



Typography, Placemaking and Signs

A Four-Part SFI White Paper Series

Written By Craig Berger



Part II

Environmental Typography Best Practices



Other Resources:

Four-Part Typography White Paper Series.

Download the other parts to this Typography White Paper Series.

www.signs.org/EducationEvents/WhitePapers.aspx

Typography Webinar Series.

Visit the page below to view a calendar of the webinars we currently offer.

www.signs.org/EducationEvents/ISASignAcademy.aspx

“As a designer, you have to think in time and see things in sequence. You have to see information as a narrative form”

Paul Mijknsaar

Sponsored by:



The Signage Foundation is a not-for-profit committed to expanding the knowledge base on the use and benefits of signage products through peer-reviewed research to facilitate the operation within the marketplace by manufacturers, suppliers and individuals in their efforts to design, build and sell innovative products. For more information, visit thesignagefoundation.org



Architectural signage solutions for ADA and Wayfinding signage helping people navigate their environment. Dixie Graphics is a solution source for designers and fabricators, offering material and sign choice. We also offer project completions from project management to installation accessorizing. Our goal is to streamline the manufacturing process for you. dixiegraphics.com



Nova Polymers is the global leader in the development of materials and processing equipment for the fabrication of Accessible and ADA compliant signage. With a focus on education and the continued development of innovative materials that meet international accessibility guidelines, Nova continues to lead the sign industry and help people with visual disabilities navigate the built environment. novapolymers.com



Swell Media Group is a branding and marketing solutions provider focused on lead generation and content creation. We build brands, websites and engaging marketing campaigns by working closely with you to understand your business and your clients. swellmediagroup.com

© 2014 All Contents Copyright Signage Foundation, Inc. All Rights Reserved.



Typography is everywhere in our daily life. We read publications in different formats, from paper to computer screens to mobile media.

We also see hundreds of signs each day: menu boards, directories, directionals and street signs. Unlike the material we read in print or on a computer screen – which we can focus on – signs must compete with many other distractions, all while we are moving. To successfully carry a message that resonates, typography must be successful on its own but also integrate into a complete and effective overall design.

Detection, Discrimination, Identity and Orientation

Cognitive research (the study of learning, reasoning, problem solving and decision making) explores how we use visual graphics to understand the world around us. This learning process is often divided into four areas that can relate to the design of all elements including type:

DETECTION: When you first **see** a sign in the environment.

DISCRIMINATION: When you first **differentiate** the sign from other similar elements in the environment.

IDENTITY (also called Comprehension and Recognition): When you first **understand** the message on the sign.

ORIENTATION: When you **learn** how the message and sign fits into a system of similar messages and signs.

These four cognitive approaches define the study of environmental typography and each must be taken into account in the design process. Large type may be easier to spot, but more difficult to read than smaller type that is better located and designed. Type that easily can be understood as part of a larger system barely needs to be read at all before comprehension. This is good news for environmental graphic designers. They have a varied palette to improve legibility beyond typographic manipulation including sign scale, dimensionality, lighting, iconography and movement. It also means that best practices in typography must move beyond the design of type itself. It must incorporate the complete design of the sign and the system of which it is part.

Vehicular Wayfinding, Typography and Best Practices

Most of the research on effective typography in the environment has been in the area of vehicular signs. Legibility in this setting is often a matter of life and death at 65 miles per hour. Phil Garvey of the Thomas D. Larson Pennsylvania Transportation Institute has worked on dozens of legibility research programs in the roadway environment. While focused mainly on typography, the research has shown that stylistic changes and adjustments are only a small element that affects overall legibility. Understanding which issues are most impactful to overall legibility can allow for much greater design flexibility.



A sign first needs to be detected, then seen as a sign against the clutter of other elements in the environment, before the message can be read.

“Research and codes only inform design, not determine it”

Phil Garvey, Thomas D. Larson, Pennsylvania Transportation Institute

Large Legibility Impact

Negative Space: Of all the factors that impact legibility, far-and-away negative space (the space surrounding letters, words and messages) has the greatest impact on legibility. Greater negative space increases the chance of detection and discrimination, making comprehension much easier.

Letter Height: For road signs, endless research has been enshrined in the Federal Highway Administration's guidelines for letter heights. Reading height is measured in time x speed with about 35 feet for every inch of letter height. This usually means that letter heights can get pretty big. Four inches minimum for a car going 25 miles per hour and 12 inches or more on the highway.

Open Counterforms: The introduction of reflective vinyl and lighting to signs has made letters so bright that the counterforms (space inside of letters) shrink, particularly for older drivers. Thinner stroke widths and more open counters mitigate this issue, which was first designed and tested with the Clearview typeface by Donald Meeker and James Montalbano. This typeface has been replacing Highway Gothic on signs around the country, and similar thin stroke fonts are being used for a range of interior and exterior signs that need to be read both day and night.

Smaller Legibility Impact

Positive and Negative: Research has shown that dark letters on a light background are easier to read than light letters on a dark

background, often as much as 30%. The problem is that research also shows that sign panels on a light background are more difficult to find in the daytime. **The verdict:** It depends on the situation.

Upper-Case/Lower-Case: Research developed by the California Highway Commission and the British Transport Authority in the 1950s and 1960s showed that upper-case and lower-case type was about 10-15% more effective than just upper case. It took the Federal Highway Administration another 40 years to catch on to this fact. (Sign painters also were a little nervous about the extra complexity). Upper case is perfectly fine for a title or if slightly bigger type is used.

Serif versus San Serif: It has been known for decades that serif type is more legible than san serif type, but the difference is not always very large, particularly if the typeface is well designed. Organizations like the National Park Service have been using a simple serif font for years (NPS Rawlinson). On the other hand, cursive and idiosyncratic fonts (not just Comic Sans) should be avoided in most cases.

Typography, Brands and The Legible Building

In the 1950s and 1960s there was an explosion in typography used in branding. From McDonalds® to Macys® to A&P® to Mobil®, type dominated urban branding. (Though the golden arches set off a trend in iconography). Interestingly nearly all these script and ornate type approaches worked much better because of the buildings they were attached to: modern



*Typography research by Thomas D. Larson, Pennsylvania State University, Pennsylvania Transportation Institute
Legibility Research using a test track*

**“Research and codes only inform
design, not determine it”**

Phil Garvey, Thomas D. Larson, Pennsylvania Transportation Institute

Bauhaus style buildings with white glass and white walls. When streetscape clutter rose and building style became more ornate, typography became less effective. In the end, clean light-colored buildings (lit up like a Christmas tree at night) with dark type have the most resonance. As mentioned from the legibility research, background and contrast play the biggest role in legibility. Conquer that and type selection can be much more flexible.

Lighting and Typography

Externally lit signs cover a greater area which makes detection much easier, and there is a consistency across the background making the sign more readable than backlit or internally lit channel letters. Of course there are the downsides of extra energy costs and lighting pollution, as well as the clutter of hundreds of little buildings competing for attention.

Channel letters, neon letters and backlit signs are much less legible than externally lit signs, but they can be beautiful, compact and easy to control. Typography for channel letters generally should have much wider letter spacing and very simple fonts. In addition, the more dimensional, the simpler and wider spaced they need to be.

That leaves the much maligned (by town councils) internally lit sign box. This medium combines the best of both worlds. They are efficient and cast a consistent glow. Since the low light evening environment is perfect for a light colored background, these signs showcase the much more effective dark letter/light background practice.

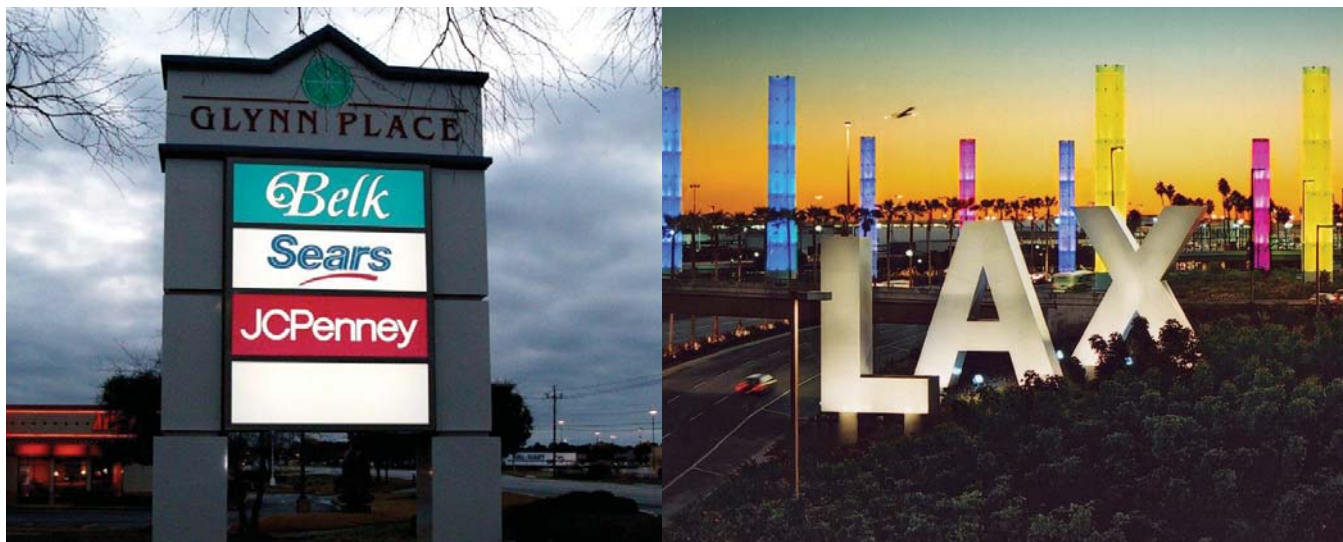
Tactility and Typography

When the Americans with Disabilities Act was introduced in 1993, it brought an entirely new set of issues and dilemmas to the design of typography: the often-contradictory needs of the blind and the visually impaired. The blind care nothing of color contrast, require a narrow range of letter heights, can only read capital letters and need the information to appear in very specific locations. The visually impaired and pretty much every person who navigates visually, require high color contrast and large letter sizes.

There is very little in common between the type needs of people who read through touch and people who read through sight, though both benefit from simplicity. Those who rely on tactile fonts require them to be simple sans serif and spaced adequately between letters and words. The same attributes benefit those with visual impairment. When used, these can serve both communities in most cases, reducing clutter in the environment and meeting universal design standards.

Typography and Wayfinding

We have discussed best practices in type for detection, discrimination and identification; but one area is perhaps the most important: orientation or how typography can be used as a tool for understanding our environment. Typography can be used for an endless variety of wayfinding tasks from addresses for streets,



*Internally lit signs are not loved, but they are highly effective and efficient.
Lighting an entire environment still provides the most support for legible type.*



*Roger Whitehouse testing tactile signs for
the Research by Lighthouse for the Blind,
Arlene R. Gordon Research Institute*

transport lines and buildings to directional messaging. Type is the most flexible of tools for wayfinding, but it has one major drawback.

Humans are creatures of habit. The objects we see every day become ingrained in our memory and can become tools for understanding our environment. So the stop signs or restroom symbols we see every day become ingrained in our memory. We barely need to see them before we understand their function. For most wayfinding functions that use typography, however, we have fewer opportunities to learn things quickly. We are often viewing a navigation system for the first time.

Consistency is the all-encompassing attribute for good typographic design in wayfinding. That not only means using the same typeface, but also size, letter spacing, character spacing, position, location, luminescence and a dozen other factors. While consistency sounds simple on the surface, it is very difficult and requires constant review and diligence in practice. For example, try maintaining the same type height, width, letter spacing and position for thousands of street signs in a city. There is always an impulse to squeeze the type for a long name or change the position because of special circumstances, but even the smallest changes began to degrade our ability to understand the environment. We stop knowing where to look for the information and eventually stop looking.

Dynamic Legibility

The last frontier of legibility is movement and it has proven to be among the most highly

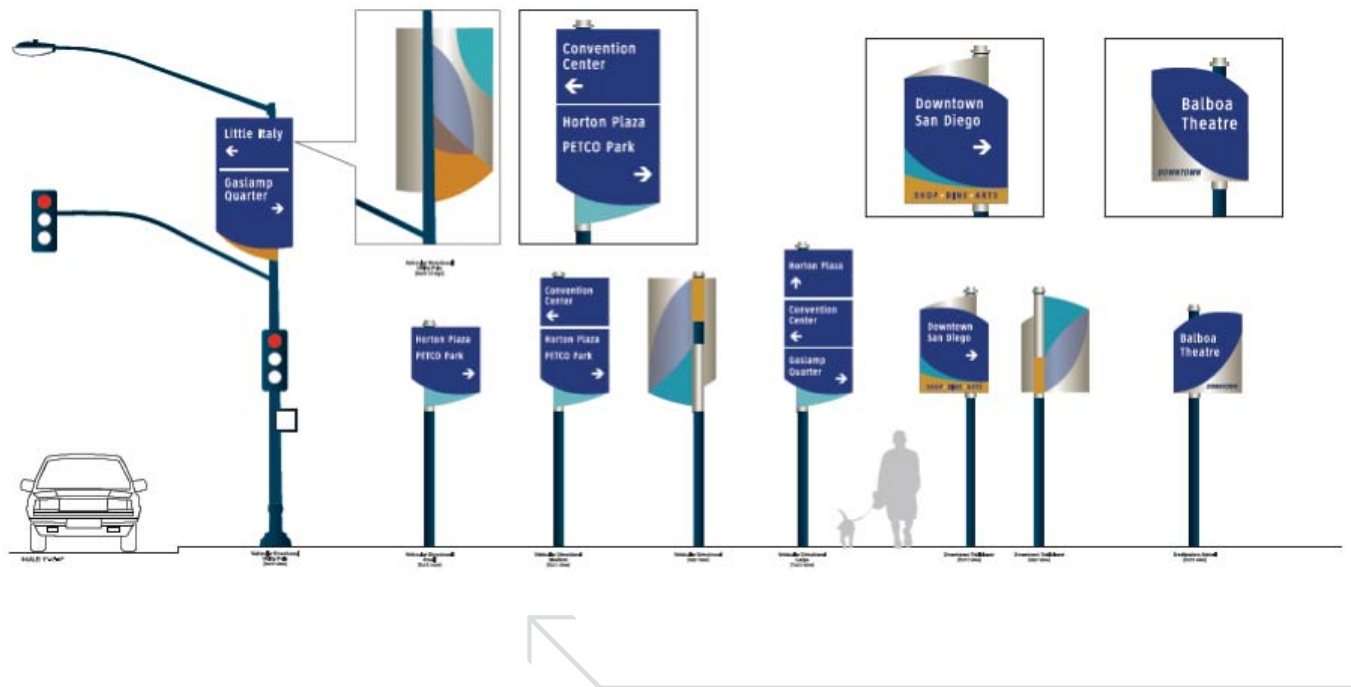
effective. Studies by the retail research firm Envirosell have shown that changing menu boards increase detection as much as 30% with commensurate sales increases. Designing effective type and messaging for movement has been around for at least 60 years and many of those lessons are still used today. The top three approaches include:

Scrolling: Messages that move slowly and consistently are the most legible. The eye is attracted to the movement and can easily track the message. Scrolling billboards have been effectively employed in Times Square since World War II and are still the most ubiquitous form of dynamic messaging today.

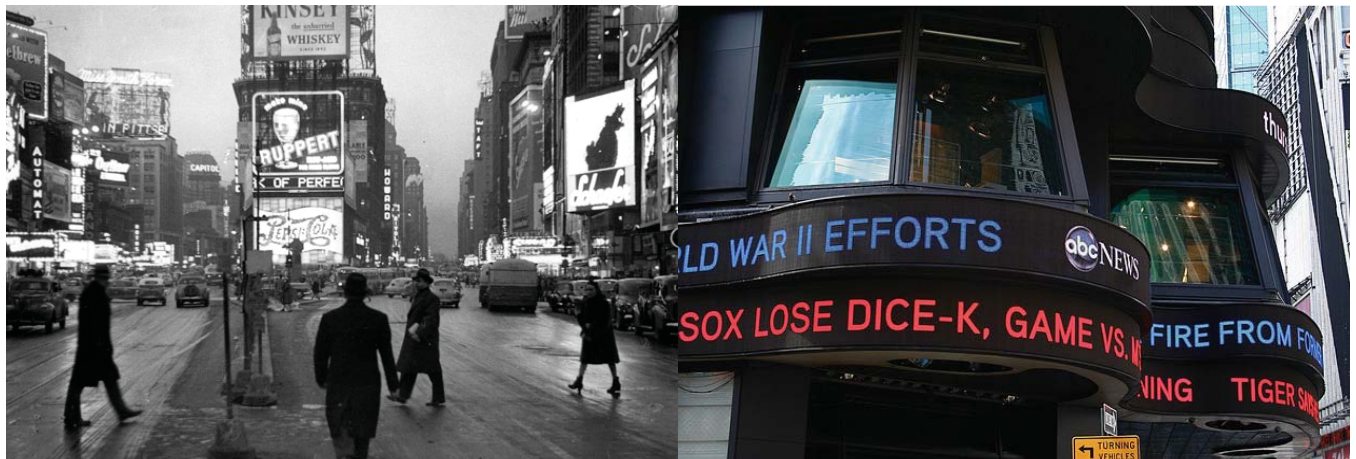
Flipping and Fading: Why are old fashioned train station message boards still used? Because not only does the sound serve as a detection approach, the slow changing of letters both attracts attention and makes the type more familiar.

Flashing: With straightforward messages, just a simple flashing on and off attracts attention while maintaining a memory of the message even when it is not there.

The summaries and recommendations provided in this chapter give a fairly clear idea of good practices when using typography in different environmental conditions. In the end, though with all the research and case studies we have at our disposal, designers still have a multitude of options when developing effective information in the environment. The key is to use our accumulated knowledge as a guide, and not let it rule the design process. ↓



Typography in wayfinding must be cohesive and completely consistent to be effective. City of San Diego by MERJE



Marquee and ticker signs have advanced over 60 years, but their application and legibility issues are still remarkably similar.

Great Books and Research on Typography and Signage

City Signs and Lights, **Stephen Carr**

This book dates from 1973 but is still a great overview of legibility best practices in the environment.

Lighting for Driving: Roads, Vehicles, Signs and Signals, **Peter R. Boyce**

A comprehensive overview of evening legibility on the roadway.

Media Facades, **Mathias Hank Haeusler**

Terminology, approaches and practices for media facades.

Pennsylvania Transportation Institute Legibility Research

Thomas D. Larson, Pennsylvania State University

Dozens of research reports on legibility available through the Institute and sponsoring institutions.
(<http://www.pti.psu.edu/index.php>)

Research by Lighthouse for the Blind, **Arlene R. Gordon Research Institute**

This research focuses on the development of visual cues for the blind and includes tactile signage and wayfinding.

(<http://www.lighthouse.org/research>)

Why We Buy and Call of the Mall, **Paco Underhill**

Envirosell will not let you in on their high end legibility research, but they will provide some recommendations on legibility in the retail environment.

**“Inevitably, but not always, what works
best for people with disabilities works
better for everybody.”**

Roger Whitehouse in Communication Arts Magazine