

Location, Location, Location: The effect of clutter on the evaluation and aesthetic judgment of off-premise signage

Jennifer S. Hong*

Assistant Professor of Marketing
Albers School of
Business and Economics,
Seattle University

jhong@seattleu.edu

Mathew S. Isaac

Genevieve Albers Professor of Marketing
Albers School of
Business and Economics,
Seattle University

isaacm@seattleu.edu

*corresponding author

INTRODUCTION

Many consumers encounter billboards on a daily basis. The International Sign Association (ISA) defines a billboard as a type of off-premise sign that usually displays a brand's name and logo and is located beyond the property of the business it is advertising (ISA, 2020). The ubiquity of billboards may be due to their effectiveness at conveying information about businesses and their offerings. According to a 2015 Nielsen survey, 71% of Americans look at the messages on roadside billboards, and of those, 47% indicated that they remember the messages displayed. Moreover, billboards and other off-premise signs that feature simple and provocative messages, large fonts, and vivid colors are more likely to be noticed and deemed memorable (Donthu et al., 1993).

A critical factor that determines the effectiveness of off-premise signage is its location (Donthu et al., 1993; Franke & Taylor, 2017; Wilson & Till, 2010). Unlike on-premise signs, a billboard can be displayed in a public space (in accordance with local zoning regulations) rather than being restricted to the property of the business it promotes. When it comes to determining ideal location, past research uniformly suggests that billboards should be installed and displayed in high-traffic areas, such as along highways and in metropolitan areas, so they can be seen by the highest number of consumers (Donthu et al., 1993; Franke & Taylor, 2017; Wilson & Till, 2010). The rationale behind this advice is intuitive: the more people who are exposed to billboards, the more who will see and potentially buy the promoted offerings. Accordingly, these high-traffic areas come with a hefty price tag, which is often prohibitive for small businesses.

In our research, we propose that there may be value in displaying a billboard in a low-traffic area, beyond its lower cost. Our proposition hinges on the fact

Abstract /

Academic scholars and practitioners uniformly suggest that off-premise signs such as billboards will be more effective if they are installed in high-traffic areas rather than low-traffic areas. In this research, we question the ubiquity of this claim and illustrate potential advantages of installing off-premise signs in low-traffic areas given that these environments also tend to be less cluttered (i.e., having fewer competing signs). Across two studies, we provide converging evidence that consumers evaluate a billboard more favorably when it is displayed by itself than when it is displayed next to other billboards. We show that the same billboard in a low-clutter (vs. high-clutter) location is judged to be more aesthetic, which in turn improves the overall evaluation of the billboard. We further delineate boundary conditions in which the benefits of a low-clutter environment are attenuated.

Keywords /

off-premise signage; billboard; location; clutter; aesthetics

that high-traffic areas tend to have a high density not only of people but also of various forms of billboards (e.g., Times Square in New York City). Consequently, high-traffic areas typically entail multiple competing billboards (i.e., a high level of clutter) whereas low-traffic areas do not necessarily contain as much advertising clutter or competition. We argue and demonstrate that under certain conditions, consumers evaluate a billboard located in a low-clutter area more favorably than the same billboard in a high-clutter area.

As an example, consider the regionally famous Magikist signs in Chicago. Magikist was a local rug cleaning company that placed 13-foot-long billboards in the shape of its logo—human lips—across the Chicagoland area, typically in low-clutter locations where no other competing billboards were visible (see Figure 1). From the 1960s until the early 2000s, when the company went out of business, the Magikist lips were cherished Chicago landmarks that locals and tourists would pose with and photograph. The last remaining Magikist sign was so beloved that after the sign was torn down, a local entrepreneur purchased it for nearly \$4,000 (CBS Chicago, 2013).



Figure 1 / Magikist Lips Signage in Chicago, IL

How might we account for the success of signage in low-traffic (and presumably low-clutter) locations given prior research (Donthu et al., 1993; Franke & Taylor, 2017; Wilson & Till, 2010) and common intuition that high-traffic signage will be more effective? We conjecture that consumers will be more likely to perceive a sign in a low-clutter area as a work of art rather than a deliberate marketing tactic. In turn, the premium associated with aesthetics boosts consumers'

overall evaluation of the sign.

When investigating the communication effectiveness of signage, there are numerous consumer responses that merit consideration, including attention (Kellaris & Machleit, 2016; Knuth et al., 2020; Wu et al., 2020), affective reaction (Kellaris et al., 2020), and trust (Isaac, 2020). In our research, we focus specifically on consumers' self-reported evaluation of signage, which we operationalize as their liking of the billboard. It has been widely documented that consumers' evaluations or attitudes towards a marketing message is a strong predictor of downstream behavioral responses related to the brand or product promoted in the message (*c.f.*, Mitchell & Olson, 1981). Prior work on signage documents a link between evaluations and behavioral responses such as purchase intentions (Kellaris & Machleit, 2016; Knuth et al., 2020) and compliance intentions (Kellaris et al., 2020). Furthermore, signage research has shown that consumers' evaluations of signs are influenced by their affective state (Kellaris et al., 2020), the ease of signage processing (Wu et al., 2020), and the credibility of the message on the sign (Isaac, 2020). Extending these findings, we delineate a novel process whereby aesthetic judgments can also affect the overall evaluation of a sign.

In the following section, we review the crucial role of aesthetics in consumers' evaluation of marketing signs and other advertisements. We then describe our hypothesis and proposed mechanism based on two streams of research: the signaling effect of white space and the contrast effect of competing objects.

ROLE OF AESTHETICS IN CONSUMER JUDGMENT

According to the Outdoor Advertising Association of America (OAAA), there have been over 350,000 billboards installed each year in the United States since 2015. Given this high number, consumers are likely to encounter billboards of various sizes, colors, fonts, images, and formats (non-digital vs. digital). These different design specifications may differentially impact consumer judgments (Donthu et al., 1993; Shimizu, 2002). According to Donthu et al. (1993), consumers find billboards that use large fonts and black-and-

white colors to be more noticeable and memorable. In contrast, Shimizu (2002) suggests that large and colorful billboards (vs. small and monochromatic billboards) yield a greater return-on-investment. As these examples illustrate, each visual dimension (e.g., size, color, etc.) can uniquely impact one or more aspects of consumer judgment (e.g., recognition, recall). However, little is known as to whether the combination of these visual components holistically affects aesthetic judgments and how such judgments carry over to consumers' overall evaluations of billboards.

To fill this gap, we first conducted a pilot study to examine whether there is sufficient variance in the aesthetic value of different billboards. We used OAAA's OBIE award archive as our stimuli (OAAA, 2020). These billboards were submitted as nominees for 2019's OBIE awards, which honors creative excellence in out-of-home advertising design. Of the collection of 251 billboard images, 100 images that portrayed billboards installed in similar locations (i.e., highways) were selected. In this pilot study, we showed these selected billboards to an online panel of Americans ($N = 202$; $M_{age} = 37.46$, $SD_{age} = 10.77$, 33% female) who were recruited from Amazon Mechanical Turk. Each participant viewed and evaluated the subjective aesthetic rating of 50 randomly-presented billboards by indicating the extent to which he/she found each billboard to be a "work of art" on a scale from 1 (not at all) to 7 (very much). The mean aesthetic value rating was around the scale midpoint ($M = 4.50$), indicating that participants found the billboards to be moderately aesthetic in general. More importantly, as Figure 2 illustrates, there was a substantial variability in perceived aesthetic value across billboards, ranging from 3 to 6.

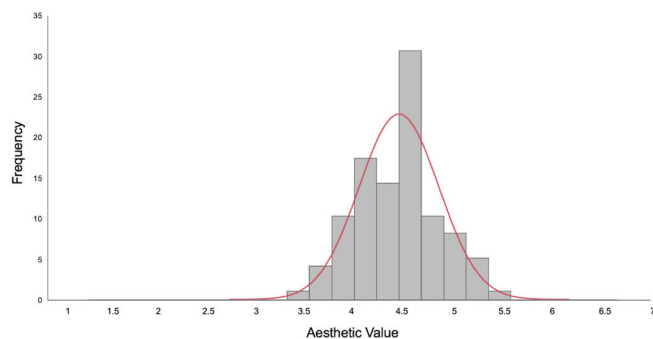


Figure 2 / Distribution of Billboards Based on Perceived Aesthetic Value

Does it matter that some billboards are deemed less aesthetic while other ones seem more aesthetic? Is there any benefit from an evaluative standpoint if a sign is perceived as a work of art? When it comes to answering these questions, research in consumer behavior has provided corroborative evidence that perception of art typically enhances overall evaluation of target objects (Hagtvedt et al., 2008; Hagtvedt & Patrick, 2008; Krishna et al., 2016; Patrick, 2016). According to Hagtvedt and Patrick (2008), the presence of artwork on a commercial object spontaneously evokes perceptions of luxury and high quality; these perceptions positively spill over to general opinion about the object. In one of their experiments, participants evaluated a hand soap considerably more favorably when it had an artistic image on the package than when it had a non-art image. This so-called "art-infusion effect" is not just unique to consumer goods and occurs in other contexts, including advertisements (Estes et al., 2018; Huettle & Gierl, 2012), high-end brands (Lee et al., 2015), and brand extensions (Hagtvedt & Patrick, 2008). Together, these findings imply that, in the context of signage, consumers may favor those that are highly aesthetic, regardless of the actual message.

WHITE SPACE AS A DETERMINANT OF AESTHETIC VALUE

Consumers' perceptions of aesthetic value can be enhanced by numerous visual factors from colors (Homburg et al., 2015; Yan et al., 2014) to size of objects (Puccinelli et al., 2013; Semin & Palma, 2014). Related to the present research is white space (also known as negative space), which is a factor known to boost aesthetic judgments. Despite its name, white space does not need to be white; it refers to any vacant space found between design elements or objects within a visual layout (Pracejus et al., 2006).

Research in consumer behavior documents that the presence of white space in print advertisements (Olsen et al., 2011; Pracejus et al., 2006), shelf space (Sevilla & Townsend, 2016), and logos (Sharma & Varki, 2018) improves aesthetic judgments, which in turn increases consumers' evaluation of brands and products. In one of the studies conducted by Sevilla and Townsend (2016), consumers found moisturizing hand cream to be more aesthetically pleasing when units of hand

cream were more spread out on display shelves (creating white space) than when they were tightly stacked side by side (no white space). As a result, they evaluated the hand cream more favorably when it was presented with white space than when it was not.

Based on these findings, we predict that consumers will find a billboard located in a low-clutter (vs. high-clutter) area more aesthetically pleasing. High-traffic areas tend to have a greater number of co-located billboards and other forms of signage, leaving the viewer to perceive minimal white space. In contrast, low-traffic areas are less likely to be cluttered. In fact, these areas often comprise empty landscapes, which grant more white space when a sign is placed by itself (see Figure 3, A–D). According to our theorizing, the presence of white space in a low-clutter environment should boost the perceived aesthetic value of a sign. Accordingly, we hypothesize the following:

H₁: Consumers will evaluate a billboard more favorably when it is displayed by itself (i.e., in a low-clutter area) than when it is displayed along with other signs (i.e., in a high-clutter area).



(3A) Billboards in Time Square, New York City, NY



(3B) Billboards in Downtown Los Angeles, CA



(3C) Cabela's billboard in Green Bay, Wisconsin



(3D) Milano's billboard in Dayton, Ohio

Figure 3 / Examples of Billboards in High-Clutter (Top) and Low-Clutter (Bottom) Locations

CONTRAST EFFECT AS ANOTHER DRIVING FORCE

We do not argue that the increased evaluation of a billboard in a low-clutter area is solely driven by the presence of white space. In fact, we believe that our proposed effect is multiply determined and will depend on the other signs installed in the high-clutter area. This is because consumers are likely to make a judgment about a sign by comparing it against other signs displayed in the same area, resulting in a contrast effect.

Contrast effects are cognitive biases that alter our perception and evaluation of an object because the process of comparing it with other objects amplifies their differences (Kahneman & Miller, 1986; Schwarz & Bless, 1992). For example, the contrast effect can make an item appear lighter than it actually is when it is placed against a dark background. This effect plays a role in a wide variety of situations from price perception (Cunha & Shulman, 2011; Lynch et al., 1991) to art evaluation (Tousignant & Bodner, 2014, 2018; Arielli, 2012). A cheap product appears more expensive when next to cheaper products (Cunha & Shulman, 2011; Lynch et al., 1991). Similarly, consumers judge average-beauty images to have lower aesthetic value when displayed alongside high-beauty images (Tousignant & Bodner, 2014, 2018; Arielli, 2012).

Collectively, prior research suggests that consumers judge a target object less favorably when it is compared to a set of more superior objects, which is consistent with our current hypothesis. However, there are cases in which the target object is compared against inferior objects. In such situations, an expensive product appears cheaper when it is presented next to other, even more expensive products (Cunha & Shulman, 2011; Lynch et al., 1991) and average-beauty images seem to have higher aesthetic value when presented in combination with low-beauty images (Tousignant & Bodner, 2014; 2018; Arielli, 2012).

Based on these findings, we predict that when consumers evaluate a sign high with aesthetic value, it will be evaluated similarly irrespective of whether it is located in a low- or high-clutter area. This null effect is the result of the presence of white space and

the contrast effect acting on consumers' evaluations in opposite directions. On one hand, the presence of white space should cause a sign that is high in aesthetic value to seem better if it is in a low-clutter area (vs. a high-clutter area), as there is more white space in the visual layout. However, the contrast effect should cause a sign that is high in aesthetic value to seem better if it is in a high-clutter area versus a low-clutter area because the high-clutter sign benefits from comparison with other nearby signs (that are likely to be less aesthetic). Since the contrast effect tempers the benefit of white space on low-clutter signage, we posit the following:

H₂: The proposed effect will be attenuated when consumers evaluate a billboard that is high in aesthetic value.

Finally, we conjecture that there may be an individual-level difference that moderates the positive effect of a low-clutter (vs. high-clutter) environment on sign evaluation. Specifically, we argue that the effect may be evident among consumers who are less knowledgeable about art, but not among consumers who are more knowledgeable about art. Prior research on consumer expertise indicates that when evaluating a product, consumers with high product knowledge make judgments based on relevant information (e.g., product attributes; Alba & Hutchinson, 1987; Dodds, 1995). In contrast, consumers with low product knowledge tend to incorporate external cues that are often unrelated to the product itself (Alba & Hutchinson, 1987; Dodds, 1995). Hence, in the context of signage, consumers who are highly knowledgeable about art would evaluate a billboard based on its content only and would be less likely to rely on contextual cues such as white space or competing billboards. Not being art experts, consumers with low knowledge in art would instead incorporate all possible contextual cues when evaluating a target sign. Accordingly, our final hypothesis is as follows:

H₃: The proposed effect will be attenuated among consumers who are highly knowledgeable about art.

Over two studies, we examine the effect of display location on evaluation of off-premise signs. In Study 1, we document preliminary evidence for H₁. In Study 2,

we test H_1 - H_3 and provide converging evidence for our proposed effect. Experimental stimuli for both studies are provided in the Appendix.

Study 1

In Study 1, we attempt to provide an initial demonstration of our proposed effect. In this study, we use moderately aesthetic billboards as our stimuli. Thus, a moderately aesthetic billboard is presented either by itself in a low-clutter area or with other average billboards in a high-clutter area. We predict that participants will evaluate the target billboard more favorably when it is displayed in low-clutter area than in a high-clutter area. Furthermore, to show that our effect is robust across different visual contexts, we presented these billboards on two different background locations: on the side of a street or a field. We predict that our proposed effect will emerge regardless of the background location.

Method

One hundred and fifty American participants ($M_{age} = 41.15$, $SD_{age} = 12.74$, 50% female) from an online panel (Amazon Mechanical Turk) completed this study in exchange for nominal monetary compensation.

This study adopted a 2 (billboard clutter: low vs. high) x 2 (background location: street vs. field) between-subjects design. Participants were randomly assigned to one of the four aforementioned conditions. We manipulated clutter via presence of competing billboards in the given location. In the high-clutter condition, participants were presented with six different billboards, namely those by Magikist, Creation Museum, Snapchat, Coca-Cola, Nivea, and CAT Footwear. In the low-clutter condition, we only showed participants a sign by Magikist. In the street background condition, the billboards were placed on the side of a street, whereas in the field condition, the same set of billboards were placed in the middle of a vacant field (*see Appendices*).

All participants were informed to focus on Magikist's sign: the Magikist lips. We further informed participants that Magikist was a local rug cleaning company. They were then asked to indicate how much they liked the billboard on a scale from 1 (not at all) to 7 (a lot). To assess perceived aesthetic value, we

asked participants to report how much they found the billboard to be visually appealing on a scale from 1 (not at all) to 7 (very visually appealing). To examine a potential downstream behavioral consequence, we also measured participants' word-of-mouth (WOM) intention by having them indicate how likely they were to share a photo of the billboard on social media, on a scale from 1 (not at all) to 7 (very likely).

Finally, we measured participants' familiarity with Magikist by having them indicate the extent to which they are familiar with the company from 1 (not familiar at all) to 7 (very familiar). The objectives of including this measure were twofold. First, we sought to rule out the possibility that participants' prior knowledge of the company was the driver of our proposed effect. Second, for explanatory purposes, we aimed to test whether clutter affected perceptions of familiarity in addition to aesthetic value and liking.

Results

A two-way Analysis of Variance (ANOVA) revealed that a significant main effect of billboard traffic ($F(1, 146) = 5.73$, $p = .018$) on the evaluation of the Magikist sign. In general, participant liked the Magikist lips more when it was presented in a low-clutter area where there were no other billboards ($M = 3.86$, $SD = 1.83$) as compared to when it was located in a high-clutter area with five other billboards ($M = 3.15$, $SD = 1.76$). This effect was robust regardless of the background location, as the interaction effect between background location and clutter was not statistically significant ($F(1, 146) = .26$, $p = .61$). We found no evidence for the main effect of background location ($F(1, 146) = .02$, $p = .88$).

Furthermore, participants generally found the Magikist sign to be of moderate aesthetic value. The average of aesthetic ratings hovered around the scale midpoint, 4 out of 7 ($M = 3.94$, $SD = 2.06$; $t(149) = -.36$, $p = .72$). However, as we predicted, participants indeed found the Magikist sign more aesthetically pleasing when it was presented in a low-clutter area ($M = 4.28$, $SD = 1.97$) than in a high-clutter area ($M = 3.56$, $SD = 2.09$; $F(1, 146) = 4.69$, $p = .032$). We found no evidence of a main effect of background location ($F(1, 146) = 0.08$, $p = .776$), nor an interaction effect between background

location and clutter ($F(1, 146) = .72, p = .398$).

We obtained a similar pattern with the WOM behavioral intention measure. Participants were more willing to share the photo of the billboard online when it was located in a low-clutter (vs. high-clutter) environment ($M_{low-clutter} = 3.19, SD = 2.27$ vs. $M_{high-clutter} = 2.10, SD = 1.71$; $F(1, 146) = 10.55, p = .001$). Again, both the main effect of background location ($F(1, 146) = 1.54, p = .216$) and the interaction effect between background location and clutter were not statistically significant ($F(1, 146) < .001, p = .986$). The key results of Study 1 are displayed in Figure 4.

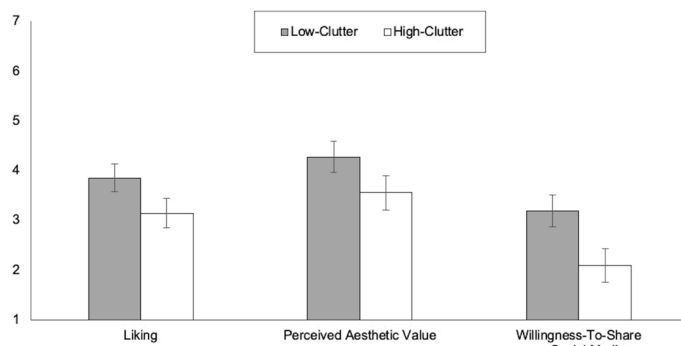


Figure 4 / Results of Study 1: Judgments and Behavioral Intentions as a Function of Billboard Clutter

Finally, we conducted a series of mediation analyses to further examine our theorizing. First, we ran a mediation analysis using the PROCESS macro (Model 4) to test whether perceived aesthetic value mediated the effect of clutter on billboard evaluations (Hayes 2017). This mediation analysis utilized bootstrapping with repeated extraction of 10,000 samples. For this purpose, the high-clutter condition was coded as '0,' and the low-clutter condition was coded as '1,' with liking of billboard as the dependent variable. We included aesthetic value as a potential mediator in the model. Results of the mediation analysis indicated that the indirect effect of clutter through perceived aesthetic value was positive ($B = .54, SE = .25$) and statistically different from zero (95% *CI*: .05, 1.06).

We also conducted a serial mediation analysis using the PROCESS macro (Model 6) to see whether liking of billboard mediated by artistic value sequentially mediates the effect of clutter on likelihood to post the billboard image on social media. The bootstrapping

and coding criteria were identical as above. In this model, we included aesthetic value and overall billboard evaluation as potential mediators and likelihood to post the billboard image as the dependent variable. We found evidence for serial mediation from clutter to aesthetic value, from aesthetic value to billboard liking, and from billboard liking to likelihood to share on social media ($B = .32, SE = .17$; 95% *CI*: .02, .68).

Finally, a two-way ANOVA on brand familiarity (i.e., Magikist) revealed no main effect of billboard clutter ($F(1, 146) = .96, p = .33$), no main effect of background location ($F(1, 146) = 2.24, p = .14$), and a non-significant interaction between clutter and background location ($F(1, 146) = .36, p = .55$). Although billboard clutter significantly influenced consumers' liking, aesthetic judgment, and sharing intentions, it had no impact on the perceived familiarity of the brand promoted on the billboard. Furthermore, we conducted additional two-way Analyses of Covariance (ANCOVA) on the aforementioned key measures—liking, aesthetic judgment, and sharing intention—while including brand familiarity in the model as a covariate. The main effect of billboard clutter was still evident for all three measures (liking: $F(1, 145) = 4.72, p = .031$; aesthetic judgment: $F(1, 145) = 3.74, p = .05$; sharing intention: $F(1, 145) = 10.47, p = .002$), which suggests that the effects were not driven by participants' general familiarity of the brand.

Discussion

The results from Study 1 provide initial evidence for our proposed effect (H_1). Indeed, consumers evaluate a billboard placed in a low-clutter area more favorably than the same sign placed in a high-clutter area. Specifically, when a billboard is displayed in a low-clutter (vs. high-clutter) area with no other billboard, consumers evaluate it more favorably, find it more aesthetically appealing, and are more likely to share an image of the billboard on social media. Moreover, because all the signage stimuli used in Study 1 was moderately aesthetic, we provide evidence for our white space account. That is, our results are consistent with our theorizing that the presence of white space in a low-clutter area makes a sign seem more aesthetic, which in turn enhances the overall evaluation of the sign.

Although the findings of Study 1 are consistent with our white-space explanation, one could argue that they emerged because participants were more involved in the evaluation task and better able to attend to the target sign in the low-clutter condition due to the lack of distraction from multiple competing signs. Although plausible, we note that in all of our experimental conditions, participants were explicitly informed to attend to the target billboard (i.e., the Magikist lips). As such, we can assume that participants' involvement did not vary across the conditions. Nevertheless, research on fluency (*c.f.*, Reber et al., 1998) suggests that the metacognitive difficulty of processing information—known as disfluency—can adversely affect evaluations. According to this alternative account, the presence of multiple competing billboards in the high-clutter condition may have been distracting to viewers and yielded a sense of processing disfluency, thereby lowering evaluations. Although the mediation results of Study 1 suggest that perceived aesthetic value plays a role in driving our observed effect, in the next study we will attempt to more directly rule out a (dis)fluency explanation.

Study 2 also examines whether a contrast effect might influence evaluations of signs in a high-clutter area. Specifically, when a target sign is aesthetically inferior to the competing signs in a high-clutter area, the contrast effect should have a negative effect on evaluations of the target sign. In such a situation, both the contrast effect and the lack of white space should dampen evaluations of the target sign, and thus evaluations in a high-clutter sign area should be lower. The effect observed in Study 1 should be replicated, however, when a target sign is aesthetically superior to the competing signs in a high-clutter area, the contrast effect should have a positive effect on how it is evaluated. Given that the contrast effect and the lack of white space act in opposing directions on evaluations of the target sign, the benefit of placing a sign in a low-clutter area should be attenuated.

Study 2

The objectives of Study 2 are twofold: to replicate the results of Study 1 and to show evidence for the contrast effect as another underlying mechanism. In order to do so, we manipulate the aesthetic value of the target

billboard (low vs. high) and examine its moderating role in our proposed effect. Specifically, we predict that we will replicate the findings from Study 1 when participants evaluate billboards that are low in aesthetic value. According to our theorizing (H_2 and H_3), this effect will be attenuated for billboards that are high in aesthetic value and also among participants who are highly knowledgeable in art.

By illustrating the moderating impact of aesthetic value and consumers' knowledge about art, we aim to rule out the (dis)fluency alternative described earlier. Whereas our proposed mechanism—multiply determined by white space and the contrast effect—predicts an interaction between clutter and perceived aesthetic value on the overall evaluation of the target sign, a (dis)fluency account predicts a main effect in which high clutter areas always result in lower evaluations of the target sign.

Method

One hundred and eighty-six respondents ($M_{age} = 38.34$, $SD_{age} = 12.09$, 45.7% female) from an American online panel (Amazon Mechanical Turk) participated in this study in exchange for nominal monetary compensation.

We employed a 2 (billboard clutter: low vs. high) x 2 (billboard aesthetic value: low vs. high) between-subjects design. We manipulated the aesthetic value of a target billboard based on the results of the pilot study we mentioned earlier ($N = 202$). The three billboards that participants found to be most aesthetic included billboards from Flying Biscuit Café, Flying Heart Brewery, and Marvels ($M = 5.60$). On the other hand, the three billboards that participants found to be least aesthetic were those of ICP Painting, Jerome's Furniture, and Panera Bread ($M = 3.40$; see Appendix for stimuli).

The billboard clutter was manipulated in the same fashion as in Study 1. Unlike Study 1, however, we displayed all the billboards in a field background, as the background location—field versus street—did not impact billboard judgments in the previous study. In the high-clutter condition, each billboard that was high or low in aesthetic value was presented with four other moderately aesthetic billboards ($M = 4.50$); in

this condition participants were presented with a total of five billboards. When the target billboard was high [low] in aesthetic value, the remaining four billboards were considered aesthetically inferior [superior] to the target billboard. In the low-clutter condition, participants saw a billboard that was either high or low in aesthetic value displayed in a field by itself. In each condition, participants reviewed three different, randomly presented billboards (all high or all low in aesthetic value).

After viewing each billboard, participants were asked to indicate their opinion using five different scales that ranged from negative to positive, unfavorable to favorable, dislike very much to like very much, bad to good, and unpleasant to pleasant. All scales ranged from 1 to 7, with higher numbers representative of more positive evaluations. For our analysis, we created an evaluation index by averaging these highly correlated scales ($\alpha = .97$).

We then measured participants' subjective knowledge of art by having them indicate the extent to which they are familiar with art and their level of knowledge of art in general on a seven-point scale. We aggregated these two items to create an art knowledge index ($\alpha = .88$).

Results

A two-way ANOVA revealed that there was a main effect of aesthetic value ($F(1, 182) = 16.01, p < .001$) on the evaluation of billboards. Participants evaluated the billboards that were high in aesthetic value ($M = 5.62, SD = 1.34$) more favorably than the billboards that were low in aesthetic value ($M = 4.78, SD = 1.55$). More importantly, this main effect was qualified by a significant interaction effect between aesthetic value and clutter ($F(1, 182) = 5.96, p = .016$). Participants evaluated billboards that were low in aesthetic value more favorably when they were presented in isolation, in a low-clutter location ($M = 5.15, SD = 1.30$), compared to when they were presented with other billboards in a high-clutter location ($M = 4.41, SD = 1.67; F(1, 182) = 6.18, p = .014$). This effect, however, was not evident when participants evaluated billboards that were high in aesthetic value ($M_{low-clutter} = 5.48, SD = 1.39$ vs. $M_{high-clutter} = 5.76, SD = 1.28; F(1, 182) = .91, p = .34$). These results are depicted in Figure 5.

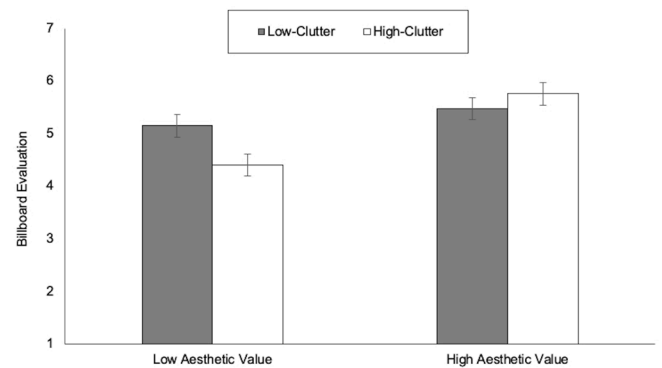


Figure 5 / Results of Study 2: Billboard Evaluation as a Function of Clutter and Aesthetic Value

Furthermore, we tested the moderating effect of participants' knowledge in art. The aesthetic value of the billboard did not interact with art knowledge and was excluded from the subsequent analysis. We ran an Ordinary Least Squares regression on billboard evaluation using billboard clutter, art knowledge, and their interaction term as predictors. There was a significant interaction effect between billboard clutter and art knowledge ($B = .50, SE = .15, t(182) = 3.30, p = .001$). As shown in Figure 6, spotlight analysis revealed that when participants were less knowledgeable about art ($M - 1SD$), they evaluated the billboards displayed in a low-clutter area more favorably than those in a high-clutter area ($B = .95, SE = .29, t(182) = 3.17, p = .002$). When participants were highly knowledgeable about art ($M + 1SD$), this effect did not emerge ($B = -.43, SE = .29, t(182) = -1.46, p = .15$).

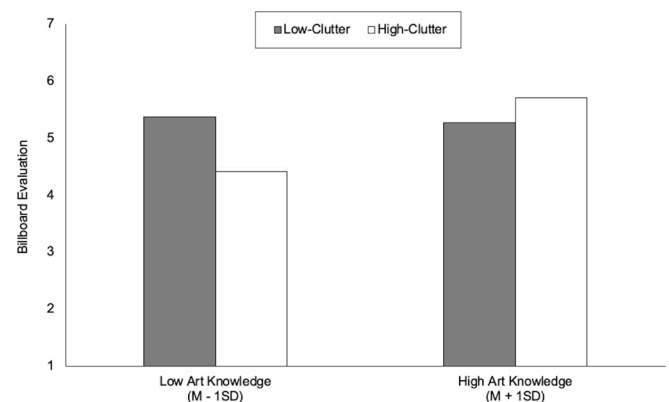


Figure 6 / Results of Study 2: Billboard Evaluation as a Function of Clutter and Knowledge of Art

Discussion

Study 2 delineates boundary conditions in which the advantage of a low-clutter environment on billboard evaluations does not emerge. We replicate the primary finding of Study 1 (i.e., a low-clutter billboard is evaluated more favorably than a high-clutter billboard) when consumers evaluate a billboard that is low in aesthetic value or when consumers have limited knowledge about art. This effect, however, is weaker when consumers evaluate a billboard that is high in aesthetic value or when they are highly knowledgeable about art.

The findings from Study 2 suggest that fluency may not be a primary driver of our effect. First, as previously mentioned, a fluency account would not predict an interaction between signage clutter and aesthetic value on the evaluation of a billboard. Second, the fluency account also cannot explain the observed interaction effect between clutter and participants' general knowledge of art. Metacognitive ease of processing would predict higher evaluations for billboards when they are located in low-clutter areas regardless of consumers' expertise in art. However, the results from Study 2 are consistent with our theorizing. While target signs in low-clutter (vs. high-clutter) areas are evaluated more favorably by consumers with low knowledge of art, this effect is not observed among consumers with high knowledge of art. We reason that this is because less knowledgeable consumers are more likely to rely on contextual cues such as the white space and/or other competing signs in the background to make judgments about a target sign. Highly knowledgeable consumers, however, are confident in their own judgments and have the expertise to evaluate a target sign based solely on the content of the sign.

In addition to ruling out a fluency-based alternative explanation, Study 2 also suggests that the contrast effect acts in concert with white space to influence billboard evaluations. If the presence of white space were the sole driver of our proposed effect, consumers would have exhibited a stronger preference for a highly aesthetic billboard when it was displayed alone in a low-traffic area than when it was displayed with inferior signs in a high-clutter area. Instead, in this study, we found no evidence of such a difference, supporting our

proposition that consumers' evaluations are multiply determined by both the presence of white space and a contrast effect.

GENERAL DISCUSSION

Academic scholars and practitioners concur that off-premise signs, such as billboards, will be more effective and yield higher economic returns if they are installed in high-traffic areas rather than low-traffic areas (Donthu et al., 1993; Franke & Taylor, 2017; Wilson & Till, 2010). Indeed, high-traffic areas come with a higher density of consumers, which allows for greater exposure. However, high-traffic areas create competition, which may result in advertising clutter. In this research, we illustrate that placing the same sign in a low-clutter environment can lead to higher consumer evaluations. Across two studies, we provide converging evidence that consumers evaluate a billboard more favorably when it is displayed by itself than when it is displayed with other signs. We further delineate boundary conditions in which the benefits of a low-clutter environment are attenuated. Specifically, the effect disappears when the target sign of interest is highly aesthetic, and when consumers believe they are highly knowledgeable about art.

We show that the positive effect of low-clutter locations occurs because a sign displayed alone is perceived as having higher aesthetic value than when it is placed alongside other signs, thereby increasing its overall evaluation. More importantly, we argue that this effect is multiply determined by the presence of white space and the contrast effect triggered by other competing signs in the visual layout. Building on prior work regarding consumers' aesthetic judgments, our findings indicate that the enhanced white space in low-clutter areas elicits a greater sense of aesthetic value, whereas competing signs in high-clutter areas lead consumers to make judgments about the target sign by comparing it against the others. In Study 1, we provide evidence for our white space account by holding the target and competing signs constant across all conditions. In Study 2, we demonstrate that the effect may also be a manifestation of the contrast effect by directly manipulating the aesthetic value of the target sign.

Previous research has identified a number of elements that affect the evaluation of signs (see Bullough, 2017; Stempler & Polger, 2013; Van Loock et al., 2010). Whereas this work has mainly focused on the message content of signs (e.g., Isaac, 2020; Wu et al. 2020; Sundar et al., 2019), our research examines how an external factor such as the sign's location influences evaluations of billboards. In doing so, we introduce a novel construct, where perceived artistic value is a determinant of off-premise signage evaluation.

In addition to extending prior work on signage, our research also contributes to marketing research on consumers' aesthetic judgments. Prior work in this stream has examined the role of aesthetic value in products (Sevilla & Townsend, 2016), brand logos (Sharma & Varki, 2018), and print and video advertisements (Olsen et al., 2011; Pracejus et al., 2006). To our knowledge, this research is the first to document the role of perceived artistic value and to show how it interacts with sign location to impact consumer evaluations.

As of 2020, the value of the worldwide billboard market is 6.9 billion U.S. dollars (IBIS World, 2020). Whereas common intuition suggests that billboards should always be placed in high-traffic locations, our work suggests that low-traffic locations—which tend to be lower in clutter—may offer certain advantages. Specifically, the increased aesthetic value of a sign in a low-clutter location may result in higher consumer evaluations. Based on our studies, the advantage of being in a low-clutter environment may be greatest when a sign's aesthetic value is intrinsically low or moderate. This work might also be insightful for city planners, zoning boards, and sign regulators. Specifically, our research indicates that co-located signs (i.e., high-clutter areas) are perceived as less aesthetic, whereas a sign displayed by itself is considered to be more aesthetic. To the extent that a governmental agency wants to ensure that a certain neighborhood or geographic area is perceived as historic and less commercial, it may be beneficial to restrict the number of co-located signs.

Of course, practitioners must cautiously weigh the pros and cons of high- versus low-clutter environments to

determine the optimal location for off-premise signs. Any benefit that a firm receives in terms of aesthetic appeal from placing a sign in a less costly, low-clutter area may be counteracted by the higher reach of a high-clutter installation, given that high-clutter areas are typically highly trafficked. Additionally, a limitation of our research is that it focused primarily on sign evaluations and not on downstream behaviors, such as product purchase. Furthermore, participants were explicitly asked to focus on a target billboard and provide an evaluation in our studies, so future research is needed to better understand whether the effects we observed will persist in more naturalistic contexts when consumers are not directed to focus on a particular sign and provide a judgment. Finally, we encourage signage researchers to investigate whether the effects obtained in our studies will differ depending on the product or service advertised. For example, consumers may expect billboards for hedonic (i.e., self-expressive) products to be more aesthetic, but may not prefer aesthetic billboards for utilitarian (i.e., functional) products.

Although the present research focused solely on off-premise signage and specifically on billboards, this work could be extended to examine on-premise signage as well. For example, when multiple, co-located on-premise signs are used to advertise different offerings from the same company, it is uncertain whether this clutter will lower perceptions of aesthetic value and sign evaluations in the same way that it affects judgments of off-premise billboards that advertise different companies or brands. An important difference between the two contexts is that viewers of on-premise (vs. off-premise) signs are more likely to have higher levels of involvement and to be more familiar with the advertised offering since they have already decided to visit the business. Although the results of Study 1 suggest that our observed effects occur irrespective of brand familiarity, future research is needed to fully understand whether the effects of clutter manifest in similar ways for both off- and on-premise signage.

REFERENCES







- Alba, J. W. & Hutchinson, J. W. (1987). Dimensions of Consumer Expertise. *Journal of Consumer Research*, 13(4), 411.
- Arielli, E. (2012). Contrast and Assimilation in Aesthetic Judgments of Visual Artworks. *Empirical Studies of the Arts*, 30(1), 59–74.
<https://doi.org/10.2190/em.30.1.f>
- Bullough, J. (2017). Factors Affecting Sign Visibility, Conspicuity, and Legibility. *Interdisciplinary Journal of Signage and Wayfinding*, 1(2), 2–25.
- CBS Chicago & Cody, J. (2013, March 27). *Local Entrepreneur Buys Iconic Magikist Sign, Wants It Back Up in Chicago*. CBS Chicago.
<https://chicago.cbslocal.com/2013/03/27/local-entrepreneur-buys-iconic-magikist-sign-wants-it-back-up-in-chicago>.
- Cunha, M. & Shulman, J. D. (2011). Assimilation and Contrast in Price Evaluations. *Journal of Consumer Research*, 37(5), 822–835.
- Dodds, W. B. (1995). Market Cues Affect on Consumers' Product Evaluations. *Journal of Marketing Theory and Practice*, 3(2), 50–63.
- Donthu, N., Cherian, J., & Bhargava, M. (1993). Factors influencing recall of outdoor advertising. *Journal of Advertising Research*, 33(3), 64–72.
- Estes, Z., Brotto, L., & Busacca, B. (2018). The value of art in marketing: An emotion-based model of how artworks in ads improve product evaluations. *Journal of Business Research*, 85, 396–405.
- Hagtvedt, H. & Patrick, V. M. (2008). Art and the brand: The role of visual art in enhancing brand extendibility. *Journal of Consumer Psychology*, 18(3), 212–222.
- Hagtvedt, H., Patrick, V. M., & Hagtvedt, R. (2008). The Perception and Evaluation of Visual Art. *Empirical Studies of the Arts*, 26(2), 197–218.
- Homburg, C., Schwemmler, M., & Kuehnl, C. (2015). New Product Design: Concept, Measurement, and Consequences. *Journal of Marketing*, 79(3), 41–56.
- Huettl, V. & Gierl, H. (2012). Visual art in advertising: The effects of utilitarian vs. hedonic product positioning and price information. *Marketing Letters*, 23(3), 893–904.
- IBISWorld. (n.d.). *Billboard & Outdoor Advertising in the US Market Size 2002–2026*. Retrieved October 30, 2010, from <https://www.ibisworld.com/industry-statistics/market-size/billboard-outdoor-advertising-united-states>.
- International Sign Association. (n.d.). *ISA POSITION STATEMENTS*. Retrieved October 30, 2020, from <https://www.signs.org/educate-your-local-officials/isa-position-statements>
- Isaac, M. S. (2020). A Sign of Trust? The value of source attribution in accolade claims. *Interdisciplinary Journal of Signage and Wayfinding*, 4(2), 23–36.
- Kahneman, D. & Miller, D. T. (1986). Norm theory: Comparing reality to its alternatives. *Psychological Review*, 93(2), 136–153.
- Kellaris, J. J. & Machleit, K. A. (2016). Signage as marketing communication: A conceptual model and research propositions. *Interdisciplinary Journal of Signage and Wayfinding*, 1(1), 1–17.
- Kellaris, J. J., Machleit, K. A., & Gaffney, D. R. (2020). Sign evaluation and compliance under mortality salience: Lessons from a pandemic. *Interdisciplinary Journal of Signage and Wayfinding*, 4(2), 51–66.
- Knuth, M., Behe, B. K., & Huddleston, P. T. (2020). Simple or complex? Consumer response to display signs. *Interdisciplinary Journal of Signage and Wayfinding*, 4(2), 7–22.
- Krishna, A., Cian, L., & Sokolova, T. (2016). The power of sensory marketing in advertising. *Current Opinion in Psychology*, 10, 142–147.
- Lee, H-C., Chen, W-W., & Wang, C. W. (2014). The role of visual art in enhancing perceived prestige of luxury brands. *Marketing Letters*, 26(4), 593–606.
- Lynch, Jr., J. G., Chakravarti, D., & Mitra, A. (1991). Contrast Effects in Consumer Judgments: Changes in Mental Representations or in the Anchoring of Rating Scales? *Journal of Consumer Research*, 18(3), 284.
- Mitchell, A. A. & Olson, J. C. (1981). Are product attribute beliefs the only mediator of advertising effects on brand attitude? *Journal of Marketing Research*, 18(3), 318–332.
- Out of Home Advertising Association of America. (n.d.). *OAAA Facts and Figures*. Retrieved October 30, 2020, from <https://oaaa.org/AboutOOH/Factsamp;Figures.aspx>.
- Out of Home Advertising Association of America. (n.d.). *OBIE Awards: About the Awards*. Retrieved December 29, 2020, from <https://obieawards.org/About-The-Awards>.

- Patrick, V. M. (2016). Everyday consumer aesthetics. *Current Opinion in Psychology*, 10, 60–64.
- Phillips, B. J. & McQuarrie, E. F. (2010). Narrative and Persuasion in Fashion Advertising. *Journal of Consumer Research*, 37(3), 368–392.
- Pracejus, J. W., Olsen, G. D., & O'Guinn, T. C. (2006). How Nothing Became Something: White Space, Rhetoric, History, and Meaning. *Journal of Consumer Research*, 33(1), 82–90.
- Puccinelli, N. M., Chandrashekar, R., Grewal, D., & Suri, R. (2013). Are Men Seduced by Red? The Effect of Red Versus Black Prices on Price Perceptions. *Journal of Retailing*, 89(2), 115–125.
- Reer, R., Winkielman, P., & Schwarz, N. (1998). Effect of Perceptual Fluency on Affective Judgments. *Psychological Science*, 9(1), 45–48.
- Schwarz, N. & Bless, H. (1992). Constructing reality and its alternatives: An inclusion/exclusion model of assimilation and contrast effects in social judgment. In: L. Martin & A. Tesser (Eds.), *The Construction of Social Judgment* (pp. 217-245). Hillsdale, NJ: Erlbaum.
- Semin, G. R. & Palma, T. A. (2014). Why the bride wears white: Grounding gender with brightness. *Journal of Consumer Psychology*, 24(2), 217–225.
- Shimizu, K. (2002). The study on the circumstances of out-of-home advertising in America and developing a measurement index of outdoor advertising in Japan. *Josai international review* 8, 53-72.
- Stempler, A. F. & Polger, M. A. (2013). Do You See the Signs? Evaluating Language, Branding, and Design in a Library Signage Audit. *Public Services Quarterly*, 9(2), 121–135.
- Sundar, A., Wu, R., & Kardes, F. R. (2019). Faded Fonts. *Interdisciplinary Journal of Signage and Wayfinding*, 3(1), 16–27.
- Tousignant, C. & Bodner, G. E. (2014). Context effects on beauty ratings of photos: Building contrast effects that erode but cannot be knocked down. *Psychology of Aesthetics, Creativity, and the Arts*, 8(1), 81–86.
- Tousignant, C. & Bodner, G. E. (2018). Context effects on beauty ratings of abstract paintings: Contrast, contrast, everywhere! *Psychology of Aesthetics, Creativity, and the Arts*, 12(3), 369–377.
- Van Loock, N., Vermeir, I., and Geuens, M. (2010). Advertising repetition and complexity of digital signage advertisements: simplicity rules! In: *39th European Marketing Academy Conference*. Ghent: Department of Marketing
- Wu, R., Han, X., Liu, M., & Kardes, F. R. (2020). Effects of Time for Deliberation and Disfluency on Omission Neglect. *Interdisciplinary Journal of Signage and Wayfinding*, 4(2), 37–50.
- Yan, D., Sengupta, J., & Wyer, R. S. (2014). Package size and perceived quality: The intervening role of unit price perceptions. *Journal of Consumer Psychology*, 24(1), 4–17.







APPENDICES

	Low-Clutter	High-Clutter
Street Background		
Field Background		

Stimuli Used in Study 1

	Low-Clutter	High-Clutter
Low Aesthetic Value Billboards		
		
		

Stimuli in Used in the Low Aesthetic Value in Study 2

	Low-Clutter	High-Clutter
High Aesthetic Value Billboards		
		
		

Stimuli in Used in the High Aesthetic Value in Study 2

