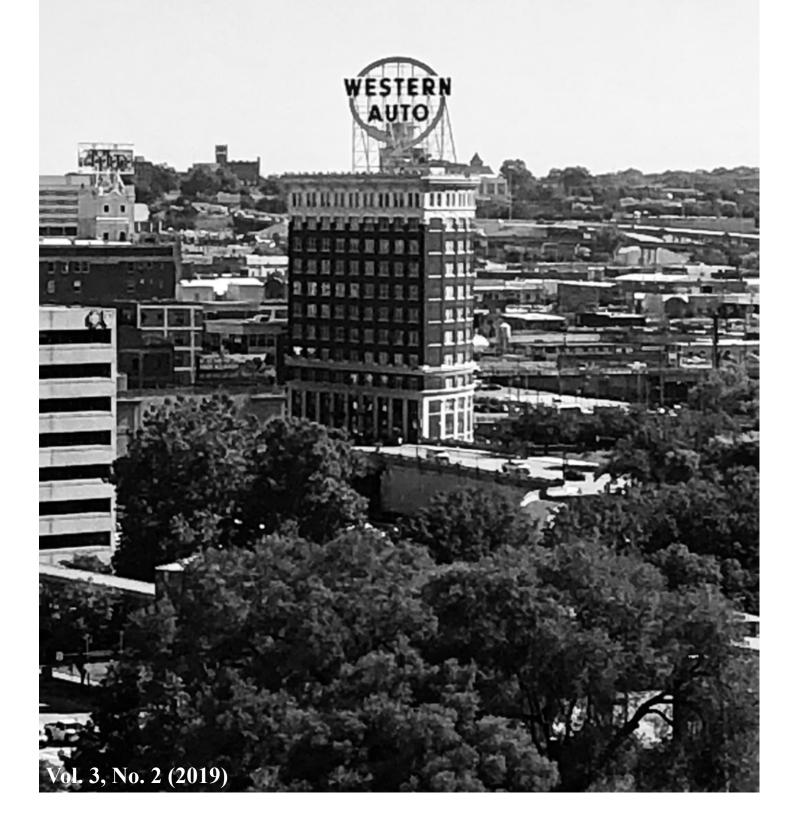
Interdisciplinary Journal of Signage and Wayfinding

Legibility, Interpretation & Decision-making



Introduction

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Scholars often write about the legibility of signs based on the characteristics of the sign and its surrounds. However, what is most fundamental in this equation is the sign users, those who see the sign, interpret its meaning, and utilize it as a wayfinding or decision-making aid. In this issue of the *Interdisciplinary Journal of Signage and Wayfinding* (IJSW), featured authors seek to understand the role of user interpretation in the legibility equation.

Dr. John Bullough shares two pieces of research assessing both legibility and comfort as experienced by the sign user. He demonstrates the importance of sign makers considering the environmental factors that impact a user's ability to read and interpret signs, including speed of traffic and level of luminance.

Dr. Julia Fallon tests similar principles by exploring customer satisfaction as it relates to wayfinding on cruise ships.

Dr. Bryce Lowery details the importance of signs as a part of the experience economy. He contends that while they seek to draw attention to businesses that offer entertainment services, some signs become important parts of the making of places. They are also vital tools for sustaining the overall economic integrity of these places.

Kelly Porter and Dr. Melanie Richards write about "making do." Not all business owners are able to invest the same amount of capital in sign design and production. While the techniques they utilize may be more primitive, their signs are often eye-catching and even iconic, appealing to users whose eyes are drawn to that which is unique. This issue of IJSW continues to showcase the diversity of research in this special field. IJSW is now the home of research across disciplines that pushes inquiry in the area of signs and wayfinding. I have appreciated the opportunity to work with the Academic Advisory Council for Signage Research and Education to create this platform. Thanks to Patty Herbin, Executive Director of AACSRE, and the journal's advisory committee, chaired by Dr. Vikas Mehta. I am especially grateful for those who have helped grow and craft this journal, including: Madeline Hunter, Jani Wertin, Sabra Helton, and Dr. Elizabeth Otto, and to all of the authors and reviewers who have provided support. None of this would have been possible without the support of our partners at the University of Oklahoma, including Dr. Bryce Lowery and librarians David Corbly and Jen Waller.

It is my pleasure to introduce you to the new editorial team, Dr. Vikas Mehta and Dr. Christopher Auffrey. Both known for their work and leadership in the field of sign research and education, this pair will take this venue to the next level. I wish them well and pledge continued support to help them build this exciting home for sign discourse.

With Gratitude, Dawn Jourdan

Brief Communication: Impact of Sign Panel Luminance on Visual Comfort

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INTRODUCTION

Signs need to be detected in order to be read. For this reason, signs are usually designed to be brighter than the environments in which they are located. Garvey (2015) and Bullough (2017) have summarized recommendations for brightness levels of signs in different ambient environments (e.g., daytime, nighttime, urban, rural). One concern regarding sign brightness is that the sign does not become too bright that it could serve as a distraction or a source of discomfort (Garvey, 2005) to pedestrians, drivers, cyclists and other observers, or that its legibility could be reduced (Cornog & Rose, 1967). For example, Freyssinier, Narendran, and Bullough (2006) reported that observers began to judge channel letter signs to be too bright and difficult to read if the character luminance exceeded 200 cd/m².

One approach that has been suggested for limiting the apparent brightness of a sign was published by Lewin (2008), who suggested that the illuminance from a sign at a particular viewing distance should not exceed 3 lux at the eyes of an observer. The International Sign Association (ISA, 2016) has also recommended this approach, suggesting specific measurement distances. This approach essentially limits the average luminance of the sign (at a value of approximately 300 cd/m² for the measurement distances recommended by ISA), because a uniform gray sign could produce the same illuminance at the eyes as a sign consisting of a black and white checkerboard pattern. This may be relevant to visual judgments of signs because Bullough and Sweater Hickcox (2012) reported that ratings of discomfort glare from large-area light sources were worse when the maximum luminance of the source was higher, even if two sources produced

Abstract /

Signs should produce useful visual information to road and sidewalk users without creating undue glare or visual distraction. In order to assist in navigation and wayfinding, signs must be sufficiently conspicuous. For this reason their brightnesses are often higher than the surrounding visual environment. However, if the brightness becomes too high, the sign risks contributing to visual discomfort. Several published recommendations for limiting sign brightness include limits on the maximum illuminance from the sign (in lux). There is evidence, however, that the maximum luminance of a light source can also influence visual comfort. To investigate the potential role of maximum luminance, a pilot study was carried out to assess visual responses to sign panels producing the same illuminance but differing in luminance.



Figure 1 / Scale model display used in the experiment.

the same illuminance at the eyes. In other words, a checkerboard pattern might be expected to be judged as more glaring than a uniformly gray sign with the same average luminance. If this finding can be extended to signs, quantifying the illuminance alone from a sign might not be sufficient to avoid problems.

In order to begin to understand whether and how maximum sign luminance might influence visual discomfort from signs, a small-scale pilot laboratory investigation was carried out.

METHOD

A total of 10 individuals (aged 20 to 47 years, mean 31) participated in the pilot experiment. Inside a darkened laboratory with black-painted walls, a modular scale-model display was set up (Figure 1). The display consisted of three illuminated panels (5 cm by 6 cm each; 15 cm by 6 cm for all three panels together) covered with white plastic acrylic diffusers. Behind the diffusers were 100 W halogen capsule lamps inside white-painted metal enclosures. The lamps could be operated independently with dimming switches to illuminate each panel.

Three luminous conditions were set up (Figure 2), each producing a vertical illuminance of 3 lux at a location 1 m in front of the display where subjects were positioned:

- All three panels illuminated with a luminance of 333 cd/m².
- The two outer panels only, each illuminated to a luminance of 500 cd/m².
- The center panel only, illuminated to a luminance of 1000 cd/m^2 .

The viewing geometry simulated the angular size of a sign 15 m by 6 m at a viewing distance of 100 m, or 7.5 m by 3 m at a viewing distance of 50 m. The panel luminances were adjusted through a combination of neutral density gel filters placed in front of the display and minor dimming







Figure 2 / a: Display with all panels at 333 cd/m². b: Display with outer panels at 500 cd/m². c: Display with center panel at 1000 cd/m².

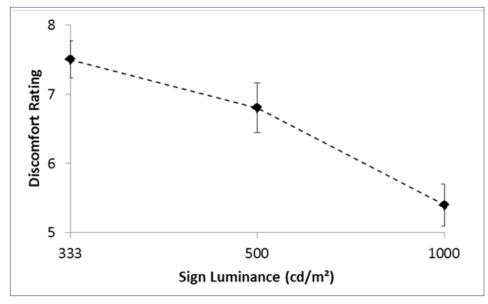


Figure 3 / Mean discomfort ratings (+/- standard errors of the mean) for each of the lighting conditions used in the present experiment.

adjustments, keeping the correlated color temperature (CCT) of each condition within a range of approximately 100 K. It should be noted that the average luminance of all three panels together (333 cd/m²) was constant for all three conditions, although the configurations differed in maximum luminance.

After adapting to the dark conditions in the laboratory for 5 minutes, subjects in this experiment were asked to look toward each condition in a random order for about 15 seconds and make judgments of conspicuity by answering the question: "How attention-getting would this be if it were a sign along the road at night (1 = not at all attention-getting, 4 = very attention-getting)?" Subjects also rated their visual comfort using the De Boer (1967) rating scale (1 = unbearable, 3 = disturbing, 5 = just permissible, 7 = satisfactory, 9 = just noticeable glare). There was a period of about 1 minute between each trial to help subjects readjust to the dark laboratory conditions.

RESULTS

A within-subjects analysis of variance (ANOVA) was conducted on the ratings for each question. No statistically significant effect of lighting condition was found for the judgments of attention-getting characteristics ($F_{2,18} = 2.25$, p > 0.05); mean ratings for each condition were between 3 (somewhat attention-getting) and 4 (very attention-getting). Likely, this is related to the fact that the sign display was presented in an otherwise dark room with no other sources of light visible, so that the sign panel easily attracted the participants' attention. The ANOVA revealed a statistically significant effect of lighting conditions on ratings of visual comfort ($F_{2,18} = 15.67$, p < 0.001), as illustrated in Figure 3.

Specifically, the mean ratings for the conditions where the display luminance increased from 333 to 1000 cd/m² decreased monotonically in numerical value (decreases indicate *increased* discomfort). At the highest luminance (1000 cd/m²) the mean rating approached the "just permissible" value of 5 on the De Boer (1967) scale, and a paired t-test adjusted with the Bonferroni correction (McGuigan, 1990) confirmed that the discomfort rating for 333 cd/m² was statistically significantly different from the rating for 1000 cd/m² (t_o = 7.58, p < 0.001).

DISCUSSION AND CONCLUSIONS

The results in Figure 3 suggest that using an illuminance criterion of 3 lux at the eyes of an observer (resulting in the same average luminance) will not guarantee a similar level of discomfort experienced by observers. Of course, the range of conditions tested in this experiment was very limited. Only a single, dark, background condition was tested with no other sources of light present, and only a single illuminance value (3 lux) was used. Additionally, the display module used in the experiment did not actually contain any information such as a business name or other graphical elements.

Further, the overall angular size of the illuminated panels changed for the different luminance conditions, and this could have influenced the subjective judgments. Future research could use an array with a larger number of elements resulting in a much more similar overall angular size, to minimize the size differences. All of these factors could influence the degree to which a sign might be judged as uncomfortable to view. Nonetheless, it seems clear that a sign's maximum luminance can influence the degree of discomfort that the sign might produce for a driver or other observer, even if the illuminance from the sign (or its average luminance) does not change.

One argument for specifying the illuminance from a sign rather than its luminance in limiting brightness is that instrumentation for measuring illuminance is less expensive than luminance measurement equipment (Lewin, 2008). Garvey and Klena (2017) have published data on the luminances of some common illuminated sign configurations that can be useful to specifiers in estimating the maximum sign luminance.

In addition, if it is possible to approach an illuminated sign at night, its maximum luminance, if large enough, might be able to be estimated using an illuminance meter. By holding an illuminance meter so that it is facing the brightest portion of the sign (and generally, so that it is measuring the vertical illuminance from the sign) and so that the portion of the sign that is being measured (with the maximum luminance) largely fills the illuminance meter's field of view (e.g., from less than 15 cm away, and for a portion of the sign having a radius of at least 50 cm), it is possible to estimate the luminance as follows:

 $L \cong E / \pi$

where L is the luminance (in cd/m^2) and E is the vertical illuminance from the sign (in lux).

When making this type of measurement, it is critical that the portion of the sign being measured fills or nearly fills the illuminance meter's field of view. This can be checked by moving the illuminance meter a few centimeters closer to and further from the face of the sign; if the measured illuminance does not fluctuate substantially as the distance changes, then this criterion is likely to be met. In addition, the illuminance meter should not cast a shadow on the face of the sign if it is externally illuminated.

If the sign consists of a matrix of self-luminous elements, moving the illuminance meter along the face of the sign should not result in large fluctuations in measured values. If this is the case it may be necessary to take the average of the highest and lowest illuminance values for a portion of a sign to use in the equation above. It should be noted that this measurement method does not, however, yield high precision, but can be used to estimate luminance within approximately 20% or less.

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Brief Communication: Impact of Sign Character Aspect Ratio on Legibility

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INTRODUCTION

The ability for pedestrians, drivers, cyclists and other road and sidewalk users to identify and read signs is crucial for safe and efficient navigation through the built exterior environment. A good deal of effort has been made regarding the legibility of alphanumeric characters that might be used on signs (Tinker, 1963). Quantitative models of visual performance (e.g., Rea & Ouellette, 1991) to predict the relative speed and accuracy with which people can identify visual information on a sign include factors such as the luminance of the sign, the contrast between the characters on a sign and their background, and the size of the characters.

Empirical studies of the readability of different typefaces have also been conducted (Garvey et al., 1997; 2001; 2004; 2016). For example, investigations of typeface characteristics that improve legibility have indicated that often there are few, if any, differences between serif and non-serif fonts in terms of readability (Carter, Day, & Meggs, 1985; Kuhn, Garvey, & Pietrucha, 1998). A factor that has not been evaluated in many studies of legibility is the aspect ratio of a font's characters. Some published guidelines (e.g., CIDEA, 2010) suggest that a character on a sign is maximally legible when its height and width are nearly the same. There is indirect evidence supporting this claim; Bullough (2016) used the relative visual performance (RVP) model (Rea & Ouellette, 1991) to predict the legibility of highway sign characters with different font characteristics in a study by Garvey et al. (2016). Legibility distances were generally related to the size of the characters when luminance and contrast were held constant, but were systematically shorter when the sign characters were narrowest

Abstract /

Signs are critical elements of the visual environment for pedestrians, drivers and other users. Regardless of their purpose, signs should be easily detected and readily legible. Tools such as visual performance models have been developed to allow the assessment of the speed and accuracy with which observers can read information on a sign. These models include factors such as the luminance of the sign, the contrast between the sign's characters and their backgrounds, and the size of the characters. One factor that has not been included in visual performance models is the aspect ratio of characters, particularly of alphanumeric symbols. To address this, a small study was carried out to investigate observers' abilities to identify characters ranging in contrast and aspect ratio.

in terms of aspect ratio. The present paper summarizes a pilot laboratory study conducted to validate the *post hoc* analysis from Bullough (2016).

METHOD

Ten individuals aged 21 to 47 years (mean 37) participated in the study. Participants took part in a series of experimental trials, each consisting of viewing a random five-digit number for 2 seconds in the center of a computer display screen with a background luminance of 100 cd/m². After the 2-second interval, the screen was blanked and four random five-digit numbers, one of which was the number previously displayed, were shown at the top, bottom, left, and right sides of the display screen. The location of the correct number was randomized for each trial. Participants were asked to indicate, as quickly as possible, the location of the number that they had previously seen, by pressing the appropriate arrow key on a computer keyboard.

The aspect ratio of the characters was defined as the ratio between the height and width of the numerical symbols, and was 5.25, 1.26, 0.78, 0.46, or 0.26 for each trial (see Figure 1). All of the characters, regardless of their aspect ratio, subtended the same solid angle so that their size would be predicted to be the same by the RVP model (Rea & Ouellette, 1991).

The luminance contrast (C) of the numbers was defined by the following equation:

$$C = |L_{b} - L_{c}|/L_{b}$$

where L_b was the luminance of the background (always 100 cd/m²) and L_c was the luminance of the characters. The character luminance was either 10 cd/m² or 87 cd/m², resulting in luminance contrasts of 0.9 (high contrast) or 0.13 (low contrast), as illustrated qualitatively in Figure 2.

Each participant made 100 identification trials. With five aspect ratios and two contrast levels, there were 10 experimental conditions, and participants experienced 10 trials for each condition. All trials and conditions were presented in a randomized order.



Figure 1 / Character aspect ratios investigated in the legibility study. From top to bottom, aspect ratios (height/width) are 5.25, 1.26, 0.78, 0.46, and 0.26.



Figure 2 / Illustration of luminance contrast values used in the legibility study. The contrast (C) at left is 0.9; the contrast at right is 0.13. (Exact contrasts might not match what was displayed during the actual experiment.)

RESULTS

Accuracy of identification was always at least 96%. The identification times (Figure 3) were statistically significantly impacted by both contrast ($F_{1,9} = 106$, p < 0.001) and the aspect ratio ($F_{4,36} = 3.99$, p < 0.01), based on a within-subjects analysis of variance (ANOVA), and there was no statistically significant interaction ($F_{4,36} = 0.38$, p > 0.05) between contrast and aspect ratio.

DISCUSSION

Visual performance models that use the solid angular size of the object to be seen as the characterization of size, such as the RVP model (Rea & Ouellette, 1991), would predict all of the aspect ratios in the present study to have the same size, but the results in Figure 3 suggest that very narrow or wide characters are not identified as quickly as those with aspect ratios closer to one. Of interest however, the RVP model predicts (for a 37-year-old observer, the mean age of the subjects in this experiment) a visual response time for the low-contrast characters that is 18% longer than for the high-contrast characters. The average increase in identification times for the low-contrast characters was also 18%.

This correspondence supports the notion that the RVP model, which allows the user to estimate visual response times based on light level, size, and contrast (Rea & Ouellette, 1991), can be a useful tool in assessing the legibility properties of sign characters, provided differences in character aspect ratio are also considered.

The RVP model could, therefore, be used to assess the relative impacts of different aspect ratios in terms of differences in contrast. For example, the optimal aspect ratio in the present study was 1.26, whereas the aspect ratio (among the ones tested) that elicited the longest identification times was 0.26. On average, characters with an aspect ratio of 0.26 had identification times that were 14% longer than those with an aspect ratio of 1.26. Using the RVP model (assuming the same character size and observer average age as in the experiment), it can be determined that the luminance contrast reduction that results in a 14% increase in visual response time is a reduction from 0.9 to 0.16.

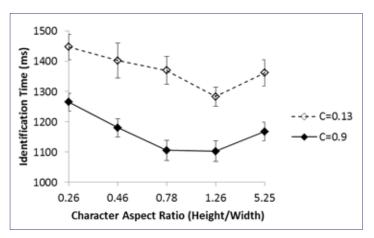


Figure 3 / Mean identification times (±standard error of the mean) for the five-digit numbers as a function of contrast and character aspect ratio.



Figure 4 / **Left:** Characters with a contrast of 0.9 and an aspect ratio of 0.26. **Right:** Characters with a contrast of 0.16 and an aspect ratio of 1.26. Both sets of characters would be expected to be equally legible based on the present results. (Exact contrasts may not match the stated values.)

In other words, under the conditions of the present experiment, characters with a contrast of 0.9 and an aspect ratio of 0.26 are equally legible (if legibility means being able to quickly identify characters) to characters with a contrast of 0.16 and an aspect ratio of 1.26. Figure 4 illustrates these conditions that would be expected to result in equal legibility.

CONCLUSION

The results of this pilot study, although limited by a small participant sample size and relatively young observers, clearly demonstrate a systematic effect of aspect ratio in the legibility of characters. They also illustrate the utility of models such as the RVP model (Rea & Ouellette, 1991) to provide quantitative assessments of the legibility of sign characters while simultaneously pointing out an important shortcoming, especially when typefaces with aspect ratios deviating from 1 are involved. These results suggest however, as illustrated in Figure 4, that very narrow or very wide typefaces could be addressed by a correction factor that trades off contrast with aspect ratio.

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Your Guess is as Good as Mine: Finding Your Way on Board a Cruise Ship

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INTRODUCTION

Wayfinding on board a large cruise ship might be mistakenly thought to be easy and straightforward, and this may well account for the absence of literature on this topic. This paper will address this gap by exploring and exposing the influences that shape our everyday practices while cruising, itself a moving experience, carrying us by consent across the seas to distant shores. The need to address on-site experiences is not as Pearce (2011) points out, always fully investigated in post-holiday satisfaction surveys, and so this exploration of how passengers react and respond to their cruise ship surroundings exposes the scale, and sometimes overwhelming enormity, of some of these vessels now selling a mass tourism product.

There is reporting upon wayfinding elsewhere, in which there are accounts that examine other similarly large spaces, where it is more readily acknowledged that people may need help—for example in large care homes (see Caspi, 2014) or where they may be in a hurry, like airports (see Symonds, 2017). Such literature will be drawn upon here and supplemented with a cruising context.

To understand a mass cruise holiday experience, it is important to acknowledge that this holiday comprises a complete package for the customer. This may include travel to the point of boarding the ship, a specific itinerary for the duration of the trip, many inclusive services and amenities, the cabin of a particular category, plus supplementary services that have additional fees according to the operator policy (Gibson, 2006). This all-inclusive offer, plus easy access to some of the world's most popular destinations, has led to greater demand. So great is this demand, that cruising holidays increase in number each year, with American passengers in the main (CLIA, 2019). Passenger growth has taken place worldwide, however, within what Dowling (2006) describes as one of the star growth industries of the early 21st century and indeed, the Cruise Lines International Association (CLIA) projection for 2019 was that 30 million passengers will take a cruise (CLIA, 2019).

This research acknowledges this phenomenon and employs a sociocultural lens. This approach of using ethnographic research is because much of the extant literature uses a more internal cognitive approach (see Haldrup, 2004), and in this way, there is an opportunity to explore what Crouch (2000) describes as "closeup space" (p. 65). Within the research findings there is evidence that suggests a more external, somewhat manipulative, approach to the way we experience this far more intimate space and an evident power relation (Kauffman, 2002) to wayfinding, which is supported by explanation of data collection, analysis, and findings that are divided into two for the purposes of this paper; these are, either passive or active wayfinding experiences on board ship. This understanding of the two aspects is important in two ways: 1) wayfinding knowledge informs mobility, and the meaning of mobility is unpacked further in this paper by our discussion of how wayfinding enhances the existing interpretation of the word mobility, described as an "evocative keyword for the twenty-first century" (Hannam, Sheller, & Urry, 2006, p. 1); and 2), for the more dominant economic discourse, as Yarnal (2004) indicated, successful wayfinding is invaluable for mass market leading cruise companies to ensure customers are positive about their experiences and their commercial possibilities are exploited (Weaver, 2005a).

LITERATURE REVIEW

Finding our way around is evident in all aspects of daily life, but "the seas and all that moves in, on and across and through them, have not been embraced with the same enthusiasm as mobilities ashore" (Anim-Addo, Hasty, & Peters, 2014, p. 337) despite almost threequarters of the world's surface being covered by water (Gibson, 2006). Authors documenting the finding of our way in and across the water include Gladwin (1974) who highlights, in particular, the culturally revered navigation practices of the Polynesian islanders, who like all sailors, took their cues from nature including following wind patterns and the stars. This important ability and skill to traverse difficult waters or terrain was not called wayfinding until after Lynch (1960), and more recently Haldrup (2004), who see presentday tourists literally drifting along, 'absent-mindedly' inhabiting chosen spaces with social life and meaning. In 2004, Yarnal called for more investigation into what happens in tourism spaces and why. While arguably, there may be a view taken that there is much that is predictable (Ritzer, 2000; Weaver 2005b) on board ship, a changing and evolving consumer on board a huge vessel (itself a product of a dynamic market) endorses Yarnal's (2004) view.

It is noteworthy to mention here the very practical responses that have appeared in recent years, including the pioneering work undertaken by Valencak (2014), a student studying Industrial and Strategic Design in Denmark, who realised people get lost on large cruise ships and who made practical suggestions to enhance lighting in hallways to show how the wayfinding experience could be improved. One of this paper's authors, too, has been a consultant who audits the wayfinding experiences of tourists in different contexts and locations (see https://www.travelwayfinding.com/ audits/). These pioneering activities highlight how there is a very real problem on the very large vessels, and it is possible to make substantive changes to the passenger experience.

The importance of supporting the wayfinding experience as these authors suggest cannot be underestimated. The structure and organization of the mass packaged cruising experience appeals to tourists wanting a home away from home and has been referred to by Berger (2004) as "floating utopias" (p. 65) because all passenger needs are met. Gibson (2006) too, remarks that the ship is the real destination, and his belief is developed further in Chin's (2008) discussion of the "McDisneyization" (p. 84) of cruising, a context that demonstrates "efficiency, predictability, calculability and controllability," all factors that influence the daily experience of a cruise holiday as a comforting space. As such, interesting insights into tourist expectations are revealed. Indeed, there is a suggestion that these experiences offer an "intersection of travelling and belonging" (van Bets, Lamers & van Tatenhove, 2017,

p. 781). Such a viewpoint reflects something of what Harvey (1989, cited in Hannam et al., 2006, p. 3) refers to as a "spatial fix" where there is a restricted mobility within the confines of a particular locale. These observations about the cruising experience endorse the work of Mancini (2000) and his 14 reasons why people cruise stating, "There's a cruise that can satisfy virtually anyone," and he continues, "Few other vacation experiences can make that claim" (p. 16).

Despite such bold statements at the turn of the century and Berger's (2004) discussions of "the cruise phenomenon" (p. xii), Peters (2014) discusses how the ship "surprisingly gained only occasional consideration until recently in social scientific study" (p. 417), building upon her previous work where she highlighted that ships were slow and old-fashioned (Peters, 2010). She continues by saying that ships "make a world of people," and this observation was also highlighted by Hannam et al. (2006) stating that "places are like ships" (p. 13), so the movement on water and the sense of the body drifting is a language that has enriched the study of tourism. As such, this offers us an opportunity for an examination of mobility experience in a very different type of space, comprising the ship, the sea, and the shore (Gray, 2016).

The American cruise market is the one that has been the most mature to date (Chin, 2008), but as cruising has evolved and developed there is a much greater complexity in evidence. Van Bets, Lamers, and van Tatenhove (2017) attempted to unpack the complexity of cruise travel by highlighting the number of stakeholders involved and their desire to help understanding and interpretation by introducing a conceptual framework for what they call the marine community, identifying the layers of governance at local, national, and international levels and the importance of the preservation of the environment. The case study they used cited Schep et al.'s (2012) research, which showed how the island of Bonaire gained a 400% increase in cruise ship arrivals between 2005 and 2010. Such exponential growth is clearly evidence of how cruise travelling experience is worthy of greater attention in the literature.

The decreasing costs of cruise holidays, as operators benefit from economies of scale (Gibson, 2006), along with increasing capacity and route networks, have obviously been factors in the considerable growth in

this form of tourism (Lloyd, Henry, & Thyne, 2011). However, one other significant contributing factor to the growth in cruise tourism has been the recognition of the profit potential of the retirement community (Bartling, 2006) and encouragement by the cruise lines for retirees to become repeat passengers. These repeat passengers then bring differing behaviours, and Chin (2008) has noted how passengers seek experiences outside of the bubble of their tourist experience, but again, her intimation is that this comes with familiarity and a greater confidence in the experience.

Alongside the increase in passenger numbers is the increase in the size of ships, which have gained in their overall capacity, dimensions, tonnage, and speed (Robertson, 2004 cited in Gibson 2006). The following note from Asa Berger's (2004) cruise journal states: "The waiter says there are 100 cooks on the ship. It has almost 1,500 passengers and a staff of more than 500. A little city. A floating hotel, actually..." (p. 121).

This increasing size has continued into the supercruisers (Gibson, 2006), which Weeden (2015) refers to as Royal Caribbean Cruise Line's Oasis of the Seas: Allure of the Seas with 6,296 passengers and approximately 2,300 crew. These much larger vessels, incidentally often too large for many of the world's harbours, are inevitably going to offer challenges to the cruise passengers, and there are a range of emotions that accompany the movement of the body in such spaces. Berger (2004) describes how he and fellow passengers were constantly consulting maps and goes on to say,

"In a sense a ship is a labyrinth, a puzzling maze through which we wander, in search of some lounge or bar, not being certain at times whether we are heading toward the front or the back of the ship." (p. 75)

Passini (1996) summed up human responses to getting lost as "unpleasant, irritating" (p. 319) and creating a negative attitude, so the need to find a way around, expressed here as the embodied sociocultural dynamics of wayfinding, is important.

There are further obvious reasons: firstly safety; secondly, operational efficiency; and thirdly, commercial viability, e.g. encouragement of repeat visitors, customer satisfaction, and purchasing behaviour.

CONCEPTUAL FRAMEWORK

Anim-Addo et al. (2014) pose the questions: what does the movement of people on board cruise ships tell us about the way that we move around?; what do these spaces prompt in our behaviour?; and how are ship-based mobilities different from other spaces? The potential for mobility and movement on ships is different and more than just moving. Ingold (2011) describes this difference as having a "logic of inversion," seeing a complex inhabitation of a world that has what he describes as a "meshwork" of connections and experiences (p. 150).

This complexity of experience while travelling has been discussed by Cresswell (2010) who suggests a range of different aspects, such as route and speed, that combine to inform meaning through movement. In thinking about how cruise travellers experience the cruise ship (especially as first- time passengers), Bourdieu's "theory of practice" is employed here because Walther (2014, p. 7) believes it is a generic tool that can be applied to a range of different contexts. This has been selected because it is insightful in its sociological interpretation bringing forth the interplay between agency and structure.

Bourdieu (1984) encapsulates his theory with the following equation: $\{(habitus)(capital)\} + field = practice (p. 101).$

For the purposes of this paper, our interpretation reduces his thinking loosely to an understanding that habitus is our disposition, capital our knowledge, and field the place of interactions. Bourdieu (1992) has explained his thinking about the importance of agency and how agents will use their capital to improve their positions in the field. Within the cruise ship context Bourdieu's equation is: {(Passengers as embodied agents with dispositions and some knowledge)} + ship = wayfinding experience.

RESEARCH APPROACH

At the time of writing, the mass tourism cruising experience is dominated by very large cruise line operators, and as such, these companies act as gatekeepers for the transparency (or lack of it) in cruising operational and behaviour research. Difficulty in gaining access to information from cruise line operators is an issue that has been highlighted before (Weaver, 2005a; Papathanassis, Lukovic, & Vogel, 2012), and as Wood (2004) and Foster (1986) before him point out, the cruise market is known to comprise poorly paid workers and oftentimes rich customers, although the pricing has decreased of late with the advent of the enormous cruise liners, some with population sizes of small towns (Chin, 2008). Despite the offer of an investigation to help commercial interests, access was denied. Therefore, the decision was made that for this type of investigation, where a more upfront and personal experience is required, it should be close to an autoethnographic fiction (Sparkes, 2002). This is similar to the style adopted by Symes (2012) who refers to himself as the passenger researcher/researcher passenger, and as such, combines ethnography and autoethnography. He includes himself as one of the researched, adopting a pseudonym and claiming he is undertaking analytic autoethnography, as suggested by Anderson, 2006 (cited in Symes, 2012). Like the researchers of this paper, he believes that being on board rather than at a distance brings considerable insights to his notes and offers the chance to provide first-hand assurances to fellow passengers that anonymity and confidentiality are preserved. This paper also follows the example of Berger (2004) in becoming what he calls a "cruise ethnology," in which the writing is informed by "ideas, information, and insights" (p. xiii) that occurred while cruising and also relates some personal experiences.

The information gathered draws from five cruises taken by two of the authors between 2010-2017, together equalling one calendar month of cruising experience in either Europe or the Americas. In the manner of Klein (1993), these experiences are presented as one. In common with Foster (1986), the initial experiences were drawn upon retrospectively, and the more active participant observation was developed over time. The authors also took the view that the "community being researched is not a passive component," and that rather, "the informants were also agents in the shaping of the data, the data-collecting opportunities and the course of the fieldwork" (Goodwin et al., 2003, p. 576). As Goodwin et al. (2003) discovered, in the cruising context it seemed far more natural to engage in naturally occurring dialogue rather than to press people who were on holiday. In actuality, upon discovery of the topic of research, many were willing to share, but these were the customers not the employees.

Gathering data took the form of diary entries, and in the case of the retrospective cruising, examining photographs and sharing memories. Diary entries were informed by handwritten notes either on paper or on a mobile phone. Accompanied by photographs, these proved to be insightful. After Yarnal (2004), some re-examination happened after each cruise, and afterwards, some supplementary information was co-written by the travelling companions. These were all uploaded electronically, and using the tool of a bibliographic manager (in this instance Zotero), all the transcripts were cross-referenced, which allowed some emerging interpretations.

Moreover, the organization of the information gathered in this way follows a thematic approach because this style of information gathering and storing allowed all the authors to immerse themselves in the data and identify its key features (Sparkes & Smith, 2014). Achieving depth in the interpretation meant that the application and relevance of the conceptual underpinning was explored more fully, and consequently, led to a more theoretical interpretation of the field notes gathered on board ship. This way of researching, documenting, and interpreting leads to an understanding of the social life by expressing the lived experience itself, and it is hoped to achieve what Richardson (2000) alludes to as a substantive contribution.

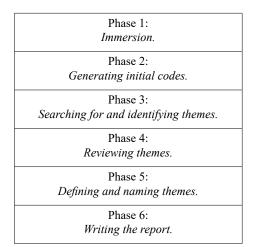
The phases of the research are identified in the diagram n Figure 1. In reality this was not so linear and phases 1 and 2 were connected.

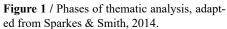
WHAT WAS DISCOVERED ABOUT WAYFINDING ON CRUISE SHIPS

As Bourdieu (1977) highlighted, there is some homogenisation of the dispositions and interests on the cruise (see also Papathanassis, Lukovic, & Vogel, 2012). The thematic analysis found these to be both passive and active (see Figure 2).

Being passive

Group behaviour and being herded were evidenced on board as many people shared and populated the same spaces. This is demonstrated by passengers following the crowd to reach the swimming pool or the dining area, for example. This mindless and docile behaviour is criticized by Culler (1988), but as one passenger explained, he is relaxing and doesn't want to be switched into decision-making as is expected in his job back home and is, therefore, happy to be led while on holiday (Goh, 2014). Similarly, not wanting any anxiety or the unexpected during a holiday appears to be the norm, endorsing the view that the absence of time constraints and the bounded environment of the space on board ship makes the whole experience far more recreational (Fewings, 2001).





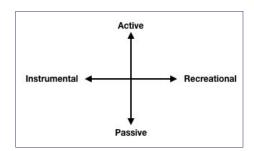


Figure 2 / Dispositions of the wayfinding habitus, expressed as continua.

Those with mobility issues are required to take some responsibility for the routes used around the ship, but one passenger who uses a wheelchair stated to the authors that she had been fully informed about the limitations of the access available and found the crew to be helpful; the best description of her behaviour would therefore be passive and instrumental.

Elsewhere, roll-on/roll-off ferries often utilize colorcoded routing, usually by painted lines on the floor, but our cruise researchers found limited use of this simple wayfinding technique on board their cruises ships, with evidence of color-coding used only for some staircases and decks. There is a sense that passengers can simply suit themselves, and even with days spent at sea, there is no real sense of any directed encouragement to familiarize with the entirety of the ship. However, blue routing lines were in evidence at the ports themselves implying their functionality rather than an additional support for a leisure experience.

The confines of the ship space rely on cooperation in emergencies, and adherence to rules is vital. Passengers were aware of the importance of safety procedures and were willing to be led in drills; this was reported as instilling confidence in their operators. Here, the significance of crew members as wayfinding informants is paramount, and technology and signage are often seen as insufficient for real emergencies.

Crew member Patrick told us, "I help them find their way." He sees this in two forms: one getting around the ship, and the other when they disembark at ports and he's not there.

As Weaver (2005a) states, cruise ships have captive consumers, and consequently, operators use "steering behaviours" (p. 168), which are used to influence behaviours, and "Typically, casinos, bars and boutiques are situated in areas close to frequently used pedestrian walkways" (Weaver, 2005b, p. 353). The researchers for this paper, too, were oftentimes unintentionally walking into the casino having followed a particular route through the ship.

This sense of control and self-management that cruise line operators use is evidenced further by their purchase of islands and/or adoption of their own routes and stopping points, which are believed to be points of disembarkation where "nothing can go wrong" (Löfgren, 1999, p. 260). These shore excursions and tours are often guided to ensure what Gottdiener (2000) highlights as "relative safety" (p. 145). Added to this, the possible punishment of missing the ship's departure, plus all the related expenses to rejoin (Douglas & Douglas, 2004), compliance is really expected and sits well with the commercial drive to sell shore excursions. As cruise passenger James states, the convenience factor is worth paying for: "I would rather pay £50 to avoid having the hassle of trying to find my own way around," and Patrick, the crew member, illustrates how the cruise operators use this situation by selling tours to passengers. He says,

"For the port of call, we don't give maps for several reasons. Firstly, we don't want people to know that the city center is so close and it's so easy to reach. We prefer them to buy the shuttle service."

The attempt at deluding the customer (this may well make them happy) is evidenced elsewhere. When after visiting the Bahamian Island of Great Stirrup Cay, it was discovered that the island was owned by the cruise line and that is it is commonplace for the sand to be raked over after a visiting excursion with the sole purpose to obscure the footprints of previous visitors (Jaaksen, 2004; Löfgren 1999; Weaver 2005a).

Being Active

The researchers discovered that the experience before embarkation and on land were far more active experiences. The bounded nature of being on board cocooned passengers, so they engaged in recreational wayfinding (Fewings, 2001), taking pleasure in their personal discovery of the ship. Regular cruise travellers, Sue and Greg, have opted for the smaller ships on European rivers because of the ease in gaining familiarity with their surroundings and the much simpler and less time-consuming access to ports.

This sense of discovery varies depending upon customers' familiarity with the ship and their own sense of curiosity. Farr et al. (2014) believe that "wayfinding naturally occurs in both familiar and unfamiliar settings" in equal measure (p. 91). What often appeared to happen with many cruise passengers observed was that they used their own particular routes, and if for any reason they were taken off course—as was the case of one passenger who wished to avoid the crowds after a theatre performance—they could find themselves considerably disoriented (Field notes).

Such heuristic practices, i.e. when we adapt and find our way, demonstrate a far more active disposition and can be daunting for some, but in others they can be the source of relaxation and happiness (Chang, 2013). The following example stated by one passenger shows how some initiative can be drawn upon:

"In Lisbon, we chose the mini-bus transfer to the center offered by the excursion provider because we were unfamiliar with the destination. The transfer took 20 minutes and seemed rather long and complicated. Once in Lisbon city center we could see the ship and saw that we could walk back the distance of one mile or so."

Interestingly, of those spoken to, the most active were the repeat visitors to the ship because first-time visitors tended to be more content remaining on the vessel. The cultural capital (Bourdieu, 1993) that these repeat cruisers demonstrate is worthy of note, for the cruise operators cannot expect the same passivity that is shown by the novice passengers.

OVERALL FINDINGS

The cruise ship represents a bound space where people passively accept their situation and where familiarity encourages a far more active mindset. There would appear to be a continuum showing an adaptability in the consumer that cruise operators need to consider. Will their floating resorts maintain their customer base if the product remains the same?

This evolving recognition of the wayfinding habitus, or more specifically, evolving recreational and active dispositions toward wayfinding through repeated wayfinding practice on cruise excursions, is consistent with Bourdieu and Wacquant's (1992) description of habitus as an "open system of dispositions that is constantly subjected to experiences, and therefore constantly affected by them in a way that either reinforces or modifies its structures" (p. 133).

CONCLUDING COMMENTS

This paper attempts to address the unexplored topic of wayfinding on cruise ships. How we move around spaces

and interact with others is worthy of investigation, and by drawing upon the experiences of taking cruises, there is an opportunity to think and explore further about what behaviours reveal about human dispositions to cruise travelling experiences and mobilities.

The sheer enormity of the size of ships demonstrated in the current building of cruise ships for the oceans deems it obvious that there will be issues of orientation and sense-making. These ships have become floating resorts, and as such, may limit their ports of call and rely solely on their own internal activities and entertainments to satisfy their customers. That said, the research here found that familiarity leads to a more active participant who may well demand more individual shaping of their experience, as can be seen elsewhere in the travel industry.

Using Bourdieu's interpretations of a theory of practice, we have identified something of the dispositions that exist on board a cruise ship as being passive or active. Material gathered on board five separate cruises were combined and amalgamated into one. In doing so, there is evidence that there is a fluidity in the behaviour of consumers.

As individual passengers on board a cruise ship may retain and exercise a degree of agency, we are often unknowingly guided, and as such, our "freedom to act otherwise" is limited (Giddens, 1984, p. 9). On board, designated paths control the use of the space, and ultimately conform to expectations. There is the inevitable prospect, too, that smart technology will bring changes (CLIA, 2019) to what has already been described as a maturing industry in need of revitalisation by some (Weeden, Lester, & Thyne, 2011).

Overall, our conclusion is that wayfinding is an emotional and a very human experience demonstrating far more than simply following signs and the transfer from a to b. The research shows room for further exploration into the passive and active engagement of passengers on large vessels, which by sheer size and scale impact upon the overall passenger experience. Travelling on board and floating on water can be meaningful to a wide-range of passenger types in many different ways, but what passengers all have in common is that signage and wayfinding support in the making of that meaning.

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Outdoor Advertising: Landmark of the Experience Economy

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A HISTORY OF ENTERTAINMENT AND EXPERIENCE

Outdoor advertising has long been a feature of the American landscape and a visual indicator of opportunities to be entertained. Outdoor or out-ofhome advertising is often distinguished from other types of signs because it appears in a location separate from the good or service is promotes (OAA, 2019). First appearing in the United States around the time of the civil war, early outdoor advertisements often featured unique and memorable experiences such as troupes of entertainers, theatrical performances, and other live shows (Agnew, 1938). Circuses were some of the most prolific and influential advertisers. The traveling shows frequently employed individuals who would go ahead of the performers to secure advertising space with the managers of nearby theaters and opera houses who served as proprietors of early signage (Hendon & Muhs, 1986). They would post images like the one seen in Figure 1, giving local residents a small glimpse of the unique and exotic offerings soon to arrive in town. Signs that were typically used for local events were repurposed during breaks in the seasonal production schedule to welcome shows into cities and towns. These early interactions between local and vagabond entertainers would morph into the modern outdoor advertising industry. Borne from entertainers and associated with cities and towns supportive of the performing arts, outdoor advertising signified an opportunity to experience something fun, interesting, and spectacular.

The connection between outdoor advertising and centers of entertainment continued until about the 1930s when private automobile ownership provided access to new kinds of experiences. The growth of personal transportation and the accompanying network of roadways opened up new

Abstract /

Outdoor advertising has a long history of serving as an indicator of opportunities to be entertained. In the United States, early outdoor advertisements often featured traveling shows, circuses, theater offerings, and live acts. As the automobile changed lifestyle trends, billboards followed the new roading experience into suburbs and the countryside. Today, outdoor advertising, clustered in entertainment districts like Times Square, is again seen as a component of the urban experience and a signal of consumer opportunity. Through spatial reorganization, integration into the built environment, and the development of increasingly engaged technologies, outdoor advertising is adapting to the demands for experiential urban life. Signage is being used in new ways to enhance places that are commonly associated with consuming goods and services. As a landmark of the experience economy, signage orients individuals to these locations by defining entertainment districts and drawing attention to opportunities to eat, drink, and have fun.



Figure 1 / Circus Billboard, 1931, Jacob J. Gayer, National Geographic Image Collection.

sites for the placement of signage along the early American transportation system and ushered in an era of marketing places made accessible through personal auto ownership (Gudis, 2004; Jakle & Sculle, 2004). The automobile brought into being a whole new set of roadside landmarks, including signage and outdoor advertising, that set the visual tone of the American roading experience (Appleyard, Lynch & Myer, 1964). Today, some of these roadside landscapes like Route 66 remain linked physically and mentally to historical, remnant, and existing signs (Caton & Santos, 2007). This shift in the lifestyle of Americans led a withering of the connection between outdoor advertising and central commercial and entertainment districts. As well-off automobile owners were able to relocate into suburban and rural areas, and roadways allowed access to vast areas of scenic areas and wilderness for leisure and tourism, urban experiences drew fewer and fewer visitors.

Today, the roadside remains an important location for outdoor advertising, but contemporary trends toward increasing urbanization and demand for consumer experiences suggests a renewed role for billboards in cities. Urban areas are growing in new ways indicative of increasing demand for consumer-focused living (Glaeser, Kolko, & Saiz, 2001). Preferences for shopping, buying, and experiencing goods (Veblen, 1908; Douglas & Isherwood, 1979) influence the quality of life in cities. Those who plan, design, and build in these urban settings cater to preferences for environments opulent with sensory stimuli, the 21st century version of bright lights, big city. Amenities like outdoor advertising that cater directly to consumer preferences attract attention and contribute to the economic vitality of cities and regions (Glaeser & Gottlieb, 2006). Signs and billboards support and encourage activity by signaling commercial vitality and consumer opportunity. Robert Venturi, Denise Scott Brown and Steven Izenour suggest the importance signs and billboards have in aiding navigation and conveying the meaning of the commercial environment. In *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form* (1977) the three comment on the significance of signage as an architectural component of the auto-oriented commercial strip.

"Signs, through their sculptural forms or pictorial silhouettes, their particular positions in space, their inflected shape, and their graphic meaning...

identify and unify the megastructure of symbolic connections...

communicating a complexity of meaning through hundreds of associations in a few seconds from far away." (p. 13)

Often underappreciated, signs and billboards convey information efficiently and make apparent the commercial uses that otherwise would be unremarkable and potentially overlooked. In sites of commercial entertainment like Las Vegas, signs are an integral part of the built environment serving to connect people with historical and contemporary aspects of sites of entertainment.

In this way, outdoor advertising serves as a landmark to help identify locations supportive of consumer activities and opportunity (Lowery, 2014). Landmarks are elements of the built environment that create memorable experiences, help individuals wayfind, and enable orientation by creating a sense of legibility and coherence within immediate surroundings (Lynch, 1960). Outdoor advertising, redesigned corporate plazas, and new skyscrapers physically define these spaces, setting them apart from nearby neighborhoods by creating a sense of economic success and signaling financial resilience in downtowns following a period of decline (Loukaitou-Sideris & Banerjee, 1998). Once believed to be a fantasy relegated to the special effects of cinema, landscapes of outdoor advertising are employed around the world to encourage development and bolster the sustainability of urban land investment (Lopez-Puarejo & Bassell, 2009). Billboards, painted signs, and projected light are being used to spatially define the locations of consumer opportunity. Outdoor shopping centers, theater districts, and nodes of dense, human activity can be accentuated by the lights and activity created by signs.

THE EXEMPLAR: TIMES SQUARE

One of the most poignant examples of the landscape of the experience economy in the United States is Times Square. In 1916, New York City passed an ordinance that organized and ordered the city into distinct land uses, ushering in the use of local land use control and the era of billboards



Figure 2 / Times Square, about 1940, Vintage Postcard.

in Times Square (Charyn, 1986). Signs of all shapes and sizes soon covered the area as the intersection of major automobile thoroughfares was transformed from an indistinct series of non-architectural spaces into one of the most powerful images of urban habitat in the world (Huxtable, 1991). Signage became architecture in the bustling entertainment district of New York City as billboards of all shapes and sizes signaled the opportunity for a truly unique metropolitan experience (Tell, 2007). As seen in Figure 2, billboards were trompe l'oeil in this space, extending the constant activity of cars and people on the street using colorful and vibrant advertisements to visually extend the action onto the façades of the buildings, day and night.

Speaking on his visit to the city in 1947, Le Corbusier captures the significance of the square as a physical experience and indelible mental image:

"Everyone has heard about the incandescent path cutting diagonally across Manhattan... Electricity reigns, but is it dynamic here, exploding, moving, sparking, with lights running white, blue, red, green, yellow.

There remains a nocturnal festival characteristic of modern times. I remember that the light filled our ears, and that the intense, powerful color excited us and gave us pleasure." (p 102)

Nestled far enough away from the posh residents on 5th Avenue, the appearance of Times Square is the result of location and an influential group of individuals who transformed it into a quintessential economic space (Leach, 1991a). The aesthetic of the experience economy markets and sells goods, entices consumption, and generates curiosity (Leach, 1991b). Signs signal the active economic nature of the district by creating a feeling of

"commercial extravaganza" even among the already busy and crowded streets of New York City (Harris, 1991, p. 82). The billboards came to epitomize the environment; enveloping passersby and overpowering the cacophony of economic transactions through spectacle, emotion, and opportunities to experience something incredible.

Even following a period of relative decline, the revitalization of the square and its transformation into the pedestrian thoroughfare of today relied on outdoor advertising. Beginning around the middle of the 20th century, Times Square came to signal a different kind of entertainment as crime, adult venues, illicit drug use, and prostitution epitomized the square, resulting in decades of political promises to resdesign and reconfigure the space (Makagon, 2004). Then, in 1992, a renewed vision for Times Square imagined a sort of return to its former grandeur, as a site of entertainment and experience invigorated by flashing lights and glowing signs. Billboards were employed to transform the landscape into vast and sweeping striations of advertisements. Billboards would serve as landmarks of the emerging experience economy; a "model for urban development worldwide," a place where the signs and lights alleviate "bleakness" by activating the landscape (Robert A.M. Stern Architects, 2013). The billboards in the square are significant precisely because of the experience they provide, allowing visitors to the square to escape the quotidian encounters of everyday life and encounter something spectacular (Makagon, 2004). In this way, the square and its built environment create a collective fascination through a "culture of congestion" where people, material goods, cultural and symbolic meaning assemble to create a resilient image of active urban life (Berman, 2006).

Years later, many of the signs are now digital, lighting up the square with pulsating light and interactive media. Beginning in 2008, local efforts succeeded in converting the once car-dominated square into a pedestrian thoroughfare complete with a viewing platform and outdoor seating so visitors can take in the outdoor advertisements like a museum exhibit (Sadik-Khan, 2016). The lights of outdoor advertising were part of the transformation of the square over the years, supportive of the experience economy and part of making the square the world-renowned locale that it is today.

THE REORGANIZATION AND CHANGING NATURE OF LANDMARKS OF THE EXPERIENCE ECONOMY

New innovations in outdoor advertising coupled with the spatial reorganization of people and cities offer opportunities to engage in new forms of place making focused on the experience economy. Three trends are suggestive of the future direction of outdoor advertising: 1) increasing emphasis on place and location, 2) sophisticated use of buildings and spaces, and 3) emerging interactive environments (Koeck & Warnaby, 2014).

Los Angeles provides one example of a municipality working to organize outdoor advertising spatially within the city. Over the past 20 years the local government has been trying to reach a compromise on a proposal to cluster outdoor advertising, particularly digital signage, around the commercial-oriented regional centers of the city (Lowery, 2016). The centers, shown in Figure 3, are part of a long-term regional plan for the Los Angeles basin that imagined series of interconnected hubs of dense development, high activity, and commerce (City of Los Angeles, 1970). The current proposal would create sign district overlays in each of these areas to transform the polycentric nodes of the city into landscapes of lights, signs, and digital effects.

As seen in Figure 4, outdoor advertising is also innovative in its application increasingly and deployment, allowing for a variety of different messages to appear as part of the architecture. New forms of outdoor advertising improve the integration of signs into the built environment and offer opportunities to plan, design, and create districts dedicated to entertainment. Outdoor advertising is increasingly designed to allow advertisers to connect to consumers more directly, integrating into the surrounding environment and responding to local conditions (Slefo, 2017). Supergraphics affixed to structures, digital screens, and projections provide new ways of thinking about how outdoor advertising and signs can be employed to activate space with light and images. As this collection of articles in designboom suggest-https://www.designboom.com/tag/billboardarchitecture-and-design/)-outdoor advertising is increasingly adaptative and supportive of efforts to remedy climate change, homelessness, and lack of pedestrian affordances in public space. These new design strategies and techniques of demarcating areas of commercial enjoyment can be situated within more traditional models of sign-making to create visually diverse and engaging environments.

New technologies are also leading to increasingly immersive interactive environments that allow new kinds of engagement between consumers and digital media. A notable example involved the use of digital signage to alert passersby of the origin of arriving planes into London Heathrow Airport (Klaassen, 2014). On the ground, outdoor advertising will increasingly serve as a point of sale for marketers, allowing mobile-

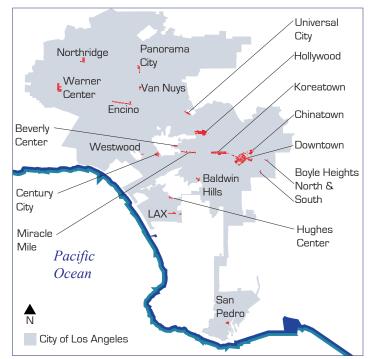


Figure 3 / Proposed and Existing Sign Districts of Los Angeles, 2019. (Image provided by author.)



Figure 4 / Products and art exhibits as part of the architecture of down-town Los Angeles. (Images provided by author.)

based technologies to support purchases instantly through online and physically proximate retailers (Neff, 2015). By engaging wireless technology embedded in mobile devices, advertisements will soon be able to incentivize nearby shoppers (Grewal, Bart, Spann, & Zubcsek, 2016; Inman & Nikolova, 2017) through tailored promotions (Sturari, et al., 2016), suggesting a potentially viable opportunity to employ similar technology in pedestrian-oriented entertainment districts, shopping centers, and sports venues.

These spatial and physical design strategies have important implications for the future of cities. In many ways, changes in the way outdoor advertising is employed within the physical environment provide opportunities to address concerns about the impact messaging and light can have on the well-being of human (Lowery & Sloane, 2014) and ecological communities (Longcore & Rich, 2004). The capacity to program advertising, regulate light, and engage viewers suggests a future for advertising to serve as an agent of social change (Cronin, 2004), and "an art that enhances human and humane values" (Schudson, 1984, p. 242). The adaptability and malleability of the medium of outdoor advertising can serve to both signify the commercial nature of public, as well as

reflect and inspire life and support efforts to create more resilient city form (Cronin, 2008). Innovations in the deployment of outdoor advertising point to the potential for future financial gain and newfound ability to revolutionize urban experiences.

In entertainment and commercial districts, outdoor advertisements have the potential to invigorate space through the deployment of immersive and engaged technologies. Long touted as "the real art gallery of the people" (Poster Advertising Association, 1922, p. 67), today outdoor advertising represents a new form of urban flux, one way of enabling the built environment to cater to contemporary demands for active, experiential, and visually stimulating places (Hack, 2011). Frames and poles once necessary to support posters and billboards are no longer needed to create the supergraphics, projections, and digital displays that serve as landmarks of the experience economy. Outdoor advertising is being used in innovative ways to enhance the quality of life in places that are commonly associated with entertainment, tourism, and the consumption of material goods. As a landmark of the experience economy, signage orients within the built environment by drawing attention to experiential opportunities.

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Learning from Mom and Pop: "Making Do" in Design

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INTRODUCTION

Business signage is an old art, originating with the first buyers and sellers, and decisions about what to include in signage to promote a business remain critical for financial success. Signage decisions are especially crucial for successful brand identity, and effective signage is essential to "mom and pop" businesses because the signs they place on and around their businesses represent their primary communication to court new customers.

The need for powerful signage to draw customers to small businesses has become even more urgent today as "big box" retailers such as Walmart, Target, and Home Depot, as well as online retailers like Amazon, have displaced customers and decreased revenue for small businesses, particularly when operating in the same industry or niche.¹ Since the 1970s, big box stores have dramatically increased across the United States, and beginning in the 1990s, boutiques and small chain stores have also seen enormous expansion.² In the wake of this growth, the number of traditional local stores and services has declined greatly. As small businesses fall increasingly in the shadow of the big retailers, bold signage is critical for mom and pops to communicate products and services efficiently. Without an engaging surface presentation, a small store can blend into the background, allowing prospective buyers to pass by unaware and take their business elsewhere.

The survival and prosperity of mom and pop stores in the face of big box competition is important not only to the small business sector, but also to the communities these small businesses serve. "Mom and pop" is a colloquial term for small businesses that are family-owned (sometimes operated by both a mother and father, though either a man or woman may be the main proprietor), and the family's children often work alongside their parents. Because mom and pops are typically found in lower- to mid-range socioeconomic geographies and can be found in both rural and

Abstract /

There is an art in "making do." Making do is a vernacular phrase heard frequently in the Southeast United States, especially in lower socioeconomic households. It means "making ends meet" when money is tight by using the resources on hand. We investigate the design of making do by small businesses in such contexts by analyzing their business signage. A trained designer may pass by these "mom and pop" shops and find the signage to be merely novel, but we find that there is much more to learn. We complete a case series analysis of mom and pop signage using in-depth methods, including autoethnographic accounts of each author's lived experience with mom and pop signage and a subsequent content analysis using visual grounded theory methods in a highly reflexive approach. We discover three main themes in play: "radical resourcefulness," "authenticity/ humanity," and the "amateur aesthetic." Radical resourcefulness is a dramatic shift in use and reuse of materials. A design may be considered "authentic" or have a visible connection to "humanity" when viewers can see evidence of the human hand or human decision-making in the design artifact. Amateur aesthetic, is a term applied to untrained "designers" who transform readily available materials to achieve their design goals. Each of these themes is especially relevant to disciplines such as communications and marketing, illuminating possibilities of community partnership and collaboration. At the same time, approaching the significance of mom and pop signage in this way provides insights for the professional design discipline as a whole, presenting opportunities for new interdisciplinary research, teaching, and service.

Keywords /

sustainable design, radical resourcefulness, authentic design, small business, branding, entrepreneurship, business signage, mom and pop, vernacular design urban areas, they are the establishments upon which many "long-term, lower class residents rely."³ Despite the economic and social significance of mom and pops, professional designers may see only novelty in their signage. Such a superficial consideration consigns the design process behind mom and pop signs to the murky, neglected "narrative black box" described by Kazi-Tani and Valentin.⁴ In reality, however, small business owners are "actively participat(ing) in generating the content and quality of [their] experiences" through their signs.⁵

Therefore, our purpose driving this research endeavor is clear. Understanding mom and pop signage more deeply presents designers, marketers, and business owners ample opportunities to learn from one another. There is currently an immense amount of waste in the commonly used disposable design approach. Through investigating the design decisions made by mom and pops, we expect to find a rich learning opportunity in terms of economically sound and sustainable practices that the design discipline should not overlook. As a reciprocal benefit to these mom and pop establishments, partnership with professional designers and marketers can help boost the success of small businesses through the application of industry best practices, which can subsequently increase economic vitality in the communities mom and pops serve.

MOM AND POP SIGNAGE: LEARNING BEYOND NOVELTY

Many small businesses cannot afford to hire out sign development to professionals. Instead, entrepreneurs typically use their own skills and resources to complete the work themselves, and scholars have noted the sustainability and authenticity of mom and pop onpremise signs. At the same time, the significance of this kind of "making do" can be slighted, perceived as the simple by-product of necessity or as novelty. Even worse, mom and pop signage may easily be read in a way that perpetuates stereotypes about small businesses and their customers, albeit unintentionally.⁶ Prior to even considering a sign's iconography, a viewer could readily assume that the general nonprofessional appearance of mom and pop signage reflects the low socioeconomic status and education level of business owners and customers. It is essential to avoid such assumptions to gain a full understanding of mom and pop signage. Indeed, as Lupton reminds us, there are

no defined markers for what should be considered true "design"—the categories of high and low in design are relative. The design field needs to more fully examine and understand the role "spontaneous and unpretentious voices" have played in its evolution, and the study of mom and pop signage from new perspectives that look beyond novelty and class stereotypes promises many opportunities.⁷

HYPOTHESIS ONE: SUSTAINABILITY IN DESIGN

Sustainable design refrains from harming the environment, or actively improves it. This model of sustainability appears frequently in contemporary design literature, and we expect to see sustainability surface by necessity, rather than premeditated choice, in mom and pop signage. Frequently, small business owners are forced to be resourceful because of budget constraints and therefore reuse and repurpose materials in a highly sustainable way. Making a virtue of necessity, this application of creative problem solving⁸ for financial reasons becomes a wellspring of sustainability. Indeed, the strategies mom and pops employ in their design choices correspond closely to the American Institute of Graphic Arts' Living Principles for Design, a roadmap for sustainable design that includes such prompts as: "What is the expected life span of the artifact? Can it be extended? What other use could this artifact have? Can the artifact be easily repaired and reused? Can it be upgraded?"9 Though most small business owners presumably do not consciously and systematically follow a sustainable design process, their works nevertheless evidence core principles of sustainable design. Therefore, we hypothesize that sustainability will be a principal theme found in our analysis.

HYPOTHESIS TWO: AUTHENTICITY AND HUMANITY IN DESIGN

A design may be considered "authentic" or have a visible connection to "humanity" when viewers can see evidence of the human hand or human decisionmaking in the design artifact. There is a unique and clear fingerprint of the artist in authentic design—the antithesis of mass-produced signage. This is similar to the Japanese concept of "yubiato," where one may see the literal fingerprint of the artist in a final, created piece of pottery. This doesn't necessarily mean that signage is hand lettered, but the design process clearly evinces freedom in decisionmaking. As we explore the process of mom and pop signage creation, with signage typically produced by the business owner, we expect to find the theme of authenticity in our analysis.

Gee's Bend quilts, a prominent example of authenticity in design, started from the humblest origins, but over the years have been elevated to the realms of high art as admiring historians and scholars like William Arnett have publicized their designs widely, and commercial galleries have sought them out.¹⁰ Their designs emerged from necessity, using materials that were readily available, yet each quiltmaker had their own voice and authorship in the creative process. "Their freedom and variety are, in part, how they came to hang on gallery walls."¹¹

A more overt attempt to translate "authentic" design into mass branding elements is exemplified by the "hillbilly" branding visible in the Gatlinburg and Pigeon Forge areas of East Tennessee. In this work, the cultural identity of the hillbilly archetype is used as a reference in many branding decisions.¹² Exaggerated imperfections such as crooked lettering, offset type, rough edges, and misspelled words reflect a forthrightly factitious reflection of "authentic" hillbilly culture. Such images may reinforce negative cultural stereotypes, particularly regarding low education.¹³ Nevertheless, those markers of rustic authenticity remain a powerful resource for rural small businesses.



Figure 1 / Pieced Quilt c. 1979 by Lucy Mingo of Gee's Bend, Alabama. (Billvolckening, https:// commons.wikimedia.org/wiki/File:Pieced_ Quilt, c. 1979_by_Lucy_Mingo, Gee's Bend,_ Alabama.JPG#file), https://creativecommons. org/licenses/by-sa/4.0/legalcode



To create their own commercially successful signage, mom and pops may then draw on a continuum of images. On one end, business owners may cannily synthesize organic aesthetic traditions, like the forms exemplified by Gee's Bend quilts. Others may purposely invoke elements of fauxauthenticity, like we see in the Gatlinburg and Pigeon Forge signage examples (Figure 2). As evidenced here, both organic and faux-authenticity can be used to drive successful patron and customer engagement.

Figure 2 / Flapjack's Pancake Cabin, Ole' Smoky Moonshine, and Hillbilly Golf of Gatlinburg, TN. (Images provided by author.)

METHODS

In an effort to better understand signage decisions by Southeastern small businesses, the authors completed a case series report using two complementary methodological approaches. First, each author completed an autoethnographic account of her own lived experience with this subject matter and then analyzed her experience in relation to what she viewed, employing a highly reflexive approach. Second, they together completed a case series content analysis of small business signage from 2013 to the present from both urban and rural areas on the outskirts of mid-size Southern cities, employing a Visual Grounded Theory Methods approach.

Autoethnography is a process keenly focused on reflexivity and the interactions between the self and the social in understanding any phenomena. The method acknowledges that no researcher is without their own lived experience, and as such, cannot truly enter a phenomenological study as a "blank slate." Therefore, the key to deeper understanding is to acknowledge these inherent experiences and perceptions we bring to our work.¹⁴ Rather than creating bias, this process acknowledges past experiences that may enable us to more deeply understand the objects of our study as "cultural insiders."¹⁵ Though the authors of this study are not currently "complete members" of the group being studied,¹⁶ they are either from or have spent a considerable amount of their lives in and studying the Appalachian and Southeastern U.S. region. In addition, both spent their formative years in blue collar families in which they were repeatedly exposed to this type of signage. Finally, both currently study how brands communicate through effective design.

The application of Grounded Theory Methods (GTM) to visual cultural artifacts (VGTM) is a newer methodological development in the history

of GTM. Mey and Dietrich¹⁷ summarize much of the foundational work in this area. We have followed their suggested approach in our coding (heavily referencing Konecki's 2011 work) of "reconstructing the layers of meaning of an image from its context of production and reception," considering "the explicit requirements for the researcher's image analysis as well as implicit assumptions of the interpretation of the image," through our autoethnographic reflexive approach, and considering the "sociocultural analysis of the image context."18 This work underscores Glaser and Strauss's original intent for the methodology, which stresses that "all is data."¹⁹ We completed many of their suggested steps including contextualization, description, segmentation, coding, interpretation, category (theme) formation, sampling, and constant comparison in our work.20

METHOD ONE: AUTOETHNOGRAPHIC REFLECTION

Author One

"I grew up in rural Mississippi. My first introduction to design was a sign on the outside of my Pop's shop, which was on the same property as the house I lived in. My Pop was a country mechanic. He hand painted the sign on the masthead of his garage. Given the close proximity to my Pop's shop, I spent quite a bit of time in the office with my Granny who ran the books. I observed the interactions from an internal view, but also from what was perceived as the "feminine" side of the business.

"My dad followed in the same genre of work as my Pop. He was a traveling tire salesperson for more than a decade between the 70s and 80s. I got my name from Kelly Springfield tires. We would travel across the Southeast with tires piled higher than the cab of his truck. Most of the clientele were located in rural or isolated towns and non-metropolitan areas. These backroads were peppered with mom and pop businesses, many of whom created their own signs just like my Pop.

"A majority of these deep-south communities had more equal levels of diversity between blacks and whites. In my child's mind, I made no distinction between black or white business owners, though now as an adult I am sensitive to the differences and unique challenges and struggles that these business owners faced based on both race and class.

"After obtaining my degree in Graphic Design, I worked in the industry designing for Ryobi Power Tools, The B.B. King Museum, and Mississippi Delta tourism. In this capacity, living deep in the Mississippi Delta, known simultaneously for its poverty and creativity, I was surrounded by local businesses that survived using their own innovation and self-taught abilities to create their brand identities and communications. In grad school, I revisited my roots and began to study these humble signs through the lens of visual literacy and with a more critical thinking approach."

Author Two

"I was raised in the mountains of East Tennessee. I come from a blue collar family, grew up on the more rural edges of a small city, and was the first in my family to go to college. I remember as a child driving on backroads and seeing signs for "strawberries," "fresh eggs," "apples," "honey," and "hay for sale." Growing up, my father's family also owned a Christmas tree farm, and I recall the handmade signs touting the different prices of trees and wreaths by height and size as I would sit and help my grandmother make wreaths.

"As an adult, I reflect now on ways my socioeconomic status, urbanicity, race, and gender affected my childhood experiences and my current perceptions. I realize that I was exposed early on to ways that men and women were expected to take leadership in small businesses when working together as "mom" and "pop"—as my grandparents modeled both on the farm and also as they ran a small store in the community. Living in a predominantly white area, I also came to wonder how these experiences might differ in areas with greater racial and ethnic diversity. Growing up in a more rural area, I also recognize that the types of business signage I was exposed to as a child were likely very different than those in a more urban environmentthough some design elements likely carried across environments.

"As I grew older and entered professional employment, I continued to be very interested in how brands visually communicated. Some of my own professional work involved researching brand imagery with the goal of understanding what these visual manifestations conveyed to potential customers. I have since returned to my hometown and am teaching in the regional university, conveying experiences from my years working for Fortune 500 organizations to my students. In this transition, I was curious to learn how my experiences to date (both professional and academic) might help the traditional mom and pop businesses that still abound in the area today."

METHOD TWO: VGTM CONTENT ANALYSIS

Sample Selection

To define the cross section of 112 images of signage included in this study, it is necessary to note that all signs were created by non-professionals (i.e., amateurs) and could be considered the equivalent of outsider or folk art. Most came from less-affluent areas across the Southeastern United States. In outward appearance, they may appear to be constructed hastily without adherence to a brand standard and with obvious imperfections. The substrates used range from wood, to vinyl, to glass and other materials, including existing architecture. The materials may include house paint, spray paint, duct tape, markers, and lettering stencils. The geographical areas sampled included urban and rural areas on the outskirts of mid-size Southern cities including Knoxville, Sevierville, and Johnson City, Tennessee, and Hattiesburg, Mississippi.

ANALYSIS AND CONCLUSIONS

The authors reviewed all images in the contexts of "production and reception," assumptions of our own interpretation, and the "sociocultural" context of the images.²¹ This required us to reference learnings from our autoethnographic process including both our contexts of reception (i.e., our own race, gender, socioeconomic status, and urbanicity) and what we could deduce regarding cultural contexts of production (i.e., urbanicity, and some inferences regarding size of business and income). In the coding process, we reviewed each image and made field notes containing our thoughts on what we were observing. We separately noted our observations on signage aspects such as materiality, methods of construction, color, font styles, location/signage placement, etc., and then coded and classified images considering this context. We then discussed our findings together, aligning on possible themes, connections, and meanings. In this way, we identified three common themes.

As with all good applications of grounded theory methods, we followed where the data led us in analysis despite the initial hypotheses we brought to the table. In this process, the theme of authenticity appeared, as expected in our hypotheses, but we also found two additional, prominent themes: radical resourcefulness, which eclipsed the hypothesized sustainability theme, and amateur aesthetic, which elevates the amateur to expert. Each of these themes is discussed below with associated examples. It should also be noted that many of the images displayed concurrent themes but were selected as clear examples of a predominant one.

Theme One: Radical Resourcefulness

These signs displayed radical resource fulness, providing a dramatic shift in which materials are renewed, reused, and given a prolonged life by the maker, bringing an artifact to the extremes of usage. This theme partially supported hypothesis one regarding sustainability, as this sustainable approach lies in stark contrast to the disposable nature of much mass-produced signage, but also pushes *far beyond* mere sustainability.

In Figure 3, a previously printed banner is now customized with new information. This type of signage is meant for temporary use, but these banners have a lifespan far longer than the relevance of the information they convey. Rather than replace the sign, the sign maker updated it with materials most democratic— Sharpie markers, tape, and paint—to meet changing communication needs. The revision retains the portion of the original message that is still relevant while saving on material use. Additionally, the back of the banner is still blank and preserves its potential for additional messaging in the future.

Figure 4 exemplifies the small business owner's extension of the lifespan of their plastic letter board signage by replacing missing letters using paper cutouts and lamination. The lettering was clearly legible, and from the distance of the roadside, appeared to match the scale and design of the existing letters.

Each of these signs illustrates the kinds of innovative, exigent design decisions non-professional sign makers



Figure 3 / Reconfiguring a previously printed commercial banner to display updated messaging. (Image provided by author.)



Figure 4 / Extending the lifespan of their formed plastic letter signage by creating temporary lettering. (Images provided by author.)



Figure 5 / Reuse of a more permanent wood substrate material for a temporary sign. (Images provided by author.)



Figure 6 / Existing architecture as communication beyond a simple manufactured sign. (Images provided by author.)

execute in the field. When we think of signage materials it is typically in three categories: temporal (cardboard, poster board, paper, tape, markers), semi-permanent (vinyl, spray paint, corrugated plastic), and permanent (wood, brick, metal). Many times, however, the resourceful amateur will go against these "rules" and use a temporary material for a permanent sign or a permanent material for temporary messages, as shown in Figure 5. Professional designers have many opportunities to appreciate and learn from this smart and sustainable approach.

Theme Two: Authenticity and Humanity

This theme supported hypothesis two regarding authenticity and humanity. Each artist or designer brings their personal life experiences into the creation of a new artifact. When the artist's hand is present in production, there is evidence of their own humanity that cannot be easily replicated in machine fabrication. The resultant authenticity and humanity in handmade signs contributes to their ultimate affect. (See Figure 6.) "[N]on-corporate, non-designed vernacular" displays a "visual slang that is invented, not taught," resulting in work that has an "unfiltered, emotional directness".²²

In addition to humanity, handmade signs reveal compelling narrative. A viewer can trace when decisions were made and perceive the evidence revealing how, as circumstances shifted, the intervening human hand reconfigured the original design. In the examples in Figure 7, one can discern clearly the marks of interventions when times, locations, or products for sale may have changed over time.

Theme Three: Amateur Aesthetic

This was a discovered theme which was not predicted in our initial hypotheses. Non-professionally manufactured signs exemplify visual communication problem solving without the influence or intervention of a trained designer. All of the signs are intended to serve a direct need of the



Figure 7 / Human intervention in the original signage reflecting changing circumstances. (Images provided by author.)



Figure 8 / Reuse of non-traditional, but highly relevant signage materials. (Images provided by author.)

business, i.e., the communication of information about goods and services offered at the location. The signs use smart, attention-getting color palettes, direct language, and, at times, the actual goods for sale to achieve this primary goal. Choices about materials were purely functional, without visual consistency, but they handily met the businesses' communication needs nonetheless. Though these examples may not have the stylistic sophistication that a trained designer would feel comfortable with, their techniques and materials are certainly valuable objects of study and inspiration.

Judged strictly from a craftsmanship perspective, the signs would not be awarded design recognition according to industry standards. Even so, as Beegan and Atkinson²³ suggest, "amateurs develop ways of working and aesthetics that are outside those approved by the experts and in doing so, they can act as models for a revised professional practice." Moving beyond considering the visual charm—or offense—resulting from amateur aesthetics and creative processes, we have found diverse learning opportunities in the study of these artifacts. Keeping in view Lupton's discourse on high and low design,²⁴ we stress the utility of breaking boundaries to illuminate the educational uses of design sources. We are also guided by Cubitt's similar discussion of the opportunity to learn from the "Amateur Aesthetic," a term applied to untrained "designers" who will "transform every material, to show respect through manipulating and changing what comes to hand, seizing a technology, a technique, a shape or melody or image and making it anew."²⁵

In Figure 8, we see how the business owner has taken advantage of the raw materials available and creatively repurposed the product itself as the actual signage for the business. The reuse of old materials (which would likely not be resold) is doubly clever, as it also directly communicates the product available for purchase. In addition, the signage is easy to maintain and draws attention based on both its size and the surprising use of the product. Such imaginative use of stock in trade tap into the business owner's experience, and it is something an outside designer might not consider at all.

LIMITATIONS/CONSIDERATIONS/AREAS FOR FUTURE RESEARCH

This study utilized a convenience sample of 112 photographs of signage from 2013 to 2018 from two regions in the Southeastern United States. Though the geographical area for analysis was limited, the authors feel these results are at least somewhat generalizable to the category of mom and pop small business signage. The inclusion of examples from both rural and urban areas were included to increase generalizability. However, a broader geographic and cultural view could provide greater insight into this area of design.

This study is also qualitative in nature, using methods of both autoethnography and VGTM as a combined approach to analysis. It is important to note that critics of autoethnography as a methodological approach have asserted it is not empirical in nature. We feel, however, that though autoethnography does not have the same capacities and benefits as quantitative methods, it is essential to frame our understanding of the data we analyze within the contextual environments of our individual and shared experiences as authors. Both authors were raised in blue collar homes, where values of hard work, entrepreneurship, and creative problem solving were honored, and frequently required, by the exigencies of life. This is but one factor which may affect how we see the world over time and also analyze data, including the significance we have given to the signage analyzed in this study. We thus believe that it is important to both acknowledge and reflectively analyze our experiences. Though the authors feel that both methods used in this study are appropriate considering our research goals, our results are not generalizable to all small businesses.

Related to the process of reflexivity in autoethnography is the way our analysis applied VGTM and autoethnographic methods to many of the authors' own photographs. In the composition of the photographic images themselves, we chose to highlight aspects of the images that other viewers might not emphasize. Each of the hallmarks of our photos-presenting signage comprising the full space of the shot, portraying colors in their full vibrancy, and ensuring the high definition of the images themselves-accords respect to its subject, a commitment in part influenced by the authors' own heritage and intended to acknowledge the work that goes into the creation of such signage. This may be perceived as bias, but through reflexive discourse we can understand and defend the reasons for our decisions and articulate why we believe they are important to analysis.

In this stage of research, we focused on the content itself—the "mom and pop" signage. We did not, however, complete a conversation with those who actually created the signs. It would be beneficial to more thoroughly understand their motivations for sign creation, rationales for decision-making, and perceptions of the finished products, including perceptions of effectiveness. For example, being white, middle-class women, we do not claim to have a deep understanding of black-owned small businesses and associated cultural influences on the creation of their signage. The influence of demographic and cultural factors and how signage may differ accordingly is something we wish to investigate in future stages of our work.

Additionally, it would be helpful to understand how these small businesses are (or are not) making the leap into digital marketing. How do they determine whether or not to have an online brand presence, and how does this connect (or not connect) to their onpremise signage? How does the size and revenue of their business also influence this decision (i.e., do we see a theme of "radical resourcefulness" appearing repeatedly in the digital space?) Again, the authors are planning future stages of this research to more thoroughly investigate these research questions.

DISCUSSION/RECOMMENDATIONS FOR TEACHING AND SERVICE

While acknowledging limitations and noting the need for future study, the authors aver that the findings of the present study indicate teaching and service opportunities that may be immediately considered and implemented. From an ethnographic perspective, we can use mom and pop signs (readily available in both urban and rural areas) to educate our students about the principles of radical resourcefulness, authenticity, humanity, and amateur aesthetic. One such assignment might include a "scavenger hunt" asking students to embark on a mission to photograph and then analyze and discuss at least five local mom and pop businesses' signs.

Considering service possibilities brought to light by our study, we have found that small businesses are typically very open to partnership opportunities and welcome the benefits of student and faculty subject area expertise. Thus, student teams could be created to evolve signage in collaboration



Figure 9 / Bringing "Radical Resourcefulness" into the classroom. (Images provided by author.)

with small business owners in ways that adhere to the principles of radical resourcefulness, authenticity, humanity, and amateur aesthetic. Teams would work to create standardized signage that builds on the business's current aesthetic approach and reaches out to customers in innovative ways, but still maintains a commitment to the core brand identity of the business. In this spirit of co-creation, the non-designer business owner acts as the "designer," while the student-designer becomes the translator.²⁶

Using the classroom as a lab, one author tested such a collaborative approach by partnering with the campus Department of Sustainability, addressing the design problem, "How can we raise awareness of eating local food in a campus that is a sea of printed propaganda?" The students designed a carnival-type event that coincided with the campus farmers' market. Communicating the department's culture and purposefully pursuing its goals of sustainability and education, the students' work repurposed available materials in the spirit of radical resourcefulness and authenticity. Instead of the hardware store, the students went to campus surplus and found materials they could deconstruct and repurpose.

They also collected remnant paints and used them to mix a custom palette. (See Figure 9.)

This farmers' market drew more crowds, and ones who lingered longer, than such events in previous semesters. Because the students designed each project item to fold and store flat, the Department of Sustainability easily reused the pieces for other occasions. The success of this event-increasing visitor participation and satisfaction while deftly applying the core principles of sustainable design-illuminates rich possibilities of collaboration between design students and mom and pop businesses. Students develop design skills, but perhaps more importantly, they also learn to articulate and activate their commitments to an ethos of sustainability in their work. At the same time, financially constrained small businesses reap the material benefits of innovative sustainable design, employing radical resourcefulness to capitalize on the value of their own repurposed materials and building upon the authenticity, humanity, and amateur aesthetic in which they are already well versed. Thus, business owners may leverage the innovations brought by student translators to magnify the power of their signage, increasing business to attain their ultimate objective—sustainable prosperity.

FOOTNOTES

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