyses (normality and lack of outliers); thus, future research might additionally measure the construct of willingness to pay more.

Third, the present study was limited to the manipulation of one component of a restaurant setting, which is restaurant menu descriptions. Other service environmental factors (a restaurant's exterior signage, table decorations, ambient scent, music, etc.) might interplay with warmth-related and competence-related cues sent through descriptive menu labels (Magnini et al., 2011; Verhoeven et al., 2009). For example, stylish and modern interiors might influence competence-related evaluations, whereas comfortable and casual interiors might affect warmth-related evaluations; therefore, it is recommended that future research be conducted to examine the interaction effects of descriptive menu labels with other setting-related variables on social impression management. These approaches would be theoretically and practically relevant to menu designs and service management.

Fourth, the wording of the descriptive labels used in this study may qualitatively change the nature of the menu items they were intended to describe. While the results of a series of independent sample t-tests and ANOVA tests indicated that the manipulation checks were successful, the results may be accounted for by alternative explanations due to the difference in the menu items themselves rather than the difference in the menu labels; therefore, future studies would benefit from combining qualitative and quantitative approaches for further delving into the nuances of differences between menu items and menu labels.

Fifth, this study did not examine emotional responses associated with descriptive menu labels and impending service experiences. That is, in the analyses, the emotional attachment associated with descriptive menu labels was controlled while warmth/competence judgments were assessed. As seen in the results, the control variable of "emotional responses" was a significant factor in all of the ANCOVA analyses; therefore, future research is warranted in examining how emotional responses can act in accordance with descriptive menu labels and service evaluations. For example, would sensory and nostalgic labels help reinforce warmth-related emotions (i.e., love and joy) regarding impending service experiences? Or, would brand labeling interact with competence-related feelings (i.e., admiration), thereby influencing greater willingness to pay more? Providing explanations for emotional reactions in descriptive menu contexts would be a meaningful contribution to and extension of food service industry knowledge.

In conclusion, the use of sensory, nostalgic, and brand descriptions is an omnipresent element of restaurant menu designs (Wansink et al., 2001). Delivering warmth (friendly and caring services) and competence (effective and competitive services) in hospitality comprises important impression management in service encounters (Bolton & Mattila, 2015; Gao & Mattila, 2014). Enhancing satisfaction and willingness to pay more is essential to creating and sustaining competitive advantages in the hyper-competitive restaurant business. Thus, extending the current understanding of how menus are designed to shape impressions of warm and competent services is both theoretically and practically relevant to the restaurant industry. In addition, understanding how warmth/competence judgments influence consumers' attitudes (anticipated satisfaction) and behavioral intentions (willingness to pay more) is an important

contribution to the body of service management knowledge. Future research that extends the present study, therefore, would offer further meaningful understanding of this important issue for effective restaurant service management.

REFERENCES

Aaker, J. L. (1997). Dimensions of brand personality. *Journal of Marketing Research, 34*(3), 347-356.

Aaker, J. L., Garbinsky, E. N., & Vohs, K. D. (2012). Cultivating admiration in brands: Warmth, competence, and landing in the "golden quadrant". *Journal of Consumer Psychology, 22*(2), 191-194.

Ajzen, I., & Driver, B. (1992). Contingent value measurement: On the nature and meaning of willingness to pay. *Journal of Consumer Psychology, 1*(4), 297-316.

Auvray, M., & Spence, C. (2008). The multisensory perception of flavor. *Consciousness and Cognition, 17*(3), 1016-1031.

Baker, M. A., Davis, E. A., & Weaver, P. A. (2014). Eco-friendly attitudes, barriers to participation, and differences in behavior at green hotels. *Cornell Hospitality Quarterly, 55*, 89-99.

Banović, M., Grunert, K. G., Barreira, M. M., & Fontes, M. A. (2009). Beef quality perception at the point of purchase: A study from Portugal. *Food Quality and Preference, 20*(4), 335-342.

Barsalou, L. W. (2008). Grounded Cognition. *Annual Review of Psychology, 59*(1), 617-645.

Barsalou, L. W., Santos, A., Simmons, W. K., & Wilson, C. D. (2008). Language and simulation in conceptual processing. *Symbols, embodiment, and meaning*, 245-283.

Bauman, C. W., & Skitka, L. J. (2012). Corporate social responsibility as a source of employee satisfaction. *Research in Organizational Behavior, 32*, 63-86.

Bennett, A. M., Hill, R. P., & Oleksiuk, D. (2013). The impact of disparate levels of marketplace inclusion on consumer-brand relationships. J*ournal of Public Policy & Marketing, 32*(special issue), 16-31.

Bergmann, K., Eyssel, F., & Kopp, S. (2012). A second chance to make a first impression? How appearance and nonverbal behavior affect perceived warmth and competence of virtual agents over time. In Y. Nakano., M. Neff., A. Paiva., M. Walker (Eds.), *Intelligent virtual agents* (pp.126-138). Heidelberg, Berlin: Springer.

Bolton, L. E., & Mattila, A. S (2015). How does corporate social responsibility affect consumer response to service failure in buyer–seller relationships? *Journal of Retailing, 91*(1), 140-153.

Botti, S., & McGill, A. L. (2011). The locus of choice: Personal causality and satisfaction with hedonic and utilitarian decisions. *Journal of Consumer Research, 37*(6), 1065-1078.

Brakus, J. J., Schmitt, B. H., & Zarantonello, L. (2009). Brand experience: what is it? How is it measured? Does it affect loyalty? *Journal of Marketing, 73*(3), 52-68.

Bredahl, L. (2004). Cue utilisation and quality perception with regard to branded beef. Food Quality and Preference, 15(1), 65-75.

Brodie, R. J., Whittome, J. R., & Brush, G. J. (2009). Investigating the service brand: A customer value perspective. *Journal of Business Research, 62*(3), 345-355.

Brown, L., Edwards, J., & Hartwell, H. (2010). A taste of the unfamiliar. Understanding the meanings attached to food by international postgraduate students in England. *Appetite, 54*(1), 202-207.

Cacciari, C. (2008). Crossing the senses in metaphorical language. In R. W. Gibbs (Ed.), *The cambridge handbook of metaphor and thought* (p.425). New York, NY: Cambridge University Press.

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39*(5), 752-766.

Chandon, P., & Wansink, B. (2012). Does food marketing need to make us fat? A review and solutions. *Nutrition Reviews, 70*(10), 571-593.

Chen, C. F., & Phou, S. (2013). A closer look at destination: Image, personality, relationship and loyalty. *Tourism Management, 36,* 269-278.

Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 61-149). San Diego: Academic Press.

Cuddy, A. J. C., Glick, P., & Beninger, A. (2011). The dynamics of warmth and competence judgments, and their outcomes in organizations. *Research in Organizational Behavior, 31,* 73-98.

Davis, E. A., Magnini, V. P., Weaver, P. A., & McGehee, N. G. (2013). The influences of verbal smell references in radio advertisements. *Journal of Hospitality & Tourism Research, 37*(2), 281-299.

Fay, A. J., & Maner, J. K. (2012). Warmth, spatial proximity, and social attachment: The embodied perception of a social metaphor. *Journal of Experimental Social Psychology, 48*(6), 1369-1372.

Fenko, A., Otten, J. J., & Schifferstein, H. N. J. (2010). Describing product experience in different languages: The role of sensory modalities. *Journal of Pragmatics, 42*(12), 3314-3327.

Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in cognitive sciences, 11*(2), 77-83.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*(6), 878-902.

Fiske, S. T., Malone, C., & Kervyn, N. (2012). Brands as intentional agents: Our response to commentaries. *Journal of Consumer Psychology, 22*(2), 205-207.

Fournier, S., & Alvarez, C. (2012). Brands as relationship partners: Warmth, competence, and in-between. *Journal of Consumer Psychology*, *22*(2), 177-185.

Gao, Y., & Mattila, A. S. (2014). Improving consumer satisfaction in green hotels: The roles of perceived warmth, perceived competence, and CSR motive. *International Journal of Hospitality Management, 42*, 20-31.

Grandey, A. A., Fisk, G. M., Mattila, A. S., Jansen, K. J., & Sideman, L. A. (2005). Is "service with a smile" enough? Authenticity of positive displays during service encounters. *Organizational Behavior and Human Decision Processes, 96*(1), 38-55.

Gross, J., & John, O. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348-362.

Guéguen, N., & Jacob, C. (2012). The effect of menu labels associated with affect, tradition and patriotism on sales. *Food Quality and Preference, 23*(1), 86-88.

Han, H., Hsu, L. T., & Lee, J. S. (2009). Empirical investigation of the roles of attitudes toward green behaviors, overall image, gender, and age in hotel customers' eco-friendly decision-making process. *International Journal of Hospitality Management, 28*(4), 519-528.

Ho, C., & Jackson, J. W. (2001). Attitude toward Asian Americans: Theory and measurement. *Journal of Applied Social Psychology, 31*(8), 1553-1581.

Holbrook, M. B. (1993). Nostalgia and consumption preferences: Some emerging patterns of consumer tastes. *Journal of Consumer Research, 20*(2), 245-256.

Holbrook, M. B., & Schindler, R. M. (2003). Nostalgic bonding: Exploring the role of nostalgia in the consumption experience. *Journal of Consumer Behaviour, 3*(2), 107-127.

Homburg, C., Koschate, N., & Hoyer, W. D. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of Marketing, 69*(2), 84-96.

Hur, J., & Jang, S. S. (2015). Consumers' inference-dynamics about healthy menu promotions in a bundle context. *International Journal of Hospitality Management, 44*, 12-22.

Imm, B. Y., Lee, J. H., & Lee, S. H. (2012). Effects of sensory labels on taste acceptance of commercial food products. *Food Quality and Preference, 25*(2), 135-139.

Aaker, J., Vohs, K. D., & Mogilner, C. (2010). Nonprofits are seen as warm and for-profits as competent: firm stereotypes matter. J*ournal of Consumer Research, 37*(2), 224-237.

Kervyn, N., Fiske, S. T., & Malone, C. (2012). Brands as intentional agents framework: How perceived intentions and ability can map brand perception. *Journal of Consumer Psychology, 22*(2), 166-176.

Kim, D., Magnini, V. P., & Singal, M. (2011). The effects of customers' perceptions of brand personality in casual theme restaurants. *International Journal of Hospitality Management, 30*(2), 448-458.

Kim, E., Ham, S., Yang, I. S., & Choi, J. G. (2013). The roles of attitude, subjective norm, and perceived behavioral control in the formation of consumers' behavioral intentions to read menu labels in the restaurant industry. *International Journal of Hospitality Management, 35*, 203-213.

Kreul, L. M. (1982). Magic numbers: Psychological aspects of menu pricing. *Cornell Hotel and Restaurant Administration Quarterly, 23*(2), 70-75.

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

Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. New York, NY: Basic Books.

Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin, 136*(6), 1045-1067.

LaTour, S. A., & Peat, N. C. (1979). Conceptual and methodological issues in consumer satisfaction research. *Advances in consumer research, 6*(1), 431-437.

Lee, Y. K., Back, K. J., & Kim, J. Y. (2009). Family restaurant brand personality and its impact on customer's emotion, satisfaction, and brand loyalty. *Journal of Hospitality & Tourism Research, 33*(3), 305-328.

Locher, J. L., Yoels, W. C., Maurer, D., & Van Ells, J. (2005). Comfort foods: An exploratory journey into the social and emotional significance of food. *Food & Foodways, 13*(4), 273-297.

Macrae, C. N., Raj, R. S., Best, S. B., Christian, B. M., & Miles, L. K. (2013). Imagined sensory experiences can shape person perception: It's a matter of visual perspective. *Journal of Experimental Social Psychology, 49*(3), 595-598.

Magnini, V. P., & Karande, K. (2010). An experimental investigation into the use of written smell references in ecotourism advertisements. *Journal of Hospitality & Tourism Research, 34*(3), 279-293.

Magnini, V. P., Miller, T., & Kim, B. (2011). The psychological effects of foreign-language restaurant signs on potential diners. *Journal of Hospitality & Tourism Research, 35*(1), 24-44.

McCarthy, M. S., & Norris, D. G. (1999). Improving competitive position using branded ingredients. *Journal of Product & Brand Management, 8*(4), 267-285.

Meier, B. P., Robinson, M. D., & Clore, G. L. (2004). Why good guys wear white automatic inferences about stimulus valence based on brightness. *Psychological Science, 15*(2), 82-87.

Meier, B. P., Schnall, S., Schwarz, N., & Bargh, J. A. (2012). Embodiment in social psychology. *Topics in Cognitive Science, 4*(4), 705-716.

Naipaul, S., & Parsa, H. (2001). Menu price endings that communicate value and quality. *Cornell Hotel and Restaurant Administration Quarterly, 42*(1), 26-37.

Pavesic, D. V. (1989). Psychological aspects of menu pricing. *International Journal of Hospitality Management, 8*(1), 43-49.

Perdue, B. C., & Summers, J. O. (1986). Checking the success of manipulations in marketing experiments. *Journal of marketing research, 23*(4), 317-326.

Raab, C., Mayer, K., Kim, Y. S., & Shoemaker, S. (2009). Price-sensitivity measurement: A tool for restaurant menu pricing. *Journal of Hospitality & Tourism Research, 33*(1), 93-105.

Reynolds, D., Merritt, E. A., & Pinckney, S. (2005). Understanding menu psychology. *International Journal of Hospitality & Tourism Administration, 6*(1), 1-9.

Richardson, P. S., Dick, A. S., & Jain, A. K. (1994). Extrinsic and intrinsic cue effects on perceptions of store brand quality. *Journal of Marketing, 58*(4), 28-36.

Rubio, N., Oubiña, J., & Villaseñor, N. (2014). Brand awareness–brand quality inference and consumer's risk perception in store brands of food products. *Food Quality and Preference, 32,* 289-298.

Rudman, L. A., & Phelan, J. E. (2008). Backlash effects for disconfirming gender stereotypes in organizations. *Research in Organizational Behavior, 28,* 61-79.

Saint-Bauzel, R., & Fointiat, V. (2013). The sweet smell… of coldness: Vanilla and the warm-cold effect. *Social Behavior & Personality: an international journal, 41*(10), 1635-1640.

Scanlan, L., & McPhail, J. (2000). Forming service relationships with hotel business travelers: The critical attributes to improve retention. *Journal of Hospitality & Tourism Research, 24*(4), 491-513.

Schutte, N., Manes, R., & Malouff, J. (2009). Antecedent-focused emotion regulation, response modulation and well-being. *Current Psychology, 28*(1), 21-31.

Sedikides, C., Wildschut, T., Arndt, J., & Routledge, C. (2008). Nostalgia: Past, present, and future. *Current Directions in Psychological Science, 17*(5), 304-307.

Shiv, B., & Huber, J. (2000). The impact of anticipating satisfaction on consumer choice. *Journal of Consumer Research, 27*(2), 202-216.

Slepian, M. L., Weisbuch, M., Rule, N. O., & Ambady, N. (2011). Tough and tender: Embodied categorization of gender. *Psychological Science, 22*(1), 26-28.

Swahn, J., Mossberg, L., Öström, Å., & Gustafsson, I. B. (2012). Sensory description labels for food affect consumer product choice. *European Journal of Marketing, 46*(11/12), 1628-1646.

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

Turner, R. N., Wildschut, T., & Sedikides, C. (2012). Dropping the weight stigma: Nostalgia improves attitudes toward persons who are overweight. *Journal of Experimental Social Psychology, 48*(1), 130-137.

Unger, L. S., Mcconocha, D. M., & Faier, J. A. (1991). The use of nostalgia in television advertising: A content analysis. *Journalism & Mass Communication Quarterly, 68*(3), 345-353.

Valta, K. S. (2013). Do relational norms matter in consumer-brand relationships? *Journal of Business Research, 66*(1), 98-104.

Verhoeven, J. W. M., van Rompay, T. J. L., & Pruyn, A. T. H. (2009). The price facade: Symbolic and behavioral price cues in service environments. *International Journal of Hospitality Management, 28*(4), 604-611.

Walker, J. L. (1995). Service encounter satisfaction: conceptualized. *Journal of Services Marketing, 9*(1), 5-14.

Wansink, B., & Love, K. (2014). Slim by design: Menu strategies for promoting high-margin, healthy foods. *International Journal of Hospitality Management, 42*, 137-143.

Wansink, B., Painter, J., & van Ittersum, K. (2001). Descriptive menu labels' effect on sales. *Cornell Hotel and Restaurant Administration Quarterly, 42*(6), 68-72.

Wansink, B., van Ittersum, K., & Painter, J. E. (2004). How diet and health labels influence taste and satiation. *Journal of Food Science, 69*(9), S340-S346.

Wansink, B., van Ittersum, K., & Painter, J. E. (2005). How descriptive food names bias sensory perceptions in restaurants. *Food Quality and Preference, 16*(5), 393-400.

Wei, W., & Miao, L. (2013). Effects of calorie information disclosure on consumers' food choices at restaurants. *International Journal of Hospitality Management, 33*, 106-117.

Wildschut, T., Sedikides, C., Arndt, J., & Routledge, C. (2006). Nostalgia: Content, triggers, functions. *Journal of Personality and Social Psychology, 91*(5), 975-993.

Wildschut, T., Sedikides, C., Routledge, C., Arndt, J., & Cordaro, F. (2010). Nostalgia as a repository of social connectedness: The role of attachment-related avoidance. *Journal of Personality and Social Psychology, 98*(4), 573-586.

Williams, J. M. (1976). Synaesthetic adjectives: A possible law of semantic change. *Language, 52*(2), 461-478.

Williams, L. E., & Bargh, J. A. (2008). Experiencing physical warmth promotes interpersonal warmth. *Science, 322*(5901), 606-607.

Willis, J., & Todorov, A. (2006). First impressions making up your mind after a 100-ms exposure to a face. *Psychological Science, 17*(7), 592-598.

Wojciszke, B., & Abele, A. E. (2008). The primacy of communion over agency and its reversals in evaluations. *European Journal of Social Psychology, 38*(7), 1139-1147.

Wojciszke, B., Dowhyluk, M., & Jaworski, M. (1998). Moral competence-related traits: How do they differ? *Polish Psychological Bulletin, 29,* 283-294.

Yang, S. S. (2012). Eye movements on restaurant menus: A revisitation on gaze motion and consumer scanpaths. *International Journal of Hospitality Management, 31*(3), 1021-1029.

Yang, S. S., Kimes, S. E., & Sessarego, M. M. (2009). Menu price presentation influences on consumer purchase behavior in restaurants. *International Journal of Hospitality Management, 28*(1), 157-160.

Ybarra, O., Chan, E., & Park, D. (2001). Young and old adults' concerns about morality and competence. *Motivation and Emotion, 25*(2), 85-100.

Yoon, H. J., & George, T. (2012). Nutritional information disclosure on the menu: Focusing on the roles of menu context, nutritional knowledge and motivation. *International Journal of Hospitality Management, 31*(4), 1187-1194.

Zemke, D. M., & Shoemaker, S. (2008). A sociable atmosphere ambient scent's effect on social interaction. *Cornell Hospitality Quarterly, 49*(3), 317-329.

Zhou, X., Wildschut, T., Sedikides, C., Shi, K., & Feng, C. (2012). Nostalgia: The gift that keeps on giving. *Journal of Consumer Research, 39*(1), 39-50.

Appendix A: Menu Labels for Entrée and Dessert Items Used in the Pretests

Usual Label	Sensory Label	Nostalgic Label	Brand Label
Rotisserie Chicken	Wood-fired Savory Rotisserie Chicken	Grandma's Homemade Rotisserie Chicken	Capital Grille® Rotisserie Chicken
BBQ Ribs	Sweet Smoked Succulent BBQ Ribs	Mom's Favorite BBQ Ribs	Bobby Flay's® BBQ Ribs
Ribeye Steak	Sweet Glazed Grilled Ribeye	Traditional Classic Ribeye	Ruth Chris's USDA Prime® Ribeye
Pasta	Buttery Plump Pasta	Classic Old-world Italian Pasta	Maggiano's Little Italy® Pasta
Salmon	Smoked Savory Poached Salmon	Grandma's Home-style Poached Salmon	Bonefish Grill ® Poached Salmon
Shrimp Linguine	Succulent Shrimp Linguine	Classic Home-style Shrimp Linguine	Bonefish Grill ® Shrimp Linguine
Eggplant	Fresh Grilled Eggplant Supreme Crusted with Butter	Mom's Home-style Eggplant Supreme	Bobby Flay's® Eggplant Supreme

Usual Label	Sensory Label	Nostalgic Label	Brand Label
Chocolate Ice Cream Cake	Rich and Moist Triple Chocolate Ice Cream Cake	Traditional Triple Chocolate Ice Cream Cake	Haagen-Dazs ® Triple Chocolate Ice Cream Cake
Apple Pie	Succulent Apple Pie	Grandma's Homemade Apple Pie	Paula Deen's® Apple Pie
Cheesecake	Sweet Glazed Cheesecake	Classic Old NewYork Style Cheesecake	Cheesecake Factory® Cheesecake
Peach Cobbler	Succulent Peach Cobbler	Mom's Favorite Peach Cobbler	Ruth Chris® Peach Cobbler

Appendix B: Menu Labels for Entrée and Dessert Items Used in the Main Study

General Label	Sensory Label	Nostalgic Label	Brand Label
Rotisserie Chicken	Wood-fired Savory Rotisserie Chicken	Grandma's Homemade Rotisserie Chicken	Capital Grille® Rotisserie Chicken
BBQ Ribs	Sweet Smoked Succulent BBQ Ribs	Mom's Favorite BBQ Ribs	Bobby Flay's® BBQ Ribs
Ribeye Steak	Sweet Glazed Grilled Ribeye	Traditional Classic Home-style Ribeye	Ruth Chris's USDA Prime® Ribeye
Pasta	Buttery Plump Pasta	Mom's Home-style Italian Pasta	Maggiano's Little Italy® Pasta
Salmon	Smoked Savory Poached Salmon	Grandma's Home-style Poached Salmon	Bonefish Grill® Salmon
Shrimp Linguine	Sweet and Succulent Grilled Shrimp Linguine	Classic Home-style Shrimp Linguine	Bonefish Grill® Shrimp Linguine
Eggplant	Sweet Grilled Eggplant	Mom's Home-style Eggplant	Bobby Flay's® Eggplant Supreme

General Label	Sensory Label	Nostalgic Label	Brand Label
Chocolate Ice Cream Cake	Moist and Succulent Triple Chocolate Ice Cream Cake	Traditional Chocolate Ice Cream Cake	Haagen-Dazs® Chocolate Ice Cream Cake
Apple Pie	Crispy and Buttery Apple Pie	Grandma's Homemade Apple Pie	Paula Deen's® Apple Pie
Cheesecake	Rich and Creamy Glazed Cheesecake	Traditional NewYork Style Cheesecake	Cheesecake Factory's Prime® Cheesecake
Peach Cobbler	Snappy Seasonal Peach Cobbler	Mom's Favorite Peach Cobbler	Paula Deen's® Peach Cobbler

Appendix C: Main Study - Survey Instrument

Section 1: Manipulation Checks

Imagine yourself in the following scenario:
You are seated in a restaurant and you are deciding what to order.

Based upon this menu label, please indicate your level agreement with the following statements.

Sensory Label (Wansink & Love, 2014; Wansink et al., 2001)

Questions	←strongly disagree						strongly agree →
This menu label attempts to convey the taste of the item.	1	2	3	4	5	6	7
This menu label attempts to convey the smell of the item.	1	2	3	4	5	6	7
This menu label attempts to convey the mouth feel of the item.	1	2	3	4	5	6	7

Nostalgic Label (Wansink & Love, 2014; Wansink et al., 2001)

Questions	←strongly disagree						strongly agree →
This menu label attempts to convey a wholesome feeling of family.	1	2	3	4	5	6	7
This menu label attempts to convey a wholesome feeling of tradition.	1	2	3	4	5	6	7

Brand Label (Wansink & Love, 2014; Wansink et al., 2001)

Questions	←strongly disagree						strongly agree →
This menu label contains a brand name.	1	2	3	4	5	6	7

General (Wansink & Love, 2014; Wansink et al., 2001)

Questions	←strongly disagree						strongly agree →
This menu label contains a food name.	1	2	3	4	5	6	7

Section 2: Dependent Variables

Warmth- and Competence-related Impression Scales
(Aaker et al., 2010; Gao & Mattila, 2014)

Based upon this menu menu label, it can be **inferred** that this restaurant service is:

Related Items	←strongly disagree						strongly agree →
Warm	1	2	3	4	5	6	7
Kind	1	2	3	4	5	6	7

Generous	1	2	3	4	5	6	7
Competent	1	2	3	4	5	6	7
Effective	1	2	3	4	5	6	7
Efficient	1	2	3	4	5	6	7

Emotional Attachment Scale (Chen & Phou, 2013)

Please indicate the level of agreement with the following statement?

Statements	←strongly disagree						strongly agree →
This menu item means a lot to me.	1	2	3	4	5	6	7
I feel a strong sense of belonging to this menu item.	1	2	3	4	5	6	7
I am very attracted to this menu item.	1	2	3	4	5	6	7

Brand Experience Scale (Brakus, Schmitt, & Zarantonello, 2009)

Please indicate the level of agreement with the following statement?

Statements	←strongly disagree						strongly agree →
This brand induces feelings and sentiments.	1	2	3	4	5	6	7
I have strong emotions for this brand.	1	2	3	4	5	6	7
This brand is an emotional brand.	1	2	3	4	5	6	7

Anticipated Satisfaction Scale (Yang & Mattila, 2013)

Based upon this menu description, how do you think you would be satisfied with your din ing experience at this restaurant?

← Dissatisfied						Satisfied →
1	2	3	4	5	6	7
← Unhappy						Happy →
1	2	3	4	5	6	7
← Bad						Good →
1	2	3	4	5	6	7

Willingness to Pay More (Baker et al., 2014; Han et al., 2009)

Based upon this menu description, please indicate your level of agreement with the follo wing statements.

Statements	←strongly disagree						strongly agree →
It is acceptable to pay more for this type of menu item.	1	2	3	4	5	6	7
I am willing to pay more for this type of menu item.	1	2	3	4	5	6	7
I am willing to spend extra money for this type of menu item.	1	2	3	4	5	6	7

Section 3: Sample, Entrée, and Dessert Adequacy and Experimental Realism

Sample Adequacy

On average, how many times per year do you eat at restaurants? _____

Have you ever eaten this type of entrée? Yes _____ No _____

Have you ever eaten this type of dessert? Yes _____ No _____

Entrée and Dessert Adequacy

Have you ever eaten this type of entrée? Yes _____ No _____

Have you ever eaten this type of dessert? Yes _____ No _____

Entrée Adequacy

Statement	←strongly disagree						strongly agree →
I generally enjoy eating this type of entrée at a restaurant.	1	2	3	4	5	6	7
If I were at a restaurant, I would be very likely to order this entrée item.	1	2	3	4	5	6	7

Dessert Adequacy

Statement	←strongly disagree						strongly agree →
I generally enjoy eating this type of dessert at a restaurant.	1	2	3	4	5	6	7
If I were at a restaurant, I would be very likely to order this dessert item.	1	2	3	4	5	6	7

Experimental Realism

Statement	←strongly disagree						strongly agree →
This menu item could be seen on an actual restaurant menu.	1	2	3	4	5	6	7

Section 4: Demographic Information

What is your gender?

Female _____ Male _____

What year were you born? _____

What is your race?

Caucasian _____ African American _____ Hispanic _____ Asian_____

Native American _____ Pacific Islander_____ Other (please specify) _____

What is the highest level of education you have completed?

Less than high school diploma _____ High school diploma _____

Some college, but no degree _____ Associate's degree _____

Bachelor's degree _____ Graduate Degree _____

Appendix D. IRB Approval

VirginiaTech

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
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MEMORANDUM

DATE: November 6, 2014

TO: Vincent Magnini, Seontaik Kim

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)

PROTOCOL TITLE: The Effects of Descriptive Food Names on Impressions, Anticipated Satisfaction, and Willingness to Pay

IRB NUMBER: **14-1052**

Effective November 5, 2014, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As:	**Exempt, under 45 CFR 46.110 category(ies) 2**
Protocol Approval Date:	**November 5, 2014**
Protocol Expiration Date:	**N/A**
Continuing Review Due Date*:	**N/A**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.