The Temperature Premium: How Physical Warmth Increases Product Valuation

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In four experiments involving the evaluation of various products and different temperature manipulations, we found that the experience of physical warmth increases product valuation, demonstrating the existence of a temperature premium. The results suggest that this effect is driven by consumers’ positive emotional response toward target products under physical warmth.

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New Insights into the Causes and Consequences of Unplanned Purchases

Paper #1: Capturing the “First Moment of Truth”: Understanding Point-of-Purchase Drivers of Unplanned Consideration and Purchase Using Video Tracking
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Paper #2: Boosting Promotional Effectiveness with Thoughtful Product Displays
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Paper #3: The Temperature Premium: How Physical Warmth Increases Product Valuation
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Paper #4: The Benefits of Retail Therapy: Choosing to Buy Alleviates Sadness
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SESSION OVERVIEW

According to a recent 2010 study by Booz & Co., 83% of Consumer Packaged Goods companies planned to boost their spending on shopper marketing in the next three years, and 55% of the companies ranked shopper marketing as their top investment. These efforts are increasingly focused on stimulating unplanned purchases.

The proposed session brings together four papers that provide new insights into the causes and consequences of impulse buying and shopping more broadly. The session begins with Huang, Hui, Inman, and Suher, who use advanced portable video-tracking technology to track the in-store behavior of 250 shoppers. They propose and test a comprehensive framework of shopping-trip-level and point-of-purchase drivers of unplanned purchases. This is followed by two papers that delve into specific situational factors that influence what shoppers buy in a store. Specifically, Bertini, Pirc, and Valenzuela investigate how different shelf-space arrangements in the retail environment (i.e., vertical vs. horizontal vs. random) influence shoppers’ propensity to buy hedonic versus utilitarian products. Zwebner, Goldenberg, and Lee examine the effect of a sensory factor—temperature—on shoppers’ valuation of a variety of products. Both groups of researchers also study and discuss the psychological mechanisms that underlie their respective effects. Finally, Rick, Pereira, and Burson examine a phenomenon that drives many unplanned purchases—retail therapy—and explore whether and why shopping when distressed actually helps to alleviate distress.

Overall, these papers highlight several new insights into the causes and consequences of unplanned purchases using a diverse set of research methodologies (surveys, field and incentive-compatible lab experiments, video-tracking) and explore a variety of cognitive and affective processes (fluency, congruency, emotional attachment, emotion regulation). Given the relevance of these effects to consumers’ daily lives and marketers’ bottom lines, this session should be of interest to a wide range of psychologically- and managerially-minded consumer researchers who are interested in retail environments, sensory marketing, fluency, emotion and decision-making, and anyone who is fascinated by the factors that can affect their shopping and buying behavior.

Capturing the “First Moment of Truth”: Understanding Point-of-Purchase Drivers of Unplanned Consideration and Purchase Using Video Tracking

EXTENDED ABSTRACT

The majority of grocery purchases are unplanned at the category level (Inman et al. 2009). Because of the economic importance of unplanned spending, manufacturers and retailers alike are very interested in understanding in-store drivers of unplanned purchases in order to optimize their shopper marketing strategies (Grocery Marketing Association study, 2007). They are especially interested in understanding shopping behavior at the point of purchase, termed by Procter & Gamble as “the first moment of truth”. In particular, given the importance of product consideration in product purchase (Hauser and Wernerfelt 1989), retailers try to identify trip- and point-of-purchase-level factors that lead shoppers to make more unplanned considerations, and raise the likelihood that these considerations will turn into actual purchases.

With a few notable exceptions (e.g., Stilley et al. 2010), previous academic research on unplanned purchases often relies on scanner data (e.g., Inman et al. 2009). Typically, a shopper’s purchase, as recorded by scanner data, is compared to an entrance survey to identify whether a certain purchase is planned or unplanned. What happens during the trip (e.g., how a shopper considers and purchases from each product category), however, is not recorded. As such, previous studies are typically limited to studying the influence of demographic (e.g., gender) and psychographic (e.g., impulsivity) factors on unplanned purchases. Point-of-purchase behaviors along the shopping path are rarely considered. In this research, we address two important questions about unplanned considerations and purchases. First, what shopping trip-level characteristics are related to a higher number of unplanned considerations? Second, for each unplanned consideration, what aspects of point-of-purchase behavior are related to a greater likelihood of conversion to purchase?

We first hypothesize that both the length of the shopper’s travel path and the extent to which she follows the most efficient path to obtain her planned items are associated with the number of unplanned considerations she will make. Specifically, the longer the distance that a shopper travels in the store, the more in-store stimuli she will get exposed to, which may in turn trigger forgotten needs and lead to unplanned purchases (Granbois 1968). Thus, we hypothesize that a longer in-store travel distance is associated with more unplanned considerations. We then predict that when grocery shoppers do not plan forward efficiently to take the shortest path connecting all the products they plan to buy, they may focus on the actions that maximize immediate utility rather than ones that maximize utility over a relatively longer time horizon (Hutchinson and Meyer 1994). This diminished regard for future consequences is often hedonically driven and correlates with a powerful and persistent urge to buy immediately (Rook 1987). Thus, we hypothesize that shoppers who take a less efficient shopping path through the store are likely to engage in more unplanned considerations.
We then predict that a few consideration characteristics can be related to whether an unplanned consideration will convert into an actual unplanned purchase. First, the wide variety of sensory stimuli presented in grocery shoppers’ decision environment might activate their important shopping goals and therefore increase their engagement in a product purchase (Celsi and Olson 1988). Since this heightened product engagement generally leads to greater purchase intentions (Bloch and Richins 1983), we expect that the more engaged a shopper is during an unplanned consideration, the more likely it is to result in a purchase conversion. Specifically, we hypothesize that longer consideration duration and more product touches, both of which are indicative of higher engagement (Peck and Childers 2003), is associated with a higher likelihood of a purchase conversion.

We then hypothesize that a “deep” consideration where fewer products are considered in greater amount of detail may be more likely to result in a purchase conversion than a “wide” consideration where more products are considered within the same amount of time. By focusing their attention on a small number of products, shoppers may feel more involved with the specific product, which makes them more likely to purchase it (Bloch and Richins 1983). In contrast, by having more products in the field of view, shoppers could easily suffer from “choice overload” and become less likely to make a purchase (Iyengar and Lepper 2000). Therefore, the fewer shelf displays viewed by the shoppers allow them to be more focused on certain products (i.e., a “deep” type of consideration) and thus more likely to make an unplanned purchase. In addition, by physically standing closer to the product shelf, the shopper’s field of vision will necessarily contain fewer products.

Finally, shoppers may reference in-store circular, coupons, or interact with store employees while they are engaged in an unplanned consideration. Shoppers’ ongoing information search during a particular decision results from different motives such as obtaining tangible consumer benefits or seeking hedonic feelings (e.g., Punj and Staelin 1983). Since outcomes of both motives lead to a higher likelihood of product purchase (Rook 1987), we hypothesize that referencing external information relevant to the current product under consideration relates to greater purchase conversion.

We tested these hypotheses in a field study that was conducted in a medium-sized grocery store located in a northwestern U.S. city, where we had around 250 shoppers wear portable video cameras to observe each incidence of their point-of-purchase decision making process. We also collected their shopping intentions, and gathered relevant demographic and psychographic information by asking them to complete both an entrance and an exit survey. Eyecam videos were then coded and analyzed. Consistent with our hypotheses, we find that longer in-store travel distance and lower shopping “efficiency” lead to more unplanned considerations. We further show that an unplanned consideration is more likely to develop into an actual purchase if a shopper (i) spends more time in consideration, (ii) touches more products, (iii) references external information (e.g., circular, coupon, smart phone), (iv) stands closer to the shelf, (v) views fewer product shelf displays, and (vi) interacts with the store staff. Managerial implications of our findings are discussed.

Boosting Promotional Effectiveness with Thoughtful Product Displays

EXTENDED ABSTRACT

Options available to consumers are typically displayed in a two-dimensional “canvas.” Prior research shows that there is indeed a difference in consumers’ reactions to displays in which products are oriented vertically or horizontally (Valenzuela and Raghunath 2009). However, despite the importance of shelf placement in consumers’ decisions, consumer researchers have paid little attention to it (but see Chandon et al. 2009; Dréze, Hoch, and Park 1994). This paper adds to the literature by showing that firms can improve the effectiveness of promotional campaigns by managing the orientation of product displays. Key to our theory is the distinction between goods with a high hedonic or utilitarian content. We find that any orientation, vertical or horizontal, boosts the sales lift of a good that is primarily hedonic, while only vertical orientation is desirable when the discounted good is mostly utilitarian in nature.

We propose that product display orientation, horizontal or vertical, influences decisions through two different mechanisms: fluency and congruity (Hsee and Rottenstreich 2004). Fluency is linked to the psychological cost of the decision making process. The experience of difficulty accompanying a decision process may influence consumers’ evaluation of the decision outcome (Novemsky et al. 2007). If consumer decision-making is fluent, the positive experience that accompanies the process of choosing becomes an input to the evaluation of the choice itself making choice more likely. We believe that the mere existence of order in a display of choice options will enhance fluency as consumers find it easier to access information before making a decision. Congruity, by contrast, is related to the feeling that the obtained information is right. The literature shows that when consumers find schema-consistent information they tend to use simple heuristics instead of engaging in more systematic processing (Sujan, Bettman and Sujan 1986). For example, a possible simple heuristic identified by Inman, McAlister and Hoyer (1990) was that products placed at the end of the aisle are considered a good deal, even when they are not.

This paper investigates whether product display orientation effects are different for products with high hedonic and utilitarian content (Dhar and Wertenbroch 2000). Consumers deciding on hedonic goods are expected to be processing more affectively and may favor perceptual inputs in their decision-making such as the feeling of fluency. If an ordered display by itself is able to enhance feelings of fluency, we would expect display order (independent of its orientation) to enhance sales and, thus, the size of the promotional lift. By contrast, when consumers buy utilitarian goods, they tend to process information more analytically, and cognitive determinants such as congruency may become relevant. In this context, we expect that only display order that is consistent with consumer shelf schemas would lead to a larger promotional lift. The literature supports consumers are most aware of the vertical shelf schema, which accounts for “top-bottom” or vertical order (Valenzuela, Raghuram and Mitakakis 2012). We test this pattern of effects using an in-store field experiment and then explore the proposed underlying mechanism using a controlled lab experiment.

A field experiment tested the hypothesized pattern of effects at a large European grocery retailer. It was conducted as an end ofaisle promotion with 58 SKUs from a regular assortment of 17 product categories at 10 test stores together with 10 control stores to enable comparison of stores of similar type, size, traffic, location and presence of competitors. The field test was implemented as regular promotional activity, and the orientation of the products on the promotional display represented three conditions: random, horizontal or vertical (Figure 1). We measured quantities sold in the pre-promotion period, during promotion and after promotion period. All three periods had equal lengths of 13 days. Analysis corresponds to the variable Promotional Lift or the ratio of the quantity sold during the promotional period and the quantity sold before the promotional period. Prior to the field test we pre-tested consumers’ perceptions
of the extent of hedonic and utilitarian content of the 17 different categories. Product type variable was defined as (Hedonic – Utilitarian) ratings and named HU.

We performed three spotlight analyses exploring the difference in promotional lift in the three order conditions and two product types: more hedonic (mean centered HU + one standard deviation) and less hedonic goods (mean centered HU – one standard deviation). Results revealed that utilitarian products (-1 SD) enjoyed a larger promotional lift when displays were ordered vertically than horizontally or randomly (Mvertical = 3.04, Mhorizontal = 2.16, Mrandom = 2.40). On the other hand, in the case of hedonic products (+1 SD) both vertical and horizontally ordered displays provide larger promotional lifts than random displays (Mvertical = 3.73, Mhorizontal = 3.50, Mrandom = 2.87). We performed a nested regression providing simultaneous test for all the proposed patterns of results controlling for additional variables influencing promotional lift such as expenditure in other promotional elements: Hedonic goods have higher promotional lift compared to utilitarian goods. Vertical orientation increases promotional lift for both hedonic and utilitarian goods. Horizontal orientation increases promotional lift only for hedonic goods.

Overall, when decisions involve hedonic goods, consumers process more affectively. Any ordered display despite its orientation generates fluency, which enhances promotional sales. On the other hand, when the decision involves utilitarian goods, consumers process more analytically and congruity matters. In that case, it is only the more prevalent vertical orientation that enhances promotional sales.

The Temperature Premium: How Physical Warmth Increases Product Valuation

EXTENDED ABSTRACT

A variety of environmental factors in a store can influence how consumers shop and what they buy (Bitner 1992; Kotler 1973; Krishna 2011). However, the impact of an important dimension of our physical surroundings—temperature—on consumer behavior has been relatively little examined (for an exception, see Hong and Sun 2012). In the present research, we focus on this topic and, in particular, examine the influence of temperature on consumers’ product valuation.

Recent research has shown that temperature is an important factor in interpersonal relationships (Kang et al. 2010; Williams and Bargh 2008). The findings in this literature share the main idea that it is warmth, and not coldness, which leads to an individual’s favorable attitudes towards others. Given this association between physical warmth and positive feelings, it is likely that warmth will also increase favorable attitudes in the consumption arena. Drawing on this idea, we suggest that warmth generates favorable emotions which in turn increase product valuation.

The first two experiments were designed to test the basic effect of temperature on product valuations. In experiment 1A, 98 participants were seated in either a pre-warmed or a pre-cooled room (adjusted to 26°C or 18°C respectively). Next, they evaluated a varied set of 11 consumption products (i.e., a pack of M&Ms candy, a wireless computer mouse, a can of Coca Cola, a six-pack of Duracell batteries, a pampering massage, a CD of a popular singer, a two-liter jug of milk, a cup of coffee, a container of popcorn, Dove bath gel, and a Gap t-shirt). We found that participants who evaluated these products in ambient warm temperature were willing to pay more for the products (standardized M’s of .13) than those who evaluated them in cool temperature (standardized M’s of -11; t(96) = 2.26, p = .026).

In experiment 1B, we used a different temperature manipulation, asking 46 participants to touch a warm (vs. cool) therapeutic pad as part of an initial study in which they had to evaluate a new product. Next, in a second purportedly unrelated study, participants were asked to indicate their willingness-to-pay for both a hedonic product (a slice of chocolate cake) and a utilitarian product (batteries). Again, those who had experienced physical warmth were willing to pay significantly more for both products, as compared to those who had experienced physical coolness (Mwarm = 16.13 vs. Mcool = 11.85; t(44) = 3.41, p = .001). Together with experiment 1A, this experiment shows that physical warmth increases product valuation, demonstrating the existence of a temperature premium.

The purpose of the next two experiments was to examine the underlying process for this temperature premium. Experiment 2 was designed as a mediation study which involves real consequential choice, hence examining the external validity of the temperature premium phenomenon. Sixty participants touched a warm (vs. cool) pad as in experiment 1B, and then evaluated a real pen and rated their current affective reactions towards the pen (using a seven-item scale [Derbaix 1995]; α = .85). Finally, to thank them for their participation, participants were given a choice between receiving the pen and receiving 3 NIS. The results again suggest that valuation of the pen increased in the warm condition: 77% of participants in the warm condition chose the pen over money, compared to 47% in the cool condition (χ² = 5.71, p = .017). Importantly, participants’ affective reactions mediated the positive effect of warmth on product valuation as indicated by a bootstrap mediation analysis (95% CI: [.02, 1.43]).

Experiment 3 was designed to further test the role of affect in the temperature premium phenomenon by employing the findings of recent research indicating that emotional reaction is associated with reduced perceived distance (Van Boven et al. 2010). Specifically, we investigated whether physical warmth would also affect distance perception, which would implicate the role of emotions in the observed effects. An online pretest demonstrated that participants experiencing warmest estimated their distance from Paris to be closer than the control group (MWarm = 3439.9 km vs. Mcool = 4130.2 km; t(120) = -2.44, p = .016). The results of experiment 3 revealed a similar pattern in a more controlled (lab) setting. Specifically, 66 participants were first exposed to a warm versus cool pad as before, and were then asked to estimate their distance from a pen that was placed 40 centimeters in front of them. We found that exposure to warm (vs. cool) temperatures reduced participants’ perceived distance to the pen (MWarm = 26.19 cm vs. Mcool = 38.28 cm; t(76) = -3.86, p < .001), further supporting the affect-based account. Additionally, physical warmth again increased valuation of the pen (MWarm = 8.56 NIS vs. Mcool = 7.31 NIS; t(76) = 2.02, p = .047), replicating our previous findings.

In summary, using a variety of products and temperature manipulations, the current work shows that physical warmth increases product valuation, demonstrating the existence of a temperature premium. Importantly, the findings suggest that consumers’ positive emotional response to target products in the presence of physical warmth underlie these results. Besides contributing to the atmo-
spherics and sensory marketing literature, our findings also add to the growing literature on embodiment effects. Finally, we offer practical implications by demonstrating the positive influence of appropriate physical warmth in the buying environment.

The Benefits of Retail Therapy: Choosing to Buy Alleviates Sadness

EXTENDED ABSTRACT

How do people regulate their negative affect? Psychologists have documented several common (and often ineffective) responses to negative affect (e.g., rumination). Consumer researchers have also argued that negative affect encourages shopping, a phenomenon commonly known as “retail therapy.” We examine whether and why retail therapy is an effective way to regulate negative affect. We focus on shopping’s potential to alleviate sadness in particular, as previous research has demonstrated that sadness can increase the desire to buy (Cryder et al. 2008; Lerner, Small, and Loewenstein 2004).

Qualitative research supports the notion that retail therapy can help to alleviate sadness (e.g., Atalay and Meloy 2011). While suggestive, prior research on the effectiveness of retail therapy is plagued by at least two important limitations that cloud interpretation of the findings. First, research in this area has not utilized random assignment. Instead, this work has relied on surveys and interviews with people who chose to engage in retail therapy. Without randomly assigning participants to shopping or equally engaging “control” activities, it is unclear whether shopping conveys benefits above and beyond those produced by distraction or the mere passage of time.

Second, research in this area has relied entirely on retrospective reports of how shopping influenced affect. For example, Faber and Christensen (1996, p. 809) administered a questionnaire that assessed the “frequency of feeling each of nine different mood states immediately before deciding to go shopping and how often they were experienced while shopping.” Because “shopping” has many components, including browsing, choosing, paying, acquiring, and consuming, retrospective reports of the effects of “shopping” cannot shed light on which component(s) are necessary for healing to occur.

This is not merely a descriptive shortcoming. Instead, differences in the effectiveness of different components could shed light on why shopping helps to alleviate sadness. To develop hypotheses about why some components will be more influential than others, we consider sadness from an appraisal theory perspective (e.g., Lerner and Keltner 2000). Appraisal theory suggests that the way people cognitively appraise their environment can be both a cause and consequence of different emotions. Smith and Ellsworth (1985) identified six dimensions that best characterize the appraisals that differentiate emotions: the extent to which the current situation is pleasant, predictable, demanding of attention, demanding of effort, under human (versus situational) control, and under one’s own or other people’s control.

Smith and Ellsworth (1985) found that sadness, more than any other investigated emotion, was associated with a perceived lack of personal control. People who are sad are especially likely to view personally relevant outcomes as governed by some combination of other people’s desires and chance. To the extent that these appraisals create or maintain the experience of sadness, aspects of shopping that help to restore a sense of personal control may in turn alleviate sadness.

The ability to choose tends to enhance one’s sense of personal control (e.g., Langer 1975). Because choices are inherent to shopping (e.g., choosing what to buy), shopping may help to restore a sense of control and thus alleviate sadness. In particular, there is reason to expect that choosing to buy will be more likely to restore a sense of control than choosing not to buy. People do not buy the vast majority of products they encounter, so arguably choosing not to buy is the default action in shopping environments. In fact, choosing not to buy when faced with several alternative goods is sometimes referred to as a “no-choice” option (e.g., Dhar 1997). Therefore, we posit that choosing an item to buy is especially likely to alleviate sadness.

Study 1 examined whether merely simulating shopping helps to alleviate sadness. We utilized a hypothetical shopping paradigm to determine whether making buying choices (even without the subsequent attainment of a good) was sufficient to help alleviate sadness.

We collected a baseline measure of affect and then showed a sad video to all participants. Participants were then randomly assigned to either choose which of several products they would (hypothetically) buy (Buyers) or judge which of those products would be most useful for travelling (Browsers). (The buying and browsing tasks lasted the same amount of time.) We then took a final measure of affect.

We found no significant difference between final and baseline levels of sadness among Buyers. Browsers, however, were significantly sadder at the end of the experiment than at baseline. Thus, Buyers were more likely to be “healed” by the end of the experiment.

Study 2 examined whether the benefits of choosing to buy persist when participants must actually part with money to obtain a good (that is, when shopping for real). We also examined whether making a buying decision helps to alleviate anger. Anger is generally as unpleasant as sadness, but is associated with a much greater sense of personal control (Keltner, Ellsworth, and Edwards 1993). Thus, we did not anticipate that making a buying decision, which should help to restore a sense of personal control, would help to alleviate anger.

We paid participants up front for participating and then took a baseline measure of affect. Participants then watched a video previously demonstrated to induce both anger and sadness. We then randomly assigned participants to Shopping or Browsing conditions. In the Shopping condition, participants either bought one of several snacks (Buyers) or did not buy one (Non-Buyers). Buyers did not consume their snack in the lab. In the Browsing condition, participants inspected the same set of snacks and ranked them based on perceived amount of food-coloring (Browsers). We then took a final measure of affect.

Consistent with Study 1, there was no significant difference between final and baseline levels of sadness among Buyers. Non-Buyers and Browsers were significantly sadder at the end of the experiment than at baseline. All participants were significantly angrier at the end of the experiment than at baseline, consistent with our theoretical account.

Taken together, our results do not support the broad notion that shopping alleviates negative affect. Instead, our evidence suggests that buying helps to restore control and alleviate sadness.

REFERENCES


