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The influences of restaurant menu font style, background color, and physical weight on consumers' perceptions

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ABSTRACT

Restaurateurs often attempt to signal the scale [e.g., casual vs. upscale] and service standards of their operations through the use of various cues on their menus. Fancy font, gold menu paper, and heavy physical menu weight are frequently used as attempts to signal an upscale environment and high service standards to potential diners. Therefore, this research conducts a $2 \times 2 \times 2$ between subjects experimental design on students at a large Mid-Atlantic University to test these effects. Results indicate that when menu font is italicized potential diners do perceive the restaurant to be more upscale and as having the capability to deliver top-rate service. The same findings also held true for menu weight: heavier menus, as opposed to lighter ones, drive perceptions of scale and anticipated service quality. Regarding background color, however, no significant effects of gold versus white background colors were found.

1. Introduction

A restaurant's physical menu is an initial signal to a customer about his/her impending restaurant experience. The menu not only communicates what is being sold, but can also lead diners to select particular items (Antun and Gustafson, 2005). Moreover, the menu offers a look at the brand image and personality of the restaurant (Kincaid and Corsun, 2003; Ozdemir and Caliskan, 2014). After all, menus are handed to diners upon their arrival at the table. In fact, research dating back nearly two decades finds that the esthetic features of a restaurant menu do have significant influences on consumers' perceptions of a restaurant's image and perceived quality of the servicescape (McCall and Lynn, 2008; Mills and Thomas, 2008; Morrison, 1996; Verhoeven et al., 2009).

Because menus are a key facet of restaurants' fundamental business strategies (Markovic et al., 2010), restaurateurs use various elements of the physical menu to communicate the restaurant's desired brand positioning. Changes in the physical design of the menu can significantly impact the sales of a restaurant (Kwong, 2005), with some estimates suggesting up to a 10 percent increase for subtle changes (Panitz, 2000). Due to the relatively low cost of doing so, as evidenced by the many variations that exist at restaurants, the three elements that are commonly used for such signaling are menu font style, menu paper color, and a menu's physical weight.

Are these menu design strategies effective in such signaling? Practice is often wiser than theory so perhaps these tactics do help shape customers' perceptions, but to date little empirical research has explicitly examined this area. Even pedagogical textbooks designed to prepare undergraduate students to become entry-level managers, report that proper physical menu design is important (e.g., Cichy and Wise, 1998), but again, little fine-grained empirical research, drilling down into specific physical features, has been conducted. Therefore, the purpose of this research is to empirically test the influences of menu font style, menu paper color, and a menu's physical weight on consumers' perceptions of scale and service quality. These three attributes were selected for inclusion in this research because they are inexpensive for restaurateurs to manipulate, thus making them commonly varied in the industry as efforts to signal scale and service cues to diners.

To achieve the intended purpose, this article draws upon theories and empirical findings from a variety of disciplines to provide a conceptual anchoring for our predictions. Next, the article details the particulars of the $2 \times 2 \times 2$ between subjects experimental design used to test the hypotheses. The article then concludes with results, conclusions, implications, and suggestions for future research extensions.

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2. Literature review

A menu serves as a marketing tool for a restaurant because it is intended to promote particular perceptions to the consumer (McCall and Lynn, 2008). Most research on restaurant menus has focused on product placement and ways to highlight specific items that have the greatest profit potential for the restaurant (Bowen and Morris, 1995; Guéguen et al., 2012; Mill, 2001). For example, Bowen and Morris (1995) find that well-orchestrated menu design can help sell complimentary menu items; Raab et al. (2010) detail advances in menu engineering processes in which sales volumes and profit margins of menu items are taken into account; and, Fang and Hsu (2014) consider profit margins coupled with the effects of different menu items on operational efficiency. Some of these product placement studies use eye tracking technology to study consumers' scan paths when reading menus. For instance, Yang (2012) used eye tracking devices to find that consumers' actual scanpaths do not match industry's current understanding of menu design. Nevertheless, while the design and physical elements of a menu have a direct influence on perceived scale and anticipated levels of service, they are largely overlooked in the current body of menu research (McCall and Lynn, 2008; Reynolds et al., 2005; Verhoeven et al., 2009; Wansink and Love, 2014).

There is, however, theoretical anchoring outside of the hospitality literature that supports the contention that a menu's physical attributes can send significant signals to consumers. For example, the notion of grounded cognition (Barsalou, 2008) posits that visual and haptic (sense of touch) cues affect individuals' perceptions. Correspondingly, a growing body of research suggests that the cues communicated through physical packaging can facilitate customers' brand evaluations (Bellizzi and Hite, 1992; Keller, 1993), and the visual and haptic cues can lead to customers' inferences about the target quality placed in a given packaging (Jostmann et al., 2009; Towal et al., 2013). Anecdotal evidence has shown that food and beverage operations have used different design elements on menus to help differentiate customers' perceptions of scale and service quality (Dostal, 2013). However, despite the potentially powerful roles of the visual and haptic cues, the effects of menu-related variables (i.e., menu font style, menu paper background color, and menu's physical weight) on restaurant customers' perceptions of scale and service quality has received very little empirical attention.

2.1. Font

Nearly a century ago, Poffenberger and Franken (1923) asked subjects to assess the appropriateness of 29 font styles for each of five commodities (automobiles, building materials, coffee, jewelry, perfume) and five abstract qualities (cheapness, dignity, economy, luxury, strength). The results of this study found that simple and easy-to-read fonts were associated with characteristics such as 'cheapness' and 'economy' whereas italicized, scripted, or ornate fonts were in turn associated with qualities of 'luxury' and 'dignity'. This seminal study provided initial evidence that font style does matter in that consumers can perceive the level of appropriateness of various styles in a given context.

Studies contained in the marketing literature have extended this stream of research to suggest that visual characteristics such as typefaces (ex. underlining, bold, italics) convey specific meaning to the reader (Childers and Jass, 2002). The use of a particular font for a specific brand or product can have a positive effect if the font association is used properly and a negative effect if the font is not suitable in helping to convey an intended image (Doyle and Bottomley, 2004). In a restaurant context, however, we have seen no academic studies that examine the effect of menu font style on perceived scale or anticipated service quality by customers. A number of font style studies have been conducted outside of the restaurant industry. For instance, Diemand-Yauman et al. (2011) find that italicized texts used in learning materials yield significant improvements in students' educational outcomes in that the italicized font leads to better memory performances. Such findings are anchored with motivation based theories that suggest that more elaborate designs increase arousal and are better liked if they are appropriate for the item being described (Berlyne, 1971; Hirschman, 1980).

Thus, to extend this body of font-style research to a restaurant menu context, the current study posits that a restaurant menu written in italicized font will signal to the consumer that the restaurant is more upscale than the same menu written in non-italicized font. Such predictions extend the growing body of font-style research into a restaurant context. In sum, italicized fonts signal more 'luxury' and less 'economy' than simpler font styles (Poffenberger and Franken, 1923). As stated in the previous section, grounded cognition theory supports this logic regarding the effect of font style. In particular, a facet of grounded cognition theory, perceptual symbol systems (PSS), contends that a single multimodal system in the human brain can accommodate diverse types of information processing across various cognitive processes including high-level perception, implicit memory, working memory, long-term memory, and conceptual knowledge (Barsalou, 2008). PSS goes further to posit that the brain typically contextualizes the categories that it represents in the background situations (e.g., objects, agents, actions, events, and psychological states) (Barsalou, 2003; Yeh and Barsalou, 2006). Thus, the notion that a font style can trigger various inferences is rooted in the PSS dimension of grounded cognition theory.

As an extension of the grounded cognition theory, further theory-based support for such logic can be found in the concept of *visual equity* which can be described as the value derived from the visual cues that represent a brand (Lightfoot and Gerstman, 1998). While some marketing studies focus on a product's package as a trigger of visual equity (e.g., Underwood, 2003), Doyle and Bottomley (2004) demonstrate that font appropriateness in a brand's images can also have a significant influence on the formation of visual equity. In a restaurant context, Bowen and Morris (1995) contend that menus provide tangible evidence of a restaurant's intended image. The level of service offered is a key component of a restaurant's branding and image because research finds that service levels can generate brand equity in firms (Berry, 2000); therefore, the notion of visual equity and the theory of grounded cognition anchor the notion that font can influence both scale and service perceptions. Hence, based upon this logic, the following hypotheses are offered:

H1a. Diners will perceive restaurants with an italicized menu font as being more upscale than restaurants with a non-italicized menu font.

H1b. Diners will perceive restaurants with an italicized menu font as being capable of delivering higher levels of service quality than restaurants with a non-italicized menu font.

2.2. Background color

Color communicates symbolic and associative messages and serves as a significant cue for transferring meaning, contrast, and novelty to the product and brand (Schmitt and Pan, 1994; Garber et al., 2000). The use of color on items such as packaging, labeling, and logos aids in shaping consumers' perceptions of the brand and product (Grossman and Wisenblit, 1999; Aslam, 2006).

Like with font-style, there is also very limited research on the influence of restaurant menu background color on customers' perceived service quality, which is surprising because research has suggested that consumers judge a product on the basis of menu

appearance (Litsikas, 1996). What scant research that has been conducted on the role of restaurant menu background color on individual perceptions is largely anecdotal rather than empirical.

A product's color can be a strong signal of both price and quality (Kerfoot et al., 2003). The present study examines the colors of gold and white. Research has shown that gold or silver colored background is often used to denote prestige and luxury items (Allen, 2013). Color associations of consumers in the United States view gold as a color corresponding with "beautiful, good, pleasant, sharp, vibrant, and active" while white is considered "peaceful and calming" (Madden et al., 2000). Grounded cognition (Barsalou, 2008) and visual equity (Lightfoot and Gerstman, 1998) theoretically-anchor such color effects. Specifically, the PSS component of grounded cognition theory (Barsalou, 2008) lends support to the notion that colors can be psychologically associated with certain meanings as PSS suggests that a single multimodal system in the human brain can accommodate diverse types of information processing. In other words, sensory stimuli can impact dissimilar, but associated, judgments (Barsalou, 2008; Lakoff and Johnson, 1980; Williams and Bargh, 2008). Moreover, visual equity (Lightfoot and Gerstman, 1998) also anchors the notion that colors can be psychologically connected to particular meanings because the colors on a menu can aid in branding efforts.

Interestingly, while some color effects are rooted in human physiology [e.g., red being a sexually arousing color], other color effects, such as gold as a signal of quality, likely derive from repeated pairing (Elliot and Maier, 2012). In other words, some color effects are learned rather than biological. Many firms wishing to signal quality have done so through the use of the color gold. The Hershey Corporation, for example, wraps its more expensive candies in gold foil as opposed to silver foil. Based upon these discussions, the following predictions are offered.

H2a. Diners will perceive restaurants with a gold menu background color as being more upscale than restaurants with a white menu background color.

H2b. Diners will perceive restaurants with a gold menu background color as being capable of delivering higher levels of service quality than restaurants with a white menu background color.

2.3. Weight

We have also seen no empirical findings regarding the effect of a menu's weight on customers' perceptions. In fine dining, elements such as flatware, china, and glassware tend to be heavier than in casual restaurants (Culinary Institute of America, 2001), therefore, suggesting that menu weight may also be a cue that signals quality. Such weight inferences are being reported in emerging research: for example, Gatti et al. (2014) find that heavier liquid soap containers are perceived by individuals to contain soap that is more potent than soap contained in a lighter weight container.

Drawing upon the notion of grounded cognition (Barsalou, 2008), recent research suggests that carrying weight can influence psychological judgment (Jostmann et al., 2009; Zhang and Li, 2012). For instance, Ackerman et al. (2010) find that the weight cue affects impressions of the candidate's performance, consistent with heavy metaphor. More specifically, job candidates are perceived as more qualified when their application is presented on a heavy rather than light clipboard. Similarly, Piqueras-Fiszman and Spence (2012) also find that the contents of a heavier container are expected to be more satisfying prior to tasting the food than when the same contexts are presented in a lighter container.

Why do heavier weighted items have such effects? From an early age, humans learn that carrying heavy objects requires more effort than does carrying light weight ones. Individuals, therefore, learn to associate such weight with bodily and mental effort (Jostmann et al., 2009). As a consequence, many languages use weight as a metaphor to indicate the importance of abstract issues (Vankeerberghen, 2006). Such a connection between weight and importance has permeated our psychology and now transcends into other thought processes as well (Jostmann et al., 2009). Again, grounded cognition suggests that an abstract concept such as the importance of something can be associated with a sensory experience such as physical weight. Such associations are due to the fact that cognitive representations are grounded in the brain's sensorimotor system. Through the categorization of experienced states, individuals develop perceptual representations of abstract concepts (Jostmann et al., 2009). As previously stated, grounded cognition theory relies upon the notion that sensory stimuli can impact dissimilar, but associated, evaluations (Barsalou, 2008; Lakoff and Johnson, 1980; Williams and Bargh, 2008).

A consumer's psychological involvement in a purchase situation is positively correlated with the financial outlay of the purchase (Karande and Magnini, 2011); thus, upscale dining experiences are more likely to be associated with higher levels of consumer involvement than experiences that entail less financial outlay. Driven, in part, by psychological involvement, we extend the logic here to predict that heavier weighted menus can serve as a signal of scale and service quality due to the metaphor-based associations that individuals make anchored with grounded cognition theory. Based upon the above streams of literature, the following hypotheses are offered.

H3a. Diners will perceive restaurants with heavy weight menus as being more upscale than restaurants with light weight menus.

H3b. Diners will perceive restaurants with heavy weight menus as being capable of delivering higher levels of service quality than restaurants with light weight menus.

3. Methods

3.1. Research design

A $2 \times 2 \times 2$ between-subjects factorial experiment was carried out with font style, paper color, and menu physical weight being manipulated. The experiment was conducted on a convenience sample of 265 students at a large Mid-Atlantic University. As listed in Table 2, respondents were randomly assigned to one of eight treatment conditions. Of the 265 participants, 62 percent were female. The average age of the participants was 22.

Regarding the particulars of the experimental design execution, a researcher entered classes and told the students present in the classrooms that they had the option to participate in a study designed to evaluate a restaurant menu. The students wishing to participate were each handed a trifold restaurant menu for a fictitious Italian-American restaurant [see Appendix A]. Each of the three sections of the trifold menu was 8.5" × 11." The exterior portions of the menu trifolds were entirely blank [no restaurant name or graphics], but the interior portions detailed an actual Italian–American restaurant menu with the exception that prices of the menu items were absent. The subjects were instructed to read the menu as if they were presented with it in a restaurant. Upon reading the menu, the subjects were then provided a short paper-and-pencil survey through which to evaluate their perceptions of the menu and to respond to some basic demographic items. It is prudent to note that students were unable to see the other treatment conditions; that is, treatment conditions were not mixed within a single classroom.

Table 1
MANOVA results.

Variables	*F* value	Significance	
	Predicting restaurant scale perceptions		
Menu font	6.65	0.010	M_{ital} = 5.34, SD = .11; $M_{non\text{-}ital}$ = 4.95, SD = .11
Menu background color	1.59	0.208	M_{gold} = 5.24, SD = .10; M_{white} = 5.05, SD = .11
Menu weight	7.12	0.008	M_{heavy} = 5.34, SD = .11; M_{light} = 4.94, SD = .10
	Predicting assurance perceptions		
Menu font	8.96	0.003	M_{ital} = 5.52, SD = .071; $M_{non\text{-}ital}$ = 5.21, SD = 072
Menu background color	0.25	0.616	M_{gold} = 5.39, SD = .071; M_{white} = 5.34, SD = .073
Menu weight	4.72	0.031	M_{heavy} = 5.48, SD = .073; M_{light} = 5.25, SD = .070

3.2. Measurement of variables and manipulation checks

3.2.1. Font style

As a manipulated independent variable in this experiment, font style was operationalized by using standard 'Times New Roman' font type and creating a non-italicized treatment and an italicized treatment.[1] To check the effectiveness of this manipulation, at the end of the survey, subjects were asked to respond on a seven point Likert-type scale [strongly disagree = 1; strongly agree = 7] to the following item: "The font printed in this menu is fancy." Results indicate that the treatments were perceived as intended [italics = 5.0; non-italics = 2.4; t (260) = 13.89, p < 0.01].

3.2.2. Background color

Background color was operationalized by creating treatments on white paper and on gold paper. Both colors were of the same brand, stock, and quality. A reputable paper company, having sold paper in the U.S. since 1839, clearly labels the paper used in this experiment as either 'white' or 'gold.' As the manipulation check, respondents were asked at the end of the survey: 'Is this menu printed on gold paper' or 'Is this menu printed on white paper' and were asked to respond 'yes' or 'no.' Both colors performed as intended in this manipulation check.

3.2.3. Menu weight

Menu weight was manipulated by inserting clear plexiglass inserts into one half of the menus to create the heavy treatment. The light and heavy menus were identical in appearance and only differed with regard to their weight [heavy menu = 570 g; light menu = 210 g]. To check the effectiveness of this manipulation, at the end of the survey, subjects were asked to respond on a seven point Likert-type scale [strongly disagree = 1; strongly agree = 7] to the following item: "Given the menu materials, the weight of this menu is somewhat heavy." Results indicate that the treatments were perceived as intended [light = 3.9; heavy = 5.8; t (259) = 10.68, p < 0.01]. It is prudent to note that all manipulation check items were included at the very end of the survey to avoid priming effects.

3.2.4. Perceived restaurant scale

Perceived restaurant scale was captured with the following Likert-Type item: "This is an upscale restaurant" [1 = strongly disagree; 7 = strongly agree]. Scale was operationalized with this single item for two reasons. First, no established multi-item survey mechanism exists in extant hospitality or marketing literature for specifically measuring consumers' perceptions of restaurant scale. Second, other published studies (e.g., Magnini and Thelen, 2008; Susskind and Chan, 2000) utilize a single item to asses customers' perceptions of restaurant décor/scale.

[1] Fancier fonts available through word processing programs such as MS Word often become illegible when used in menu item descriptions.

3.2.5. Perceived service quality

Perceived service quality was assessed using the assurance dimension of Parasuraman et al. (1988) SERVQUAL scale. Consistent with previous research, the assurance dimension is the SERVQUAL component that can be best projected without an actual service experience (Magnini et al., 2013). The other dimensions of SERVQUAL such as tangibles and empathy are difficult to project without a consumption experience. The four assurance items exhibited adequate reliability in the current study (Cronbach Alpha = .82).

3.3. Sample adequacy and experimental realism

Regarding the sample's ability to relate to an Italian restaurant setting, of the respondents, all eat in Italian restaurants at least two times per year and 50 percent dine at Italian restaurants more than ten times per year. These figures serve as evidence that this sample population (university students) can adequately relate to the experimental setting (an Italian restaurant). To assess the realism of the experiment, the subjects were asked to respond to the following item: "Other than the fact that menu prices are absent, this looks like the inside of an actual restaurant menu" [strongly disagree = 1; strongly agree = 7]. The menu used in the experiment earned a mean realism score of 5.83.

4. Results

A Multivariate Analysis of Variance (MANOVA) was performed to test the hypotheses. Font style (italicized font/non-italicized font), background color (gold/white), and menu weight (heavy/light) were employed as independent variables, while perceived restaurant scale and perceived service quality were included as dependent variables. For this model, all assumptions for MANOVA were met. For example, first, the independent variables are categorical. Second, the dependent variables are interval variables (Likert-type scales). Third, the assumption of homoscedasticity was tested using a Box's M test. The null hypothesis, equality of covariances, was not rejected due to a Box's M = 23.76 (p = .336); therefore, supporting the equality of covariance or homoscedasticity assumption. Fourth, regarding the sample size, there are more observations than dependent variables in every cell. Fifth, there are no outliers in the experimental cells. Sixth, to test the assumption of equivalent experimental cell sizes, three linear regression models were calculated with the same dependent variables (one dependent variable per regression model) and independent variable as the MANOVA model and consistent results were yielded.

H1a and H1b state that, for italicized font, potential diners will perceive restaurants as more upscale and more capable of delivering higher levels of service quality than restaurants that use menus with a non-italicized font. As indicated in Table 1, results of MANOVA (Wilks' Lambda = .96, $F_{(2,\ 253)}$ = 5.28, p = .006, partial η^2 = .04, observed power = .83) demonstrate statistically

Table 2
Cell sizes of treatment conditions.

Treatment condition	Cell size
Light weight/Non-italicized/White background	34
Light weight/Italicized/White background	32
Light weight/Italicized/Gold background	39
Light weight/Non-italicized/Gold background	35
Heavy weight/Non-italicized/White background	31
Heavy weight/Italicized/White background	30
Heavy weight/Italicized/Gold background	33
Heavy weight/Non-italicized/Gold background	31

significant effects of font style on perceived restaurant scale ($F_{(1, 254)} = 6.65$, $p = .010$, partial $\eta^2 = .026$) and perceived service quality ($F_{(1, 254)} = 8.96$, $p = .003$, partial $\eta^2 = .034$, observed power = .85). Participants perceived the italicized menu font as a more upscale restaurant ($M_{\text{italicized}} = 5.34$, SD = .11) than non-italicized menu font ($M_{\text{non-italicized}} = 4.95$, SD = .11). Similarly, perceived service quality of the italicized menu font was higher ($M_{\text{italicized}} = 5.52$, SD = .071) than that of a non-italicized menu font ($M_{\text{non-italicized}} = 5.21$, SD = .072). Thus, H1a and H1b are supported.

H2a and H2b postulate that potential diners will perceive restaurants with a gold menu background color as being more upscale and more capable of delivering higher levels of service quality than restaurants with a white menu background color. For these predictions, the means are in the hypothesized direction, but are not statistically significant. That is, as predicted, the gold menu color was perceived to be from a more upscale restaurant ($M_{\text{gold}} = 5.24$, SD = .10) than the white menu color ($M_{\text{white}} = 5.05$, SD = .11). Likewise, participants reported higher perceived service quality when they were exposed to the gold color ($M_{\text{gold}} = 5.39$, SD = .071), rather than the white color ($M_{\text{white}} = 5.34$, SD = .073). However, results of the MANOVA (Wilks' Lambda = .99, $F_{(2, 253)} = .80$, $p = .45$, partial $\eta^2 = .006$, observed power = .19) indicate that color did not have significant impacts on perceived restaurant scale ($F_{(1, 254)} = 1.59$, $p = .208$, partial $\eta^2 = .006$, observed power = .24) and service quality ($F_{(1, 254)} = .25$, $p = .616$, partial $\eta^2 = .001$, observed power = .08). Therefore, H2a and H2b are not supported.

H3a and H3b predict that potential diners will perceive restaurants with heavyweight menus as being more upscale and more capable of delivering higher levels of service quality than restaurants with lightweight menus. As expected, results of MANOVA (Wilks' Lambda = .97, $F_{(2, 253)} = 4.04$, $p = .019$, partial $\eta^2 = .031$, observed power = .72) show statistically significant influences of menu weight on perceived restaurant scale ($F_{(1, 254)} = 7.12$, $p = .008$, partial $\eta^2 = .027$, observed power = .76) and perceived service quality ($F_{(1, 254)} = 4.72$, $p = .031$, partial $\eta^2 = .018$, observed power = .58). Participants exposed to heavy weight menus reported a higher level of perceived restaurant scale ($M_{\text{heavy}} = 5.34$, SD = .11) than those exposed to light-weight menus ($M_{\text{light}} = 4.94$, SD = .10). Similarly, perceived service quality was higher of those who were exposed to heavy weight menus ($M_{\text{heavy}} = 5.48$, SD = .073) than that of light weight menus ($M_{\text{light}} = 5.25$, SD = .070). Hence, H3a and H3b are supported.

5. Discussion

It's true: books *are* initially judged by their covers, companies *are* initially judged by their logos, products *are* initially judged by their packaging, and restaurants *are* initially judged by their menus. The physical attributes of a restaurant menu do transmit signals to the potential diner regarding levels of scale and service. Anecdotal evidence is scattered, but the current study employs a between subjects experimental design to provide empirical evidence.

The present study applies a grounded cognition model to demonstrate the effects of menu design elements such as menu font style and menu's physical weight on the restaurant's scale and service capability perceived by the customers. The study finds that italicized font used in menu descriptions has a significant influence on the guests' perceptions that a given restaurant will be upscale and will provide quality service. The study also shows that heavier weight menus signal an upscale feel and high service standards than do lighter ones. However, based on these data, the gold colored menu paper commonly used by many upscale food and beverage operations do not have significant impacts on the guests' scale and assurance ratings. It is prudent to note that the means for these constructs were in the correct direction, but did not reach significance in the current data collection iteration; thus, additional data collection might be warranted to further explore the potential influences of menu background color. For example, additional research might consider menu background colors other than white and gold. One possible explanation for the non-significant color findings in this study is that in a restaurant context solid white can be used to signal an upscale image (e.g., white table clothes, white chef jackets, white tuxedo shirts worn by service staff, etc.). Thus, both gold and white background colors on a menu might signal an upscale environment.

At a conceptual level, this research contributes to existing knowledge in menu design in several ways. First, the theoretical significance of the grounded cognition approach lies in its recognition of the dynamics of menu design element-to-customer bodily interactions (i.e. visual cues and physical movement involved with holding/carrying weight). Bitner (1992)'s servicescapes framework, often utilized by hospitality scholars to explain the roles of environmental cues in individuals' perceptions, does illustrate the nature of the built physical surroundings, but the current study takes a more fine-grained approach to examine specific effects of physical menu design. Like many other types of service encounters, customers in restaurant encounters usually experience visual cues along with touch cues. Therefore, a grounded cognition approach portrays menu design-to-customer interactions at service encounters as a process influenced both conscious and subconscious cues. Second, the present study fills a gap found in extant literature in that empirical research is scant on customers' perceived scale and service quality in menu-to-customer interactions at restaurants.

On a practical level, this research has several important managerial implications for the restaurant industry. First, this study brings to the attention of practitioners the significance of menu designs in driving restaurant's scale and service capability as evaluated by the customers. We suggest that those restaurant practitioners striving for an upscale and high service quality image should use the fancy font style in their menu descriptions and should couple the fancy font with a heavier weighted menu. Also, future research is warranted to explore whether such cues might help consumers justify high menu prices or can aid consumers in feeling a sense of value with items that have mid to low price points. Cheesecake Factory would be an example of a restaurant using a heavier menu with normal fonts in menu descriptions, but our results find that the two variables present simultaneously are what best drive consumer perceptions. In other words, the heavy menus coupled with italicized font was the best performing combination of elements in driving both upscale perceptions and anticipated service quality perceptions. It is fairly straightforward for practitioners to implement and customize their menu designs at a relatively low cost. An Internet search of menu jacket supplier websites reveals that heavier jackets often cost only $2–3 more than lighter jackets [depending on style]. Alternatively, the heavier weight can be achieved even more economically via the use of plexiglass inserts as in this experiment which costs about $1 per menu. When the plexiglass insert is sandwiched between two sheets of paper inside a

menu jacket, the insert cannot be seen, but can provide the needed weight required for the menu to signal higher scale and service standards.

Also from a practitioner perspective, many restaurants display their physical menus at or near their front entrances so that individuals can review the menu when deciding whether or not to eat at the establishment. If the menu is located within a display case then physical weight would not apply to such scenarios, but font style and background color are signaling devices that are used by restaurateurs in such circumstances. Therefore, the results of this study suggest to restaurateurs that font style can successfully signal scale and service quality, but background color may not. Along these lines it is also prudent to note that some restaurants may not wish to signal upscale or high service cues due to the associated elevated expectations that might come in conjunction with such signaling. Conversely, others would want to engage in such signaling in order to help justify their pricing structures. In other words, strategies and tools used by restaurateurs are situation-specific.

Restaurant operators and menu planners should note, however, that the use of fancy or italicized fonts will backfire if the use of such reduces the readability of their menus. Not surprisingly, several font studies have found that difficult to read font styles are not well-received by individuals (Oppenheimer, 2006; Song and Schwarz, 2008; Thompson and Ince, 2013). Thus, if a restaurateur desires to signal an upscale image and high service standards through the use of font style, the style must be easily legible.

Several limitations of the present research deserve considerations and provide suggestions for future studies. First, the external validity issue should be acknowledged. While conducting the experiment on actual diners (as opposed to a student sample) in an operating restaurant would have provided an alternate approach, the lack of controls regarding physical environments and customer interactions with service providers might have confounded the results. Moreover, as with any experimental design, this study was limited to the manipulations of the given experimental factors. Thus, as an extension, for example, future research that examines the interaction effect of menu's physical weight and texture (rough vs. smooth) would be theoretically and practically relevant to our discipline. Such questions are practically relevant because advances in word processing and printing technologies make is easier for restaurants to print their menu sheets internally and then attach them to unique types of backings that help reinforce brand identity. For example, a smoke-house style restaurant can print their menus and attach them to commercially available cedar planks; a brick-oven pizza restaurant on wooden pizza peels; an Asia or tropical restaurant on bamboo matting; or a seafood restaurant on netting.

Furthermore, the effect sizes of font style and physical weight associated with service quality perceptions, though statistically significant, are small in this study. However, small effect sizes are not an uncommon phenomenon in grounded cognition (Juhasz et al., 2011) or in the service literature (De Matos et al., 2007). Fritz et al. (2012) acknowledge that observed effects sought in most experimental research are likely to be small. Thus, future research is warranted to identify other intervening variables in the relationships among these constructs.

Also with regard to future research extensions, while the physical menu is a signaling device with a consumer, other initial signaling devices include the restaurant's exterior signage (Magnini et al., 2011) and the level of rapport building efforts displayed by the greeter or server who delivers the menu (Hyun & Kim, 2014). Future research is, therefore, warranted that examines how these other initial signaling devices interplay with cues sent via the physical menu. For instance, would fancy font on a sign interact with fancy menu font to help reinforce an upscale brand positioning? Or, would the formal dress uniform of a greeter interact with fancy menu font to help reinforce an upscale brand positioning? It seems reasonable to predict the stand-alone signaling effects of such cues, but a well-crafted experiment could also test potential interactional or multiplier effects. The restaurant business is hyper-competitive, thus, extending our current understanding of how consumers' perceptions are shaped during the initial stage of the restaurant experience is both theoretically and managerial relevant. Understanding how these initial perceptions carry forward to consciously and subconsciously influence subsequent stages in the same experience would also be a meaningful contribution to our current body of knowledge.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.ijhm.2015.11.001.

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