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Using Visual Design to Improve Customer Perceptions of Online Assortments

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Abstract

In the future, we expect to see more shopping on-line or on smart phones. This suggests that understanding how visual design decisions can influence consumers' reactions to online assortments is important. New advances in neuro-marketing techniques, such as sophisticated eye tracking methodology, can help understand exactly what drives consumers' attention and processing efficiency.

Visual stimuli on small screens is frequently processed very quickly leading to perceptions that form automatically often without cognitive intervention. Thus, savvy retailers should strategically use design elements of the assortments and of packaging to direct attention and increase the ease of processing. Assortments that are easier to process are liked more and are judged to have more perceived variety. Complexity must be minimized so that assortments can be parsed immediately. Categorization, organizational structure, filtering and other design elements can also help with choice overload.

Keywords: Online retailing; Perceived variety; Product assortment; Perceptual fluency; Attention; Visual complexity

In the future, we expect the percentage of shopping done online will grow exponentially. That is not to say that physical stores will go away, but even when purchases are ultimately made in a physical store, the shopping process frequently will start online. In this omni-channel world, the smart phone will play an important role in making shopping connections. "It's essential to be there on mobile, yes," said Google director of marketing for performance ads Matt Lawson, "But it's even more important to create rich and relevant experiences that connect your stores with shoppers in all of their micro-moments—and encourage those shoppers to come back again and again." (McDowell 2016).

There are two things worth noting about this predicted change in shopper behavior. First, when much of consumers' exposure to retail assortments comes through a digital interface, *visual design* decisions, both in how the overall assortment is depicted and in how the individual items within the assortment are shown, will become critical for influencing consumer reactions. While such stimulus-based judgments (Lynch and Srull 1982) are important in offline shopping, they will be particularly relevant in online shopping, because the focus is narrower (on a screen rather than at a multi-sensory physical store level), and online environments can be more attention demanding (Mosteller, Donthu, and Eroglu 2014). Second, many critical perceptions can be formed in these "micro-moments" that occur throughout the consumer journey, impressions that are often made instantaneously and automatically. These can be decisive moments when preferences are shaped.

Paralleling this change in observed shopping behavior has come new research that helps us understand better what catches consumers' attention online, how consumers process stimuli, and how all of this influences perceptions. For example, by using sophisticated eye-tracking techniques we now have the capability to identify the exact stimuli that consumers fixate on when looking at assortments online, the sequence in which they fixate on these specific items, and the total time that consumers spend fixating on each item as well as on the assortment overall. With this knowledge, we can determine exactly:

1. What features of an assortment directs people's attention, and
2. What are the assortment variables that retailers can use to facilitate the ease of processing?

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Consumer Attention

We know that visual search is not random but is guided by the salience of objects; salience, in turn, results from a combination of goal-directedness and stimulus-driven factors (Hutchinson, Lu, and Weingarten 2016). Sometimes bottom up stimulus-related visual patterns can lead directly to choice, but more often top down decisions, (e.g., involvement, pre-existing preferences, goals, expectations, memory) and marketing variables (e.g., price, sales support, delivery options) will interact in final choice process (Pieters and Wedel 2004; Pieters 2007). Even though goal-directed factors may exert a larger effect on purchase decisions, small stimulus-driven changes, to aspects of displays or packaging, or both, that capture consumers' attention are essential because they can result in increased brand familiarity, changes in perceptions and therefore ultimately affect choice (Chandon et al. 2007). Further, even mere attention to items in a category can in and of itself affect consumer purchases (Janiszewski 1998). Thus, isolating and understanding these bottom-up, stimulus-based, and frequently automatic effects is important, and will be focus here. While esthetic considerations are also important in building brand and store loyalty, the focus here is not on esthetic desirability, but more specifically on design criteria that differentially affect consumer attention.

Processing Fluency

Once consumers pay attention to items within an assortment, they then have to make sense of it. Visual variables can influence the speed and accuracy of low-level processes (Schwarz 2015). This suggests that the design elements of an assortment can make it easier for consumers to process stimuli. Processing fluency is a term that encompasses all sources that facilitate processing in any form. Research shows that increasing fluency feels good and this mildly positive affect can serve as input into judgment (Schwarz 2015). Fluency not only increases liking of a product but also decreases deferral (Novemsky et al. 2007). In addition, consumers hold lay theories of mental processes and the ease or difficulty of the experience causes them to form inferences. When fluency is high, consumers feel more confident and are more likely to form positive inferences and perceptions (Schwarz 2015). When processing is more difficult or more disfluent, processing styles shift from System 1 (automatic processing) to System 2 (more analytic processing) (Schwarz 2015).

Using this knowledge about processing fluency allows us to formulate three principles of design for online assortments:

1. Assortments that are designed to be easier to process will evoke positive affect and they will be liked more than those that are harder to process
2. When assortments are easier to process, people will form positive inferences about the perceived variety that is included in the assortment (Deng et al. 2016).
3. When assortments are more complex, retailers need to provide tools or structure either to facilitate cognitive processing or to make the assortment less disfluent.

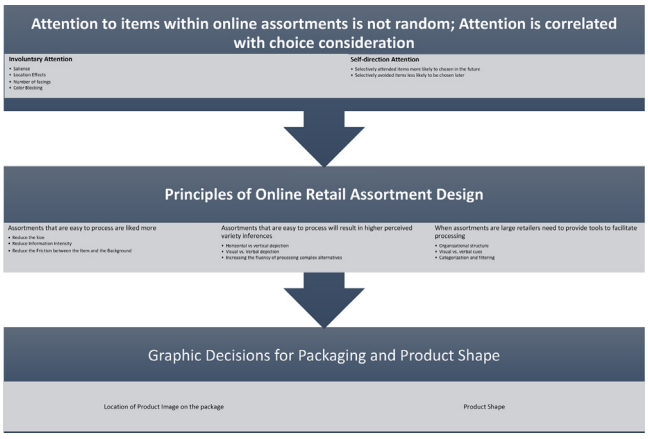

Fig. 1. Visual design decisions that influence online assortments.

Finally, when shopping online, it is easy to drill down through the assortment and focus on an individual item. This type of scrutiny makes packaging decisions and product shape decisions more salient. Graphic product-level design issues will matter more here as well.

We begin with a discussion of what drives consumers' attention when scanning assortments. We then discuss the three principles of design for online assortments as stated above. Finally, we discuss some of the new findings in packaging design and product shape that affect consumers' perceptions at the individual item level (see Fig. 1).

Patterns of Attention

Today we can accurately measure attention using sophisticated eye-tracking techniques capable of recording fixations and saccades. Saccades are rapid jumps of the eyes (they last 20–40 ms) during which no useful information is acquired. Fixations are moments between the saccades when the eyes are relatively still and a person is focusing on a specific stimulus. Fixations are necessary for object identification. Scan paths are a sequence of fixations and saccades that track the order in which stimuli are viewed (Rayner 1998; Lin and Yang 2014). Using eye-tracking techniques, we can identify which stimulus a viewer sees first, last, and in between, the duration of time fixated on each, as well as the total duration of the episode. What people pay attention to is a function of what the brain assesses as most important, and the assessment can either come from "top down" (i.e., based on previously fixated information, prior knowledge, goals or expectations) or be "bottom up" (based on the salient attributes of the environmental stimuli) (Hutchinson, Lu, and Weingarten 2016).

Attention is Correlated with Consideration

Using an experimental online assortment of novel brands that consumers had never seen before researchers were able to remove top down motivations and focus only on bottom-up or stimulus-based patterns of attention (Chandon et al. 2009).