Center of Orientation: Effect of Vertical and Horizontal Shelf Space Product Position

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Results from five experiments show that i) consumers believe that products offered are ordered according to general, meaningful criteria; ii) consumers hold shared vertical and horizontal price schemas and these schemas translate into quality perceptions; iii) these inferences lead to their belief that items in the middle of an array represent the best price/quality trade-off; iv) this implicit ordering criterion favors the central item as a position-based compromise between price and quality, which leads to a center advantage in choice; v) the effects are attenuated when the schema is less accessible or less diagnostic and when decision goals favor extreme options.

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SYMPOSIUM SUMMARY
Attentional and Inferential Effects of Point-of-Purchase Marketing
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SESSION OVERVIEW
Recent trends in marketing have demonstrated an increased focus on in-store marketing with the hope that it will generate incremental sales at the point of purchase. Despite the importance of this topic, there are still two important unresolved issues: 1) does P-O-P marketing actually work? and, if yes, 2) how exactly does it work?

Although we know that end-of-aisle displays have large effects on consumers, the evidence about the effects of less conspicuous P-O-P activities changes that keep total category shelf space constant is less conclusive. For example, while industry reports claim that the number and position of shelf facings matters, Drèze, Hoch, and Purk (1994, p. 324) concluded that “the benefits from additional facings are non existent” and that shelf position only has a limited influence on sales. There is also no consensus on what is the best location on a shelf, with prior findings supporting an extreme position advantage (Nisbett and Wilson 1977) or a middle position advantage (Christensen 1995; Shaw 2000). Even if P-O-P marketing works, we don’t know how large its effects are compared to the well-known memory-based effects created by advertising and branding.

P-O-P marketing can influence consumers through an attentional and an inferential route. First, P-O-P marketing ensures that the brand is noticed, a necessary condition for purchase. Even then, it is important to determine how much of a brand’s salience is due to bottom-up perceptual features (e.g., packaging color, number and position of shelf facings) and how much is due to top-down memory-based effects (e.g., consumer search goals, past brand usage). Second, the position of a brand on the shelf could affect the inferences consumers make about the product itself. This would be likely if, for example, consumers believe that retailers position brands on the shelf according to general, meaningful criteria but it could also occur outside consumers’ awareness.

Despite the importance of understanding in-store marketing effectiveness and the growing theoretical interest about position effects in consumer psychology (e.g., studies showing the association between vertical position and concepts such as power and God), relatively little research work examines the effect of in-store product position and marketing support on an option’s visual search, consideration and choice. The three papers in this special session are a step forward in the empirical investigation of how in-store marketing affects visual attention and inferences about products. All the three papers are interdisciplinary in the sense that the underlying theoretical questions involve both the economic and psychological aspects of consumer decision making, combining experimental interventions and verbal reports with state-of-the-art eye-tracking data and statistical models, and examine a variety of behaviors (attention, visual search, consideration, choice, and inferences about brand attributes) for existing and fictitious brands.

In the first paper, Chandon, Hutchinson and Bradlow examine the effects of important in-store factors (the number and position of shelf facings) and out-of-store factors (past brand usage, the regular and actual price of the brand, its market share, and the shopping goal of the consumer), on attention, recall of attention, consideration, and choice. They find strong effects of the number and position of facings on attention but that not all attention improvements lead to choice. They also find that recall of attention is not a good proxy for visual attention.

In the second paper, van der Lans, Pieters and Wedel go deeper into measuring the bottom-up and top-down components of brand salience. Drawing on a framework of competitive salience and a model of the visual search process, they estimate the effects of perceptual features (color, luminance, edges) and how these are influenced by consumers’ search goals using eye-movement data. They identify two key sources of brand salience: i) the bottom-up component is influenced by in-store activity and package design; ii) the top-down component is influenced by out-of-store marketing activities such as advertising.

In the third paper, Valenzuela and Raghubir propose that, people hold underlying schemas associated with the position in which options are presented that lead to inferences about the desirability of the options and formation of preferences. They find that consumers believe (inaccurately, as we show) that retailers place brands in decreasing order of price from top to bottom rows and from right to left rows, thus, showing preference for options holding center positions in both orientations as they represent a balanced price/quality tradeoff. Preferences for the middle product are moderated by shopping goals, especially for the vertical orientation, and can be temporarily attenuated through priming, but are robust in the longer term.

Xavier Drèze, the author of the seminal and award-winning paper on the effects of P-O-P marketing, and an authority on retailing, led the discussion.

EXTENDED ABSTRACTS
“Does In-Store Marketing Work? Effects of the Number and Position of Shelf Facings on Attention, Consideration, and Choice at the Point of Purchase”
Pierre Chandon, INSEAD, France
Wesley Hutchinson, University of Pennsylvania, USA
Eric Bradlow, University of Pennsylvania, USA

Marketers are diverting a growing proportion of their promotional budgets from traditional out-of-store media advertising to in-store marketing and retailers are responding by adopting increasingly sophisticated shelf layout and management tools. We already have strong evidence that end-of-aisle displays and large increases in shelf space have strong effects on brand sales (Benmaor and Mouchoux 1991; Curhan 1974; Inman, McAlister, and Hoyer 1990; Wilkinson, Mason, and Paksoy 1982; Woodside and Waddle 1975). The evidence about the effects of less conspicuous in-store marketing changes that keep total category shelf space constant is less conclusive. While industry reports claim that the number and position of shelf facings matters, Drèze, Hoch, and Purk (1994, p. 324) concluded that “the benefits from additional facings are non existent” and that shelf position only has a limited influence on sales. A related stream of research has shown that the position of a brand in a vertical or horizontal retail display influences price and quality expectations and hence brand choice (Christenfeld 1995; Valenzuela and Raghubir 2008). However, these results have only been demonstrated for non-familiar brands or for choices among identical options. More importantly, prior research has not exam-
ined the effects of in-store marketing on visual attention and brand consideration and has not compared its effects with those of out-of-store factors such as past brand usage, shopping goals, or the market share and price of the brand.

The objective of this research was to examine the interplay between in-store and out-of-store factors on consumer attention, consideration, and choice among brands displayed on supermarket shelves. Drawing on research on shelf management effects and on eye movements in scene perception, we developed a framework of the effects of important in-store factors—the number and position of shelf facings—and out-of-store factors—past brand usage, the regular and actual price of the brand, its market share, and the shopping goal of the consumer—on attention and purchase-related behaviors. We tested the predictions derived from this framework in an eye-tracking experiment in which we manipulated or measured all these factors for established as well as for new brands of two categories. The experimental design was a between-subjects fractional design with two within-subject replications (soap bars and pain reliever tablets). We manipulated the number of a facings of each brand (4, 8, or 12), its vertical position (first, second, third, or bottom shelf), its horizontal position (far left, center left, center right, or far right of shelf), and its shelf price (regular vs. discounted). The participants were 348 adult shoppers recruited in shopping centers. They were either asked say which of the 16 brands of soap or of pain relievers they would buy (choice goal condition) or which brands they would consider buying (consideration goal condition). We tracked the movement of their eyes while they were making these decisions and measured their recall of attention and brands past usage.

We find that in-store attention is limited. One quarter of the 16 brands were never looked at and another quarter was only fixated once. Recall of visual attention was a poor indicator of actual attention, as participants forgot 58% of the brands that they had fixated at least once. Only one quarter of the brands was included in the consideration set. We also found that eye fixations increased consideration and choice for the two new brands inserted in the shelf layout. Because participants had never seen these brands before the study, this analysis showed that in-store eye fixations can cause consideration and choice, and are not just driven by memory-based out-of-store factors.

Regression analyses showed that both in store and out-of-store factors influence attention, consideration, and choice, although in-store factors primarily influence attention whereas out-of-store factors primarily influence consideration and choice. Specifically, we found that the number of facings had a strong but marginally diminishing impact on attention, that it had a positive and linear effect on purchase decisions, and that the influence on choice was particularly strong for regular users, for low market-share brands, and for consumers with a choice rather than with a consideration goal. We also found: a) that placing the brand near the center of a shelf (vs. on its extreme ends) and on the top shelves (vs. the bottom shelves) improved attention and purchase decisions, b) that being on the left or right-hand side of the shelf made no difference, and c) that a being on the middle shelves (vs. the top or bottom shelves) helped attention but neither consideration nor choice.

These findings provide insights into four of the five issues identified as important areas for future eye-tracking research in Wedel and Pieters’s (2008) review: 1) studying the interplay between bottom-up salience and top-down informativeness in guiding attention, 2) examining eye movements to other marketing stimuli besides print ads, 3) testing different attention metrics, and 4) investigating the relationship between attention and downstream marketing effects such as purchases. Finally, these findings have methodological implications. Specifically, our findings that not all attention improvements lead to choice and that recall is not a good proxy for visual attention, underscore the importance of combining eye-tracking and purchase decision data to obtain a full picture of the effects of in-store and out-of-store marketing at the point of purchase.

“Competitive Brand Salience”
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Rik Pieters, Tilburg University, The Netherlands
Michel Wedel, University of Maryland, USA

Competitive clutter at the point-of-purchase is intense due to SKU proliferation, brand extensions, me-too products, private labels and copycats. As a consequence, searching brands on supermarket shelves is a daily challenge for consumers. Clutter causes consumers to accidentally pick-up the wrong brands or not to find their favorite brand at all. Therefore, manufacturers and retailers try to make the SKUs of their brands visually salient among competitors through improved package design and advertising. They seek an optimal level of differentiation of their brands and SKUs by balancing the visual salience of each SKU relative to competitors with a unique identity of the entire line of SKUs, at the same time needing to obey established codes about the visual appearance of the category. To support this management task, the visual salience of SKUs and brands needs to be assessed but how to accomplish this is far from obvious: there is no academic literature addressing this problem, but related literatures exist on variety perceptions of assortments and on the overlap within product portfolios.

We intend to fill this gap and afford a detailed analysis of visual competition between brands based on the few seconds that consumers search for them on the shelf. Using eye-movement data collected in a brand search experiment, we develop a model that allows us to assess competitive salience, establish its effects on search performance, and show improvement through marketing.

We assess brand salience using a model of eye-movement recordings, collected during a brand search experiment. During a computer-mediated brand search task for laundry detergents eye-movements were collected for a random sample of 109 regular consumers in the Netherlands (47 males and 62 females between 16 and 55 years of age). Participants were individually seated behind 21-inch LCD computer screens (1,024 x 1,280) on which a shelf with six brands of laundry detergent was shown, four brands with three SKUs each and two brands with two SKUs each (16 SKUs in total). Multiple replications (facings) of SKUs were present to mimic regular shelves at the point-of-purchase. Participants were randomly assigned to one of five conditions of a one-factorial between-subjects design, in which they searched for one out of five different brands. In all cases, the search goal was directed at a specific SKU of a brand (the “tablet” SKU). The sixth brand is the market leader and serves as a baseline. Placement of the brands in the display was rotated across conditions and consumers to eliminate possible location effects, with the same number of facings in all conditions. Participants had a maximum of 10 seconds to find the target brand, and indicated having found the target brand by touching it on the touch-sensitive LCD screen, after which the brand search task ended. Eye-movements, and latency and accuracy of search were recorded.

We propose a conceptual framework of competitive salience and a model of the visual search process, which enable diagnostic analysis of current levels of visual differentiation of brands and SKUs at the point-of-purchase. We develop a brand search model that (a) includes the effects of image features, (b) includes the effects of systematic search strategies on eye-movements, (c) assumes two unobserved states reflecting the localization of brands, respectively their identification through re-fixations. We separate
top-down from bottom-up salience through a combination of experimental design and model formulation. We integrate the effects on search accuracy and latency in the model. Together, this makes it possible to comprehensively assess competitive salience and its effects on search performance.

We thus estimate brands’ salience at the point-of-purchase, based on perceptual features (color, luminance, edges) and how these are influenced by consumers’ search goals from the eye-movement data. We show that the salience of brands has a pervasive effect on search performance. We identify two key sources of brand salience. The top-bottom component is influenced by in-store activity and package design. The top-down component is influenced by out-of-store marketing activities such as advertising.

Our study reveals that about one-third of salience on the shelf is due to out-of-store and two-thirds due to in-store marketing. This underlines that the integration of advertising with packaging strategies should be a key concern. The relatively small top-down influences on salience that we found for some brands in our study may well be attributable to a lack of integration of packaging and advertising strategies for some brands. Although salience of brands has a pervasive effect on search performance, it appears that consumers use only one or two basic features at the same time when trying to find a brand rapidly and accurately. This has important implications for package design and for advertising that has the purpose to increase brand salience on the shelf. Such advertising would need to establish strong associations in memory with a limited number of unique features.

“Center Of Orientation: Effect of Vertical and Horizontal Shelf Space Product Position”
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Does placing a product in a central, peripheral, or extreme-end position, or a top or bottom position systematically affect consumers’ attitudes toward the brand? Surprisingly, this issue has received scant attention from consumer psychologists despite the importance of shelf placement in consumers’ brand choice decisions, a manufacturer’s distribution decisions, and a retailer’s shelf space pricing decisions. Prior research on product placement showed that the spatial positioning of products affects consumers’ inferences about prices (e.g., Inman, McAlister and Hoyer 1990), their allocation of attention across brands (e.g., Chandon, Hutchinson, Bradlow and Young 2007), the number and type of product choice comparisons (e.g., Breugelmann, Campo, and Gijsbrechts 2007), the level of exposure and physical interaction with a good (e.g., Folwell and Moberg 1993), as well as brand sales (e.g., Desmet and Renaudin 1998).

This paper investigates whether, how, and when consumers extract meaning from the position of products in both horizontal and vertical shelf space arrays, and how these inferences translate into their preferences. We test three basic hypotheses: consumers believe products are placed in decreasing order of price from top to bottom rows (H1: verticality) and from right to left rows (H2: horizontality), leading to preferences for center positions in both orientations as they represent a balanced price/quality tradeoff (H3: centrality). Study 1 finds evidence that consumers have shared shelf layout schemas regarding retail practice for verticality and centrality, but not for horizontality: premium brands are on top rows, cheaper brands are on the bottom rows, promoted brands are on the extremes and popular brands occupy central positions. Study 2 shows that verticality and horizontality beliefs do not universally reflect retailers’ pricing practice. Study 3 shows that these schemas affect product inferences: consumers infer that products placed on the top (and on the right) have higher prices and higher quality than those placed on the bottom (or on the left). Accordingly, they prefer positions in the center of both orientations as these represent price-quality compromises.

The next two studies examine moderating conditions for the use of vertical and horizontal shelf space schemas. They test the schema inference hypothesis, which argues that the use of these schemas will be attenuated when accessible information interferes with the schema that is held (H4). They also test the schema diagnosticity hypothesis, which argues that spatial position is used as a function of its informativeness (H5). Each of these hypotheses is examined for both the vertical and horizontal orientation. Results show asymmetric effects for the horizontal and vertical schema: schema inference eliminates verticality effects and attenuates horizontality effects (Study 4), while schema diagnosticity only has an effect on verticality-based inferences (Study 5). The center effect remains robust at an overall level, because even if the specific meaning associated with order changes, the center position may still represent a compromise option. However, the preference for the center of an array is stronger in the horizontal orientation than in the vertical orientation. Finally, mediation analyses demonstrate that verticality effects are perfectly mediated by schematic inferences, while horizontal effects are not. This implies that the use of the vertical schema is contingent on its accessibility and diagnosticity, reflecting that it is a controlled and conscious process (Feldman and Lynch 1988), whereas the use of the horizontal schema may be contingent on its mere accessibility, an effect shown to reflect automatic processes in judgments (Menon and Raghurib 2003). Finally, Study 6 finds that when consumer purchase goals move towards a higher quality/higher price alternative, choice patterns move from the center to the extreme.

REFERENCES


