Center of Shelf Attention: Understanding the Role of Visual Attention on Product Choice

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Two eye-tracking studies and an offline experiment explored the effect of central shelf location on attention and choice. Investigation of the attention process revealed that the central gaze cascade effect, progressively increasing attention focused on the central option predicted choice.

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EXTENDED ABSTRACT
When choosing from an array of products, consumers are more likely to choose the option located in the center (horizontal centrality effect). This effect is demonstrated in various contexts, when choosing among highlights, chairs, bathroom stalls and products in a shelf display (Christenfeld 1995; Shaw et al. 2000). This is a relevant phenomenon for marketers; using eye tracking methodology van der Lans et al. (2008) demonstrated that competitive advantage on the shelf is generated mostly by in-store factors rather than out-of-store factors with a ratio of 2:1. In this research, a positive effect of horizontal centrality on choice was found across three studies and product categories (vitamins, meal replacement bars, and energy drinks). Findings from two eye tracking studies (1 and 2) support a visual attention based explanation of horizontal centrality on choice. Study 3 further demonstrated that the central option in the product category is chosen even when the product is not in the center of the visual field.

What derives the horizontal centrality effect? In recent eye-tracking studies, Chandon et al. (2007, 2009) found that brands located in the (vertical and horizontal) center of a shelf are noted more and chosen more often, supporting an attention based explanation. Valenzuela and Raghubir (2009) proposed center-stage effect as an explanation: Consumers hold the lay belief that in retail contexts the products placed in central positions are more popular, reflecting the overall quality of the product, which leads consumers to systematically prefer items in the center. Note that, Chandon et al. (2007, 2009) focused only on visual attention, did not measure inferences made about the chosen brand, whereas Valenzuela and Raghubir (2009) reported an indirect effect through brand inferences, but not through memory based attention.

Research in visual perception identified a crucial role of visual attention in the final moments of the choice task that shapes individual’s preference for the eventually chosen alternative, independent of the effects of memory or prior preferences (Shimojo et al. 2003; Simion and Shimojo 2006). Shimojo et al. (2003) conducted gaze pattern analyses in a binary choice task, and found that the role of attention on preference for the chosen option is rapid and concentrated in the final moments of the choice task (gaze cascade effect).

Figure 1
Study 1: Likelihood of Looking at Each Column During the Initial and Final Five Seconds

<table>
<thead>
<tr>
<th>Gaze Duration: Initial 5 Seconds</th>
<th>Gaze Duration: Final 5 Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Meal Bars</td>
<td>C. Meal Bars</td>
</tr>
<tr>
<td>B. Vitamins</td>
<td>D. Vitamins</td>
</tr>
</tbody>
</table>

Note that the likelihood to look at the central, left, and right columns are represented by the bold, solid, and dashed line, respectively. Sampling bins are 100 milliseconds.

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.05), but not on brand inferences or memory based attention measures (p > .10). A multiple mediation analysis revealed that the indirect effect of horizontal centrality on choice through visual attention is significant (p < .05). The indirect effects of horizontal centrality on choice through brand inferences and memory based attention were not significant.

Next, gaze analyses explored: (1) Is there a greater tendency to focus on the horizontal center in the initial few seconds or final 5 seconds of the gaze? (2) Does the higher visual attention on the horizontal center in the initial or final 5 seconds of the gaze duration drive the effect of attention on brand choice? As in Shimojo et al. (2003), gaze likelihood curves were plotted for the initial 5 seconds and final 5 seconds of the choice task (see Figure 1). Although there was a higher likelihood to focus on the central brand in the initial and final 5 seconds, this pattern was consistently significant only in the final 5 seconds. A multiple mediation analysis using visual attention in the initial and final 5 seconds also revealed that visual attention in the final 5 seconds mediated the impact of central location on choice.

Study 2 (N=64) investigated whether the horizontal centrality effect is explained by horizontal centrality of the brand or by centrality on the computer screen. Study 2 extended the design of study 1 by introducing displays that were shifted off the center of the computer screen. Results were similar to study 1 and ruled out screen-based presentation as the possible explanation for the centrality effect (p < .05).

In retail contexts, the centrally located product in the array of products in a particular product category may not necessarily be in the center of the shelf space and the consumers' visual field. Would a product placed in the center of an array of products within a category, but to the right or left side of the shelf, still be chosen more often? Study 3 (N=84) addressed this question with tangible products (3D) presented on a shelf. Results showed that the centrally located brand is chosen more often, even when it is not placed in the center of the shelf or the visual field (p < .05).

The effect of horizontal centrality on visual attention and choice was demonstrated, and the process of visual attention was explored. The findings suggest that in the context of choice between unfamiliar yet similar options, horizontal centrality and increased visual attention drives choice. Interestingly the effect of centrality on choice is not due to favorable evaluations of the chosen option. The findings point to horizontal central shelf location as premium location.

REFERENCES


