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Attentional-Capture Efficacy and Brand Qualities of Minimalist Packaging Design

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Abstract

The present study examined attentional-capture efficacy and perceived brand qualities in package design styles, hypothesizing greater attention-capturing potency plus perceived eco-friendliness and quality in minimalist design. 94 participants were obtained from an online participant pool with approximately equal gender distribution and ages ranging from 18 to 29 (*M*=21.28, *SD=2.46)*. The participants viewed a series of product packages for 300ms each, displaying both minimalist and complex packages; reporting which packages they saw first. In a separate study, nine participants observed product packages during an eye-tracking session, in which gaze-path and fixation-time were measured. Participants from both studies completed the Geuens, Weijters and DeWulf (2009) Brand Personality Scale, rating products in either minimalist or complex conditions. Contrary to the hypothesis, complex designs were identified correctly significantly more often than minimalist, $t(90) = -2.01$, $p=.048$. No significant differences in visual attention-capturing qualities or total fixation-time were observed using the eye-tracker apparatus, $t(53) = -1.97$, *ns*. Complex designs were also found to score significantly higher on dimensions of "activity" ($t(92) = -4.41$, $p<.001$), "aggression" ($t(92) = -2.97$, $p=.004$), "emotionality" ($t(92) = -1.98$, $p=.050$), and "quality" ($t(92) = -3.57$, $p=.001$). No significant difference in "eco-friendliness" scores was found, $t(92) = .98$, *ns.* No conclusions can be made regarding attentional-capture efficacy differences between minimalist/non-minimalist designs. Future studies should use standardized, fictional product packages as measures. Complex packaging designs have more positive reception than minimalist, suggesting that perceived artistic effort is indicative of the product's quality.

Attentional-Capture Efficacy and Qualities of Minimalist Packaging Design

The present study examined the use of minimalist design principles in packaging design in an attempt to obtain meaningful measures of attentional capture and brand perceptions. Minimalism is an artistic style, characterized by the absence of unnecessary visual elements. It is important to determine whether a reduction in visual elements can influence consumer behaviour, especially in commercial settings in which "ad clutter" is commonplace. Understanding the perceptual response implications of minimalist design on product packaging may be important for devising strategies to maximize the salience of products in the marketplace. In recent years, minimalist design styles have come into vogue, with numerous brands revising their logos in a minimalist direction. While the "clean" and "simple" (streamlined) look of minimalist designs has been generally well received, little research has examined the competitive, psychological implications of minimalist design on product packaging.

The purpose of this study was to examine the utility of using minimalist design in product packaging. The measures used went beyond customers' liking or dislike of minimalist aesthetics, but instead examine the attentional-capturing properties and perceived brand qualities of minimalist design schemes.

The Role of Packaging: Vehicle for Communication

Historically, the role of packaging was to provide a protective container for the product as it moved through distribution channels. Increasingly, however, in the context of marketing, packaging serves a communicative role. Frequently hailed as a "silent salesman," it constitutes a product's final opportunity to persuade a customer to proceed with a purchase, because packaging is often a reflection of the product's quality and characteristics (Cormack & Oxley,

2013; Vila & Ampuero, 2007). Accordingly, from a customer's perspective, well-designed packaging conveying positive information increases a product's perceived benefits, thereby increasing the value of the product as a whole. Consequently, many purchase decisions are dependent on how well the product is *expected* to perform (Gonzalez, Thornsbury & Twede, 2007).

However, product purchase may be prompted solely by seductive packaging (Cahyorini & Rusfian, 2011). In such instances, impulsive purchase intention is strongly determined by the message communicated to the customer by the package, especially when the customer is mentally fatigued and/or has not thought deeply about brand options before entering a store. (Ahmad, Billoo & Lakhan, 2012; Kuvykaite, Dovaliene & Navickiene, 2012). In the absence of careful evaluation of the product, the messages delivered by the product packaging are interpreted uncritically, resulting in higher rates of affirmative purchasing decisions.

The Use of Visual and Informational Elements

Previous research has revealed a variety of approaches to classifying the elements of product packaging. Silayoi and Speece (2007) identify two categories of product packaging elements: visual and informational. Visual elements include graphics, colour, placement, size and shape; informational elements subsume product information and technology, for example, unique features linking a product to the consumer's lifestyle (such as biodegradable material or absence of chemical additives in the product).

Butkeviciene, Stravinskiene and Rutelione (2008) identify verbal and non-verbal packaging elements. Non-verbal packaging components are akin to the aforementioned visual elements, i.e., colour, form, size, imagery, graphics, material and smell. Verbal components, not

unlike Silayoi and Speece's (2007) informational elements, comprise of brand (including reputation), name, country of origin, information, special offers and instructions.

Similarly, Vila and Ampuero (2007) identified visual packaging elements such as colour, shape, typography and imagery, and, proposed that in addition, these packaging elements work together to achieve strategic market positioning for a product. Originally, positioning simply meant configuring the visual elements on the package. More recently, however, positioning has taken on a new meaning, namely the position a brand occupies in the minds of prospective clients. In summary, visual and informational (verbal) packaging elements work in unison to foster a brand persona in customers' minds.

Perceiving Brand Personality

To communicate value affectively, packaging must not only attract attention but also align a product's cognitive properties with market preferences. Market positioning strategists' attempt to determine which qualities are associated with the visual elements of a product package. High-end market products, for example, have been found to be associated with the use of clean designs, straight lines, cold colours and bold typography (Ampuero & Vila, 2006). In a study examining eco-friendly brands, Smith and Brower (2012) found that 26% of respondents attributed a "green" personality (i.e., environmental friendliness) to brands that used simple packaging designs, the colour green, or pictures of nature.

In constructing a positioning strategy, it is important for marketers to determine the traits a brand must personify for its target audience. Ideally, brands seek to present products which embody traits that resonate with (can be related to by) the target consumer (Vila & Ampuero,

2007). Cereal brands for example, often focus their advertising efforts on children, typically using vibrant and playful colours, which are attractive to children (Palmer & Carpenter, 2006).

Aaker (1997) was one of the first researchers to apply the Big Five personality characteristics to what is now known as "brand personality". Like humans, brands are said to possess five personality dimensions: sincerity, excitement, competence, sophistication and ruggedness. However, recent research however, suggests that Aaker's dimensions lack reliability in between-brand and between-product category comparisons. Geuens et al. (2009) proposed a revised model containing the dimensions of "responsibility", "activity", "aggressiveness", "simplicity" and "emotionality", with fewer constituent traits within each dimension. Composite reliabilities were determined to be .95, .95, .93, .95 and .79 for each] dimension respectively.

Extending past research, which suggests that cleanly designed packages primarily influence perceptions about upper-class and environmentally-friendly products, it would be beneficial for the planning of future marketing efforts to determine whether eliminating various (perhaps unnecessary) visual elements would alter perceived brand personality and the constituent traits of a product (Ampuero & Vila, 2006).

Perceptual Organization

In the context of visual elements in product packaging, it is important to understand if visual and graphic elements contribute to an aesthetic whole rather than being perceived and interpreted independently. The aesthetic whole of product packaging can be best viewed through the phenomenological lens of Gestalt theory, which posits that when an object is perceived, its individual parts have secondary perceptual priority after the organized whole, and that humans have an innate tendency to organize individual parts into holistic percepts. Applying Gestalt

theory to marketing, and using a mathematical criterion decision-making model, Chou (2011) evaluated products in terms of Gestalt psychology and minimalist design principles, reporting that adherence to Gestalt and minimalist design principles led to more favourable ranking of products. The effective binding of individual visual elements into a holistic perception, in accordance with Gestalt principles, apparently leaves a positive impression on the consumer.

Gestalt theory plays an integral role in packaging design. Many designers refer to the theory to create novel and visually captivating works using holistically organized elements. According to Orth and Malkewitz (2008), high quality packaging designs exert their impression not from individual visual elements but rather from the holistic arrangement of the combined elements. Notably, designs described by the authors as "harmonious" advocated the use of a simple, symmetrical balance of visual elements to maximize their perceptual effect. These described elements reflect similar design principles to those used in minimalist art. On the other hand, brands perceived as "rugged" seemed to be determined by highly contrasting visual elements and the *lack* of holistic features. (The relationship between rugged designs and contrasting visual elements likely coincides with the culture behind heavy-duty tools and construction, safety signs with their yellow-black patterns).

In another application of Gestalt theory to minimalist design, the Gestalt law of Pragnaz (the law of simplicity) encourages a configuration of visual elements that promotes maximum simplicity. The law states that objects are perceived in their simplest possible form, and in a manner that requires the least cognitive effort (Coren, Ward & Enns, 2004). This assertion suggests that minimalist designs will be interpreted more rapidly than complex designs, which further implicates a potent attention-capturing quality.

Gestalt theory is not the only theory to advance this assertion; spatial frequency theory makes similar claims. Spatial frequency theory involves the conversion of visual percepts into sinusoidal wave components. Images with high spatial frequency have relatively small distance between repeating visual elements. Conversely, low spatial frequency images have greater distances between repeating visual elements. Perceptual information from low spatial frequency images is interpreted holistically, rapidly and crudely, whereas high spatial frequency is characterized by detailed and featural interpretation (Awasthi, Friedman & Williams, 2011). While the concept of spatial frequency has until now been applied primarily to facial processing, it may be applicable in the marketplace, where identical brands are often placed side-by-side on store shelves (Kihara & Takeda, 2011). Because of the empty background and negative space, minimalist design inherently allows for larger visual distances between similar. According to spatial frequency principles, it could be predicted that minimalist designs would be interpreted more rapidly than complex or high spatial frequency designs.

Though currently trending, minimalist art and design as a movement began in the late 1960's. It developed as a reaction to the maximalist, decorative art of abstract expressionism. Proponents of the minimalist movement emphasized purity, clarity and simplicity, which eventually became the motif for the style (VanEenoo, 2011). Minimalist artists created works that were perceived as objective and non-interpretive, removing all aspects of (the seemingly unnecessary) illusionism and visual gimmickry.

Previous studies examining strategies for effective product design have cited simplicity as a critical element in breaking through marketplace ad clutter; minimalist designs inherently possess a larger surrounding physical space that allow its presented design to be more salient than complex designs (Chandler, 2010, Greenberg, 2012). Consistent with these findings, recent

case studies observed marked financial success for companies opting for a minimalist design revision. Hoogesteger Fresh, a fruit juice company, enjoyed a 42% increase in sales following the introduction of a new minimalist design clearly relying on the visual Gestalt principles (DBA, 2012). Nonetheless, despite an increasing trend toward minimalist design, previous consumer research has not sufficiently examined the competitive psychological properties of minimalism.

Competitive Utility of Minimalist Design

Marketers use visual and informational elements strategically to position their brands to appeal directly to their target audience. As described above, visual cues in packaging designs evidently communicate qualitative attributes about a product. Thus, while it may be intuitively plausible to provide consumers with maximum information (verbal and visual) about the product (as many current brands from various product categories traditionally do), the present study contends that a conservative approach may be more beneficial.

Minimalist art, with its recent gain in popularity, may be a visual style ideally positioned to adhere to the latest design trends, and thus to stand in contrast to otherwise maximalist competitor packaging styles. The financial success of companies revising to minimalist visual packaging themes is suggestive of its value in the competitive marketplace. Moreover, it is especially useful to examine how perceptual theories that advocate holistic design fare in such contexts, especially considering the relatedness of minimalism to Gestalt theory. Measuring attentional-capture efficacy and perceived qualitative attributes of minimalist packaging styles may be especially important in understanding the effectiveness of minimalist design as a competitive marketing tool.

Present Study

It is important to examine closely the practical psychological properties of minimalist packaging designs on consumer perception. To do so, a variety of product packages were presented to participants. Minimalistic packages were presented as aesthetic wholes in which the label and the container were minimally discernible (in products such as bottles or jars), and from which various unnecessary visual elements had been removed.

The present study intended to measure attentional-capture properties of minimalist design in a competitive marketing environment. In addition, qualitative measurements of perceived brand traits corresponding to Geuens et al. (2009) brand personality dimensions were taken. These measures, attentional-capture and perceived traits, were assessed in two separate studies.

In a market environment, especially one containing competing products, capturing prospective customers' attention is paramount in facilitating sales. Because eye movements are strong predictors of overt attentional shifts, it would be important to examine visual reactions to packaging designs to determine the attention-capturing potency of a product (Duc, Bays, & Husain, 2008). Given that a minimalist design inherently does not present the viewer with large amounts of information, but, rather, aims to be aesthetically pleasing, it was predicted that a minimalist-design package would attract customers' attention more readily than would non-minimalist designs. As well, because minimalist packages possess few visual and verbal elements, it was also expected that they would be processed and evaluated in a shorter time than non-minimalist designs.

In the first study, two forms of eye-tracking were used. First, minimalist and non-minimalist design stimuli were presented simultaneously for 300ms and, reported accuracy of

identification was measured. From four options (only two of which were presented at any one time), participants were asked to indicate which package they saw first during the 300ms presentation. It was expected that minimalist designs would be reported as seen most often, in comparison to non-minimalist designs, and with less error between similar minimalist designs.

Second, attentional processes can be inferred from eye movements in a marketing setting. Utilizing an eye-tracker device, in the Behavioural Lab of Western's Ivey School of Business, participants' real-time eye-movements were observed, in response to minimalist and non-minimalist packages presented in a similar marketplace scene as in the first portion of the study. Dependent variables were fixation-time and gaze-path.

The second study examined aspects of minimalist versus non-minimalist designs. On a 7-point Likert scale, participants were asked to rate a series of designs of popular brands for perceived quality, environmental-friendliness, and traits related to those of Geuens et al. (2009). Non-minimalist/minimalist brand conditions differed only the number of visual elements present. As suggested by previous literature, it was expected that minimalist designs would be scored higher than non-minimalist designs on measures of environmental-friendliness, aesthetics and quality. The findings from Geuens et al. (2009) Brand Personality Scale, though primarily exploratory, were expected to reveal how reduction in visual elements influences consumer perception of these personality dimensions.

Method

Participants

The participants were university undergraduate students and recent graduates, recruited through the King's University College participant sign-up website or online recruitment through

social media. For the Stimuli Identification task and Brand Personality Scale, a total of 94 participants were gathered. These participants' age ranged from 18-29 years (M=21.38, SD=2.46), with an approximately equal distribution in gender (45 males, 49 females). A separate set of nine participants were gathered to participate in the eye-tracking portion of the study, ages ranging from 21-23 (M=22, SD=.29) with a non-equal distribution in gender (9 males, 4 females). All participants gathered were currently enrolled, or have completed post-secondary education. Participants who were enrolled in Introductory Psychology (Psychology 1000) completed a short assignment about the study, for which they received up to 2.5% bonus credit toward their final grade. Participants who were not enrolled, received a small snack for participation.

Materials

A Stimuli Identification task was developed for the study. Using an attentional-capture computer program, participants were presented two product packages of the same brand, but differing substantially in the number of visual elements present (minimalist versus non-minimalist packages). Six randomized sets of packaging designs were used from six different brands were used. Stimulus presentation duration was 300ms. The packages appeared equal distance to the left and right of a fixation point, which would flash four times (four seconds) prior to the presentation of stimuli.

Nine recruits who did not complete the above task participated in an eye-tracking session at the Ivey School of Business Behavioural Lab in which fixation-time and gaze-path were measured using the Eyetrac 6 eye-tracker (manufactured by ASL). The experimental software presented shelved images of two same-brand products in two packaging designs (minimalist and non-minimalist; from the same brand). Approximately 20 shelved products of each design style

were presented in random order, side-by-side, with six scenes used in total, each presentation lasting four seconds.

Following the experimental session participants completed the Brand Personality Scale developed by Geuens, et al. (2009). The questionnaire presented five packaging designs in either minimalist or non-minimalist styles. Below each package were 7-point scales (1 indicating "*very uncharacteristic of the brand*" to 7 indicating "*very characteristic of the brand*") for rating the packages on Brand Personality traits plus perceived quality, aesthetics and eco-friendliness. The reliabilities for each trait dimension were satisfactory (Cronbach' alphas of .95, .95, .93, .95 and .79 for conscientiousness/responsibility, extraversion/activity, emotionality, aggressiveness, and openness/simplicity respectively), although the authors noted cross-cultural generalizability limitations in reliability in the "aggressiveness" dimension, $\alpha=.55$ (Geuens et al., 2009). A 1-item sample of this scale is available in Appendix A.

Procedure

Before beginning either an eye-tracking session or the Stimuli Identification task, participants were asked to sign an Informed Consent Form. During the Stimuli Identification task, located in an isolated area free of distractions, the participants were seated in front of a computer screen. They were prompted to focus on a fixation point that flashed four times prior to the presentation of the product packaging stimuli. After the presentation of each pair of packages, participants were asked to select the package(s) they have seen from among four electronically presented options. Options differed in the number of visual elements they contained. To maximize participants' response accuracy, participants were explicitly told that at least one package among the choice options had been present during the brief stimuli presentation. This manipulation was intended to to encourage participants to select the first

package they had glimpsed during the Stimuli Identification task, thus reflecting which package had the greatest attentional-capturing potency. Both items that had been presented were always among the four available options. Upon completion of either the Stimuli Identification task, participants were asked to complete a Brand Personality Scale (Geuens et al, 2009). Each participant was randomly assigned to either the minimalist or non-minimalist conditions.

The eyes of the participants selected to take part in the eye-tracking session were calibrated by the EyeTrac 6 to ensure accurate eye-tracking. Participants then viewed consecutively digital images of six shelves containing two visually different packages (same brand) for four seconds each. The packages differed only in the number of visual elements used in their design. The participants were asked to observe the scenes when presented. Between presentations, a fixation cross redirected participants' attention to the center of the screen. Fixation-time and gaze-path were measured.

At the end of the session, both groups of participants were debriefed about the nature of the study. A copy of the Informed Consent Form and Debriefing Form are shown in Appendix A.

Statistical Analysis

For the Stimuli Identification task, paired t-tests were applied to two means of the within-subject design, comparing the number of minimalist designs to non-minimalist designs reported. Errors were compared in the same fashion, i.e., minimalist versus non-minimalist errors. Again in a within-subject design, total fixation-time Eyetrac 6 results were analyzed using a paired-sample t-test. Gaze-path results were generated automatically presented in numerical clusters, indicating which area of the image was looked at first and for how long before an eye-movement was made. A reliability analysis was conducted for the results of the Brand Personality Scale

(between-subject design) for each of the personality dimensions and correlations for dimensions containing only two factors. “Quality”, “eco-friendliness” and “aesthetics” were independent dimensions. For Brand Personality dimensions shown to be reliable, an average of each item was taken across participants. Finally, independent t-tests will be conducted to analyze differences in ratings between the two conditions (minimalist; non-minimalist).

Results

Stimuli Identification Task

A paired sample t-test was conducted to examine the number of correctly identified minimalist versus non-minimalist designs. Minimalist and non-minimalist design errors were also compared. Non-minimalist designs (M=.55, SD=.28) were correctly identified significantly more often than minimalist designs (M=.47, SD=.20), $t(90) = -2.01$, p=.048. Differences in number of errors between minimalist (M=.26, SD=.21) and non-minimalist designs (M=.21, SD=.20) was not statistically significant, $t(90) = 1.70$, *ns.*

ASL Eyetrac 6 Eye-Tracker

Gaze-paths from the eye-tracking sessions were analyzed qualitatively. Only fixation points over 200ms were counted; any fixation point below this threshold was attributed to systematic error. Each of the nine participants viewed six marketplace scenes (duration: four seconds), yielding 54 gaze-paths. These gaze-paths were distributed exactly equally between minimalist and non-minimalist package designs (27 minimalist, 27 non-minimalist); in other words, both styles of package captured participants’ visual attention at an equal rate, indicating no significant difference.

In terms of total fixation-time spent within minimalist/non-minimalist zones, a paired-sample t-test compared the average proportions on each trial. Total proportions indicated that 42.9 percent of participants' time was spent observing minimalist packages, 57.1 percent observing non-minimalist designs. The difference was not statistically significant, $t(53) = -1.97$, *ns.*

Brand Personality Scale

For each of the five dimensions (Responsibility, Activity, Aggressiveness, Simplicity, Emotionality) of the Brand Personality Scale (Geuens, et al., 2009), a reliability analysis was conducted on each of the five individual packages (Corn Flakes, Nesquik, Lindt, Nutella and M&Ms). Constituent traits found to be reliable were then averaged to create a single score of their respective dimension. Corn Flakes packaging however, was determined to be unreliable across dimensions of Responsibility (α=.48) and Activity (α=.41), and was consequently removed from further analysis. A table containing a full list of reliabilities and correlations (for dimensions consisting of only two items) for each individual package and dimension can be found in Appendix B.

A series of independent sample t-tests were conducted, comparing scores between minimalist and non-minimalist conditions. Across all four products, minimalist designs (M=5.10, SD=1.09) had significantly higher scores on "simplicity" than non-minimalist designs (M=4.32, SD=1.16), $t(92) = 3.36$, p=.001. Non-minimalist designs (M=3.75, SD=1.04) scored significantly higher in "activity" than minimalist designs (M=2.85, SD=.93), $t(92) = -4.41$, p<.001. Non-minimalist designs (M=3.36, SD=.99) scored significantly higher than minimalist designs (M=2.78, SD=.93) in the "aggressive" dimension, $t(92) = -2.97$, p=.004. Non-minimalist designs (M=3.42, SD=1.24) also scored significantly higher on levels of "emotionality" than minimalist

designs (*M*=2.92, *SD*=1.19), *t*(92) = -1.98, *p*=.050. No statistically significant differences between minimalist (*M*=4.04, *SD*=1.10) and non-minimalist designs (*M*=4.12, *SD*=1.17) were found for the "responsibility" dimension, *t*(92) = -.33, *ns*. A table displaying full list of significant findings of Geuens et al. (2009) brand personality dimensions related to each individual packages can be found in Table 2 in Appendix B.

Packages in the non-minimalist condition (*M*=4.89, *SD*=1.11) were rated significantly higher in quality in comparison to minimalist designs (*M*=4.05, *SD*=1.09), *t*(92) = -3.57, *p*=.001. Non-minimalist designs (*M*=4.33, *SD*=1.41) also scored significantly higher in scores of aesthetics than minimalist designs (*M*=3.50, *SD*=1.12), *t*(92) = -3.13, *p*=.002. Finally, minimalist designs (*M*=3.35, *SD*=1.24) did not differ significantly from non-minimalist designs (*M*=3.10, *SD*=1.21) in scores of eco-friendliness, *t*(92) = .98, *ns.*

Discussion

Both hypotheses predicting greater inclination to direct visual attention to minimalist design first, over non-minimalist, as well as predicting higher reports of minimalist designs during the Stimuli Identification task have not been supported. While non-minimalist designs did on average represent a higher proportion of total fixation-time when compared with minimalist, the difference was non-significant therefore the hypothesis predicting such was not supported.

The findings did not support the theory that holistic designs possess qualities of visual perceptual priority. In retrospect, it may be that complex designs attracted more attention because they contained more decorative visual elements than simplistic designs. For instance, complex packaging designs allow for wider variety of colour than the designs with minimal visual elements; colour has been shown to be an influential factor in a package's ability to

command attention (Gorn, Chattopadhyay, Yi & Dahl, 1997). On the other hand, heuristically, the higher number of visual packaging elements among complex designs could be expected to impede correct identification, because more visual elements would have to be compared. It is surprising that the evidence did not support this conclusion.

Complex designs accounted for a greater percentage of visual observation time during eye-tracking sessions, though not significant, perhaps due to the small number of eye-tracking participants. No difference was found in terms of visual attention-capturing qualities between minimalist and complex designs using the eye-tracker. These findings imply that package design has no influence on attention-capturing efficacies, at least when examining differences between the number of visual elements used on the package. These findings are contrary to the original hypothesis, past research and the theory of spatial frequency, which posits that low-spatial frequency arrangements will be processed more rapidly than images of high-spatial frequency. It is unlikely that these findings are representative of the effect of package designs in the marketplace; rather the non-standardized measures used may instead be at fault.

Contrary to previous research and the original hypothesis, ratings of quality, aesthetics and eco-friendliness were higher for complex rather than minimalist design. Higher ratings of aesthetics in complex designs seem to suggest a relationship between the presence of decorative visual elements and what a participant may define as “aesthetic”. Because further investigation revealed a significant, positive correlation between ratings of “aesthetics” and “quality”, r=59, p<.001, these findings suggest that an individual’s perception of a brand’s quality is directly related to not only how many visual elements are present, but also whether they are organized in a manner perceived to be aesthetically pleasing. Cumulatively, this interaction suggests the operation of a “beautiful is good” motif in the realm of consumer processing (Slavin, 2012).

Consistent with this interpretation, participants criticized minimalist designs as “lazy” and “uncreative”, suggesting a conclusion that complex designs are perceived to have been given more care and attention during the design process. Consequently, such positive reaction to complex package designs translated into their communication of quality (Cormack & Oxley, 2013; Vila & Ampuero, 2007; Yamamoto & Lambert, 1994).

While there was no significant difference between minimalist and complex designs on perceived levels of eco-friendliness, a significant positive correlation was found between ratings of “simplicity” and “eco-friendliness”, r=.37, p<.001. The lack of a significant difference in eco-friendliness ratings between minimalist and complex designs may be a result of both a brand familiarity confound, and varied physical containers containing the evaluated products (e.g., plastic container, plastic bag, box), that is, some containers may be seen as more (or less) eco-friendly than others. The finding that minimalist designs failed to reach significance in ratings of eco-friendliness, whereas the dimension of “simplicity” (which was significantly related to minimalist designs, [t(92)=3.36, p<.001]) did significantly correlate with eco-friendliness, calls the validity of the eco-friendliness scale into question.

The exploratory findings from the Brand Personality questionnaire demonstrated that non-minimalist designs are rated higher in dimensions of “activity”, “emotionality” and “aggressiveness”. As expected, minimalist designs scored higher on “simplicity” in comparison to complex designs. These results suggest that non-minimalist designs are perceived to possess more salient visual features than plain, minimalist designs. The “activity” dimension is understandably associated with complex designs, namely in that numerous visual elements are present and interacting with each other, thereby conveying a sense of activity. Consistent with previous research, minimalist designs were negatively related to ratings of aggression, because

simple designs often convey a subtle, calming sense (Orth & Malkewitz, 2008). Nonetheless, the use of minimalist designs was unrelated to "emotionality", a dimension aimed at measuring the emotional expression of a brand. Only one (Nutella) of the four packages reached significance on ratings of emotionality. Perhaps emotionality ratings are strongly influenced by product-category and may not be as notable in snack products. Further research is necessary to measure emotionality differences between minimalist and complex package design, and in different product categories (e.g., cell phone boxes, wine bottles).

The findings of the present study suggest that vibrant and decorative designs are useful in increasing detailed identification of the product among similar looking packages and encouraging a positive reception to the product based on the effort put into its visual design. Whether these results translate into an effect on visual attention is unknown as no significant findings have been found during eye-tacking. Results obtained from the Brand Personality Scale offer insight to brand managers considering positioning strategies, and what consequential impact it may have on the perceived traits of the brand.

Limitations

While the authors of the revised Brand Personality Scale claimed that the measure possessed strong between-product and product-category reliability, Cronbach's Alpha levels varied considerably between products both outside and within their product category. The reliability coefficient for Corn Flakes (α=.40) was not high enough to include in the analysis, and the Cronbach's Alpha levels across dimensions for the remaining products ranged from .59 to .79. This variability is a considerable weakness that makes generalizability of the findings difficult.

Brand familiarity was also a noteworthy confound, as products in both studies consisted of non-fictional brands with varying numbers of visual elements. It is possible that participants would notice differences (or similarities) in package design of brands they use regularly. In future studies, it is recommended that researchers create an original set of designs for fictional products, with physical prototype samples for participants to examine.

Closing Statements and Future Studies

The findings of no difference between minimalist and complex design in the eye-tracker study are likely unrepresentative of the real-world impact of package design on attention-capture efficacy. Future studies should reinvestigate the relationship between minimalist and complex designs, using standardized and previously validated forms of methodology. Future eye-tracking sessions should be done with fictional brands and with larger sample sizes.

In addition, researchers must investigate what precisely constitutes an effective minimalist design, i.e., beyond a mere reduction in elements. Perhaps designs that use clean designs with subtle or implicit relationships among visual elements may be more representative of future minimalist design trends. Such designs will allow an accurate comparison between minimalist and non-minimalist design without the former being negatively perceived as "uncreative" or "lazy". Future comparative designs must be equal in artistic reception, while differing in aesthetic complexity, thus facilitating a higher degree of control for personal preference, a confound that operates presently.

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Appendix A

Consent Form: Consumer perception of Products (Eye-tracking)

You will undergo an eye-tracking session at the Ivey Behavioural Lab during which you will be presented a series of product images. The cumulative time of the experimental session will be no longer than 45 minutes. Participation in the present study is entirely voluntary and you are free to withdraw, for any reason, at any time without penalty. There are no known risks associated with participation in the study. All data obtained, including personal identifiers such as names and student numbers will be kept confidential. The data will be used for research purposes only. You will receive written feedback at the end of the study.

For further questions please contact any of the following researchers involved:

Michael Garaszczuk (Honors student, Thesis Project)
mgaraszc@uwo.ca

Dr. Nicholas Skinner (Supervisor)
DH221
nskinner@uwo.ca

"I have read the above and agree to participate in the research that has been described to me".

Signature _____ Date _____

Appendix A

Consent Form: Consumer perception of Products

Thank you for choosing to participate in this study. Psychology 1000 students can receive up to 2.5% bonus marks for completing a related assignment. Participants are free to withdraw at any time and still receive credit for the written assignments.

You will be briefly presented a series of product images and asked to indicate which images you recall seeing. Afterwards you will be administered a short questionnaire which will be no longer than ten minutes. You are free to leave out any questions you do not feel comfortable answering. Participation in the present study is entirely voluntary and you are free to withdraw, for any reason, at any time without penalty. There are no known risks associated with participation in the study. All data obtained, including personal identifiers such as names and student numbers will be kept confidential. The data will be used for research purposes only. You will receive written feedback at the end of the study.

For further questions please contact any of the following researchers involved:

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"I have read the above and agree to participate in the research that has been described to me".

Signature _____ Date _____

Appendix A

DEBRIEFING FORM

Minimalist packaging and attentional-capture and brand qualities

The purpose of this research is to determine whether the use of minimalist packaging styles on products would: 1. capture attention to a greater degree than cluttered packaging and, 2. whether consumers attribute qualities to products using minimalist styles differently than non-minimalist products. This study was carried out in response to the growing use of minimalism in design and marketing fields. Minimalist design, as the name suggest, involves reducing the number of visual elements down to the absolute necessities on a particular artistic work. Despite increasing in popularity, research in this topic is very limited. Past research has suggested that products and packages that abide by certain visual principles (gestalt and minimalist) are viewed more positively and perceived to be of higher quality than those that do not (Chou, 2011).

By conducting this research, we hope to gain practical insight into how minimalist visual styles affect one's perception of a brand and how visual styles differ in their ability to stand out amongst advertisement clutter with a reduction of visual elements on a package.

Examining how reducing the distinction between the package and the packaging label may reveal further insight as to how integrated aesthetics may play a practical role in consumer psychology and consequently, marketing strategies. We hope to find results that encourage the development of packaging designs with the artistic whole considered, rather maximizing information.

If you are interested in more research on this topic, the following are recommended sources:

- Chou, J. (2011). A Gestalt–minimalism-based decision-making model for evaluating product form design. *International Journal of Industrial Ergonomics, 41*(6), 607-616.
- Orth, U. R., & Malkewitz, K. (2008). Holistic package design and consumer brand impressions. *Journal of Marketing, 72*(3), 64-81.

If there are any complaints, concerns or questions about any aspect of this study, please refer to: Michael Garaszczuk (Honors Student, Thesis Project) or the supervisor at King's University College at Western University, Dr. Nicholas Skinner at 519-433-3491 ext 4408 and/or nskinner@uwo.ca. Office: DH 221.

Thank you again for your participation in this research.

Appendix A

Take a moment to examine each image and fill out the following questions

1

Please rate the above image in the categories specified below indicating how much each quality represents the brand.

From **1 (not characteristic for the brand at all)** to **7 (very characteristic for the brand)**

____ Aesthetic	____ Ordinary
____ Innovative	____ Stable
____ Responsible	____ Romantic
____ Sentimental	____ Aggressive
____ Dynamic	____ Active
____ Down to earth	____ Quality
____ Simple	____ Eco-friendly
____ Bold	

Appendix B

Table 1: Constituent reliability/correlations for items and dimensions

Dimension/ Product	Responsibility (α)	Activity (α)	Simplicity (r)	Emotionality (r)	Aggression (r)
Corn Flakes	.48	.41	.36	.21	.27
Nesquik	.59	.77	.47	.50	.24
Lindt	.61	.54	.52	.45	.43
Nutella	.64	.65	.57	.48	.32
M&M	.66	.79	.54	.69	.34

Appendix B

Table 2: Significantly related brand personality dimensions for individual brand packages

Product	**Dimension**	t	df	Sig (2-tail)	**Condition**	M	SD
M&Ms	Activity	-4.725	84.8	.000	Minimal	2.79	1.16
					Complex	4.17	1.63
	Aggressive	-2.709	86.7	.008	Minimal	3.09	1.07
					Complex	3.79	1.05
Nutella	Emotionality	-2.720	92	.008	Minimal	2.40	1.57
					Complex	3.28	1.57
Lindt	Aggressive	-2.376	92	.020	Minimal	2.43	1.15
					Complex	3.00	1.15
Nesquik	Activity	-6.794	92	.000	Minimal	2.64	1.09
					Complex	4.33	1.31
	Aggressive	-3.095	92	.003	Minimal	2.80	1.20
					Complex	3.59	1.27
	Emotionality	-2.348	92	.020	Minimal	2.10	1.23
					Complex	2.73	1.37