



Smelling the books: The effect of chocolate scent on purchase-related behavior in a bookstore



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ABSTRACT

The aims of this research were to (1) explore the different effects of an ambient scent of chocolate on general approach versus goal-directed behavior, and (2) investigate whether an ambient chocolate scent diffused in a retail environment has a positive effect on consumers' behavior toward thematically congruent products. A field study with 201 participants shows that a chocolate scent positively influences general approach behavior and negatively influences goal-directed behavior in a bookstore. Moreover, when gender is controlled for, the chocolate scent improves approach and buying behavior toward thematically congruent books and decreases approach and buying behavior toward incongruent books. Sales figures also provide some indicative support for the findings.

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Scents can influence people's attitudes and behavior (e.g., Holland, Hendriks, & Aarts, 2005). The scent of chocolate, for instance, evokes pleasure and arousal for most consumers (Knasko, 1995) and changes the behavior of visitors in a (cyber)shop. They stay longer, and they examine products they have picked up for a longer time (Vinitzky & Mazursky, 2011). Not surprisingly, a growing number of marketing managers have shown interest in the use of scents in a variety of marketplace contexts, such as movie theaters (Elliott, 2007) and retail store environments (Smith, 2009). Although research on ambient scent effects is substantial, investigators have paid relatively little attention to the combined effects of the store, its products, and scent (Krishna, 2012). The current study attempts to fill this research gap in two ways: (1) by examining possible differences in the effects of a chocolate scent on general approach behavior versus goal-directed behavior, and (2) by further unraveling the presently mixed results of thematically (in)congruent scent effects.

1. Chocolate as a pleasant ambient scent

In a retail setting, previous research has shown that ambient scents influence consumers' affective and cognitive reactions as

well as their approach behavior toward products and stores (e.g., Spangenberg, Crowley, & Henderson, 1996; Ward, Davies, & Kooijman, 2007). A well known theoretical basis for studying ambient scent effects is the Stimulus-Organism-Response paradigm (Gulas & Bloch, 1995; Mehrabian & Russell, 1974). This model states that affective and cognitive responses triggered by an ambient scent mediate the effects of the scent on approach behavior. In line with this model, research has found that the presence of a pleasant ambient scent triggers a positive affective reaction (e.g., Baron, 1997; Doucé & Janssens, 2013) and/or a cognitive reaction such as enhanced attention, memory, and evaluation (Lwin, Morrin, & Krishna, 2010; Morrin & Ratneshwar, 2003). These affective and cognitive responses in turn lead to approach behavior, such as staying longer in the store and examining more products for a longer period of time (Vinitzky & Mazursky, 2011). Thus, a pleasant ambient scent may shift consumers' shopping goals from searching for specific products they want to buy (i.e., goal-directed behavior) to exploring stores in general and in detail (i.e., general approach behavior).

In this research, we focus on the scent of chocolate. Consumption of chocolate is known to positively influence mood (Parker, Parker, & Brotchie, 2006), and even the mere scent of chocolate leads to a higher positive mood and higher arousal (Knasko, 1995). Besides these affective reactions, the scent of chocolate may also elicit cognitive reactions. Especially the aroma of chocolate, compared to smells of other food, changes activity in the human central nervous system (Martin, 1998). The scent of chocolate can also reduce consumers' attention, perhaps implying that during the

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shopping trip consumers evolve from shopping for a specific product to enjoying the whole shopping experience. Combining these findings with the prediction of the Stimulus-Organism-Response paradigm, we assume that the scent of chocolate will lead to approach behavior. More specifically, we expect that:

H1: The presence of an ambient chocolate scent will have (a) a positive influence on general approach behavior, and (b) a negative influence on goal-directed behavior compared with no ambient scent.

2. Thematic congruency effects

The ambient scent model of Gulas and Bloch (1995) stipulates that the relationship between ambient scent perceptions and consumer responses can be moderated by congruency between the scent and the store's offerings. Several studies have revealed that scent has a positive effect only when it is congruent with the targeted product (e.g., Bosmans, 2006; Mitchell, Kahn, & Knasko, 1995), even when the product itself has no inherent scent. For example, approach behaviors of shoppers for men's and women's clothing increased when a gender-congruent scent was present in the store (Spangenberg, Sprott, Grohmann, & Tracy, 2006). Thus, only when the scent matches the product an effect can be expected.

In this study, we take a look at thematic congruency effects. These effects can be explained by odor priming, which means that when consumers perceive a scent, an automatic knowledge activation process may (unconsciously) begin (Schifferstein & Blok, 2002). A scent can prime certain concepts to consumers, and once these constructs are activated, consumers are more sensitive to subsequent congruent elements, which often lead to corresponding behaviors (Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005). For example, when consumers smell chocolate, concepts associated with chocolate, such as cooking, become more readily accessible to the consumer's mind and cause consumers to react differently when encountering a cookbook than if they had not smelled chocolate (Schifferstein & Blok, 2002). To our knowledge, only two previous studies have investigated the effect of thematic congruency between an ambient scent and the products offered in the store. These studies had mixed results. Fiore, Yah, and Yoh (2000) concluded that consumers are more likely to purchase sleepwear, and are willing to pay more for these products in the presence of a congruent fragrance than in the presence of an incongruent fragrance. In contrast, Schifferstein and Blok (2002) showed that ambient scents (e.g., grass) had no effect on the sales of incongruent magazines (e.g., women's magazines) and congruent magazines (e.g., nature and soccer magazines). However, even though the selected magazines were very gender-specific, the study did not take gender into account. Moreover, only the sales of the magazines were measured, and no other data on approach behavior were collected. An ambient scent may also increase approach behavior toward congruent products, potentially resulting in increased sales in the long run.

The current study focuses on the thematic (in)congruity effects of a chocolate scent on observed approach and buying behavior (including sales) in a bookstore. More specifically, this work extends previous research by (1) observing actual behavior rather than using self-reported data, (2) controlling for gender, and (3) selecting broad and popular product categories (i.e., book genres). Taking the above into account, we expect:

H2: The presence of an ambient chocolate scent will lead to more (less) approach and buying behavior toward thematically

congruent (incongruent) books compared with no ambient scent.

3. Method

3.1. Scent selection

In line with the arguments listed above, we selected a chocolate scent to be diffused in the store. A first pretest was conducted to verify the affective and arousing quality of the chocolate scent used in this study. Twenty participants (10 men and 10 women) were asked to sniff the scent (which was put on a cotton-tipped stick in a dark glass bottle) and to evaluate its pleasantness and its level of arousal on a 7-point semantic differential scale (i.e., unpleasant/pleasant and unaroused/aroused). Respondents found the chocolate scent pleasant ($M = 5.80$, $SD = .89$), significantly different from the scale midpoint of 4, $t(19) = 9.00$, $p < .001$, and having an average arousing effect ($M = 3.70$, $SD = 1.13$), not significantly different from the scale midpoint of 4, $t(19) = -1.19$, $p = .25$.

A second pretest was carried out to determine the intensity of the scent. If consumers think that a source other than the store or product, such as an ambient scent, influences their responses, they may correct for this influence on their behavior (Bosmans, 2006). Therefore, the ambient scent should not be salient. Before the experiment, the chocolate scent was dispersed in the bookstore at different levels of intensity and for several durations. Forty-eight customers replied to two questions: *Did you notice something special in the store atmosphere?* and *Now that we have mentioned the presence of a scent, do you detect the scent?* (Doucé & Janssens, 2013). The first question served as a test of whether respondents spontaneously reported scent-related elements. To determine an appropriate intensity of scent manipulation in the actual study, the intensity of the scent was lowered until none of the customers spontaneously noticed the chocolate scent. When we told those customers a scent was present, they noticed the scent and could all identify it as chocolate.

3.2. Incongruent and congruent book genres

A third pretest with 36 students was carried out to verify which book genres the respondents saw as most (in)congruent with the chocolate scent. More specifically, we wanted to know to what extent people believe that chocolate corresponds to a certain book genre. The students rated the congruency between chocolate and 10 book genres (i.e., *Comics & Graphic Novels; Romance Novels & Romantic Literature; Art & Photography; People & Society; Food & Drink (Cooking); Gardening, Animals, & Nature; Economy, Management & Law; Crime, Thrillers, & Mystery; History; Travel & Tourism*) on a 5-point Likert-type scale ranging from 1 = *not at all* to 5 = *extremely*. A repeated measures ANOVA was carried out, Greenhouse–Geisser test statistic: $F(6.03, 211.02) = 49.08$, $p < .001$, and indicated that the two genres most congruent with chocolate scent were *Food & Drink (Cook) Books* ($M = 4.36$, $SD = .80$) and *Romance Novels & Romantic Literature* ($M = 3.78$, $SD = 1.15$). These two genres differed significantly from all others (highest p -value = .002). Evidence for choosing these two as the most chocolate-congruent book genres was also found in a multiple-response analysis, in which participants indicated the four genres they thought fit best with the scent of chocolate. The top two, *Food & Drink (Cook) Books* and *Romance Novels & Romantic Literature*, were chosen 94.40% of the time.

We carried out a similar analysis with respect to the least congruent book genre. Of the four book genres that were rated least congruent with chocolate (mean below 2), *History* ($M = 1.58$,

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