# LIBRARY SIGNAGE AND WAYFINDING DESIGN

*Communicating Effectively with Your Users*

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# PREFACE

## My Fascination with Street Signs

**SINCE I WAS A CHILD, I WAS ALWAYS OBSESSED WITH STREET SIGNS AND** maps. In each city I visited, the first item I picked up was a map so I could get acquainted with my whereabouts. I have always been spatially aware of my surroundings, and I have remained curious by exploring new cities by foot.

I grew up in Côte Saint-Luc, one of the many cities on the island of Montreal, in Quebec, the only French province in Canada. The island of Montreal has sixteen separate cities and towns. One of these is the city of Montreal, which itself has nineteen neighborhoods. Each of these municipalities have their own unique identity and local culture. The entire island of Montreal has its own public transit system that serves all the cities on the island.

Are you confused yet? I was. As a child who grew up speaking English, I had to learn how to navigate the city and the province, which is 80 percent French speaking. I was a curious kid who loved to explore the city on public transit. I started taking the local city bus at ten years old (it was the 1980s). I remember taking the bus to my elementary school, one city away, and feeling I was on an adventure. I was proud of myself for traveling to school alone. On my twenty-minute bus ride, I distinctly remember how the street signs changed in color, shape, and design. Along the bus route, the different street names informed me that I was moving from one city to another. Street signs not only identified the streets but symbolized each city's identity and place on the map. They also conveyed a deeper meaning, sometimes presenting political or social values. One such example was the renaming of Dorchester Street in Montreal. Rene Levesque, the premier of Quebec and founder of Le Parti Quebecois political party, died on November 1, 1987. The city of Montreal (not the island) decided to rename Dorchester Street to Boulevard Rene Levesque in his honor that same year (Fraser 1988). However, that street also passes through the city of Westmount, a mostly English-speaking community. To this day, the small portion

of the street that runs through Westmount retains the name Dorchester Street. There are many more instances in Montreal where English street names have been renamed for important French-Canadian leaders.

In 1977, the province of Quebec enacted the Charter of the French Language, also known as Bill 101. This language law states that French is the official language of the province and that all written communications must be displayed in French first, with the French text double the size of the English text. This law applies to all aspects of social life, including the menus in restaurants, medical forms, signage, and advertisements (Kelly 2014). Transnational companies such as Kentucky Fried Chicken must follow the law; in the US, it is commonly branded as KFC, but in Quebec it is identified as "Poulet Frit Kentucky," shortened to PFK (Gade 2003). My parents both grew up in Montreal (pre–Bill 101), and they lived on streets with English street signs. Now those street names and signs are in French, although older generations still refer to them by their original English street names.

My fascination with street signs continued when I moved to Toronto in 2001. Toronto is the largest city in Canada, and before 1998, it was composed of six smaller cities: Etobicoke, Scarborough, York, East York, North York, and *old* Toronto. The cities merged in 1998 to form the "Toronto" *megacity*, but many years went by before the street signs began to show any visual consistency between the previously separate cities. During those years, I could easily identify the original city name based on their architecture and their street signs. Authors have cited 140 distinct neighborhoods in Toronto that prominently display branded street signage, funded by each Business Improvement Association (BIA; Bradburn 2014; City of Toronto 2020). Even the Toronto Public Library system reveals the city's histories. While the cities also merged their library systems, some branches still had signage referring back to their original home city. I worked at the Rexdale branch of the Toronto Public Library in 2002, but the signage still identified it as Etobicoke Public Libraries.

Since 2008, I have been living in New York City, and I have grown to appreciate its consistent street sign design. I live in the borough of Manhattan, where streets are organized into a grid. East-numbered streets are east of Fifth Avenue and west-numbered streets are west of Fifth Avenue. Fifth Avenue is the dividing line for most of the island. Street signs divide the city, providing directions and the approximate location of each residential or commercial building. For example, an address of 250 East 14th Street is approximately two and a half blocks east of Fifth Avenue, for each block represents 100 "address" numbers. Street signs and addresses also provide meaning to tourists and residents and mark the invisible borders between neighborhoods.[1]

Signs can provide deep levels of meaning and be playful at the same time: In 2016, when singer Prince passed away, New Yorkers redecorated Prince Street subway station in honor of his memory (Meier 2016). Recently, the station identification signage for the New York City subway was altered to commemorate singer Aretha Franklin and US Supreme Court Justice Ruth Bader Ginsburg after their deaths. Franklin Street subway stations (in the boroughs of Manhattan and Brooklyn) had *respect* decals added to their station identification signage to pay tribute to Franklin's life (Marcus, 2018), and the 50th Street station was recently renamed "Ruth Street" in honor of Ruth Bader Ginsburg.[2]

Signs are tools for meaning-making that direct people in how to understand phenomena. To serve this purpose, they should be clear, concise, easily understood, and intuitive. From a user experience (UX) perspective, they should be usable, useful, attractive, and purposeful. From an accessibility perspective, they should be compliant with the Americans with Disabilities Act (ADA), legible, and placed strategically. As one author says, it is better to have no signs than bad signs (White 2010). Signs aid the wayfinding experience, identify spaces, promote services and resources, inform policy, and may lessen anxiety and confusion.

In libraries, signs can decrease directional reference questions. However, too many signs can contribute to *visual noise*—sensory overload that can cause confusion, anxiety, worry, or apathy (Torbati 2016). Finally, bad signage does not serve its purpose, for it is often ignored, meaning that it does not convey its intended message to users. This book offers best practices, guidelines, ideas, and the necessary planning tools so that you can design and create more effective signage.

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## NOTES

1. It should be noted that neighborhood borders are always changing in New York City, and street names and signs are usually the first identifiers of these neighborhood borders. Neighborhood names have changed over the years and some of them are even invented by realtors (Smith 2016).
2. It is likely that this is not a permanent name change but a temporary signal of respect, conveyed by public signage (Cook 2020).

# INTRODUCTION

## Why Is Signage Important?

**WE LIVE IN A SOCIETY THAT IS SATURATED WITH VISUALS: ADVERTISING,** television, film, visual arts, the World Wide Web, and social media. Signs are part of this visual landscape. They are a series of stimuli, and the reaction they provoke should fulfill the sign's purpose. They provide assistance in wayfinding and help people navigate through physical spaces. They should give users a sense of confidence; signs may serve as inferential cues, and poorly designed signs may reflect poorly on the organization. Signage is thus one of the most important components of marketing communications. Signs need not be text-heavy to be effective, for as a visual medium they can convey a compelling message with a few words and an attractive image.

All signs should attract attention, be welcoming, useful, friendly, and most importantly, informative. Signs communicate messages and enable users to navigate, learn, and make decisions. An environment without signs may cause confusion, anxiety, and worry. Signs bring life to any airport, highway, shopping mall, sports complex, college campus, bus terminal, train station, office building, and library. They provide identification, evoke policies and procedures, promote, advertise, and provide directions.

Signs are particularly important in the library, for the library building is a space where users go to learn. They may visit the facility to borrow materials, study, read, or conduct research. Upon entering the building, users must make decisions about where and how to accomplish the purpose for their visit. Signage can help reduce library anxiety and create a more positive user experience. However, too many signs can produce information overload, causing anxiety and confusion.

Kellaris and Machleit (2016) propose a conceptual framework for signage, with five elements:

- signage design
- user personality traits
- contextual variables such as placement
- mediating processes
- response variables (cognitive, affective, and behavioral)

*Signage design* should follow current best practices in information design. *User personality traits* that may affect signage include the user's age, their familiarity with the space, their internal state, their motivational state, and their level of attention. *Contextual variables* include how the sign is placed: the distance, angle or perspective and its relationship to its surroundings. *Mediating processes* are the intended users' ability to process and/or understand the sign, which may affect the sign's color, font, and other design features. The *response variables* include users' thoughts, emotions, and concrete actions.

Signage falls into the broader practice of information design—the study of how to present information effectively. The concept of information design originated shortly after the print revolution: during the American revolution. William Playfair invented different types of graphs and charts on political and economic topics; Florence Nightingale invented different statistical graphs for public policy purposes; and Michael George Muhall and Otto Neurath developed pictorial statistics (Horn 1999).

While information design is largely considered to be the province of graphic designers, it's also important to multiple other professions, such as web designers, librarians, architects, museum curators, urban planners, UX designers, user interface designers, writers of instruction manuals, and computer programmers. Many materials require good information design, such as maps, infographics, diagrams, charts, data tables, indexes, and controlled vocabulary lists.

In libraries, signage with good information design is particularly crucial because services and resources must be identified and promoted to different user groups. Library signs have many functions, but for the purposes of this book, they will be divided into three broad categories: promotional, policy, and wayfinding signage. Signage serves many other functions, such as informational, instructional, and identification.

## Terms Used in This Book (in Alphabetical Order)

### *A/B Testing*

A/B testing is usually associated with UX for websites. This involves showing participants two slight variations (of a design) and asking them questions about its content and design and comparing the results. This can directly be applied to both print and digital signage (Schmidt and Etches 2014).

### *Aspect Ratio*

The aspect ratio describes the relationship of an image's width and height. For example, a 16:9 aspect ratio is an image that is sized at 16 units width and 9 units in height. This typically corresponds to a resolution of 1,920 by 1,080 for a high definition (HD) widescreen monitor (Clem 2018).

### *Branding*

Branding is the organization's visual identity. It represents the spirit of the organization. It extends beyond the logo and symbols and is closely tied to the organization's story or narrative. It is the sum of all the feelings associated with the organization. Branding is not tangible, as it relates to the uniqueness, values, and strengths of the organization. Other terms related to branding include brand loyalty, brand strength, and brand awareness. In this book, branding needs to be considered when designing and updating new library signage.

### *Built Environment*

The built environment is any manufactured structure that is to be used for any human activity. Built environments are usually in urban centers and include train stations, airports, office buildings, municipal buildings, college campuses, shopping malls, hospitals, parks, subway stations, bus terminals, museums, community centers, and libraries (Harris 2010).

### *Color Contrast*

Color contrast is the difference in brightness between the colors in the foreground and background. For signage to be ADA compliant, there needs to be at least 70 percent contrast (United States Department of Justice 2010). Contrast can also be applied to typeface or font size.

### *Communications*

Communications relates to how organizations share meaning with their users. It can be achieved through print, digital images, web content, radio, telephone,

television, and on social media. Signage is one of many communication channels where information gets disseminated. Kotler (1982, 355) describes the communication process as two-way, with a sender and receiver. Communication involves eight parts:

1. sender conveys a message
2. message is sent and encoded by the recipient
3. message itself is the verbal, written, or nonverbal symbols
4. message is sent through different communication channels (or path)
5. message is decoded through a process by which the receiver understands and processes the message
6. message is received
7. reactions of those who have received the message(s)
8. receiver's response to the message(s)

### *Content Management System (CMS)*

A CMS is a robust software program used to coordinate the dissemination of flow of information using a backend database. Most large websites use a CMS to organize and manage their individual web pages. A CMS is used to separate content from design. Common CMSs include Drupal, Joomla, and WordPress. Although CMSs are usually associated with website management, they can be used to manage digital signage. Drupal, for example, is used to manage both the website and network of digital signage for the MTA New York City Transit System (Madison 2019).

### *Copy*

The term *copy* refers to the text that is used for marketing and advertising purposes. Copy is the written material that is used to spread a specific marketing message. In the context of this book, copy is the signage message, which is the text used that accompanies the image.

### *Decision Points (or Nodes, Touch Points, or Bump Points)*

Throughout the literature of signage, wayfinding, and UX design, the terms *touch points*, *bump points, nodes*, or *decision points* are used synonymously. For the purposes of this book, decision points will be used. In wayfinding research, it relates to a point where a user must make a decision. This is usually found at intersections in the built environment. In UX research, the term *touch point* is used to describe any element of the system which the user comes into contact. It represents the pathway that the user makes during their journey in your organization. They are important for both UX and wayfinding research because they

relate to how users navigate through virtual and physical spaces and the decisions they make (Brugnoli 2009).

### *Digital Signage*

Digital signage uses different technology, such as LCD, LED, plasma, projection, and e-paper, to display digital images, video, audio, text, and web content on a screen. It is often associated with out-of-home (OOH) advertising. Digital signage can either be static or dynamic. Static digital signage refers to static images or text. Dynamic digital signage examples include scrolling images, social media feeds, video, animation, or interactive content (Lafitte 2019).

### *Dots Per Inch (DPI)*

DPI refers to the number of printed dots contained within one inch of an image printed by a printer. It differs from pixels per inch (PPI). DPI is used to determine the print size of an image on paper. PPI is used to determine the quality of a digital image on screen (Sony Support 2019).

### *Dwell Time*

This is the amount of time that users pay attention to signage. Measurement tools such as eye trackers estimate that the average person glances at a sign for 0.7–0.9 seconds (Condomaros 2019).

### *Endcap (or Endcap Displays)*

In merchandising, endcap displays are the print and digital signage screens at the end of the aisle or hallway or corridor. They are used to promote and highlight specific products in a retail setting and to grab a customer's attention (Gilbert 2019).

### *Focus Groups*

Focus groups are a qualitative research method that comprise a small group of participants who provide an open-ended dialogue on the subject matter. This type of research technique provides the most rich and robust data but is the most time consuming and costly (Schmidt and Etches 2014).

### *High Definition (HD)*

Harding (2020) describes HD as any screen with a resolution of 720p (1,280 by 720 pixels) or more. Standard definition (SD) has a resolution of 640 by 480 pixels; 1,920 by 1,080 pixels are known as full high definition (FHD); 2,560 by 1,440 is 2K; and 3,840 by 2,160 pixels is 4K (or Ultra HD).

### *Kerning*

Kerning is the space between the letters. Spacing your letters too closely will make the copy very hard to read. If the spaces between the letters are too far apart, they will look like two separate words. Most design programs have automated kerning, but a signage designer may opt to manually kern the letters. If a particular word does not look right, it is recommended to turn the word upside down to examine the spacing between the letters. Always kern in chunks of three, which is easier than tackling an entire line of text (Dennis 2017).

### *Leading*

Leading is the vertical spacing between lines of text. Also known as line spacing, the recommend leading at 20 percent of the font size is the recommended practice (Dennis 2017).

### *Marketing Message*

The marketing *message* is the intended communications to that target audience. For the purposes of this book, the message is the unified communication that is informed by a library's marketing plan and signage policy. Kotler (1982, 361) describes the message by managing to get attention, hold interest, arouse desire, and obtain action, known as the AIDA model.

### *Market Research*

Market research describes the different types of research techniques that can be utilized to study your target audience. For the purposes of clarity, it is synonymous with user research. In this book, many different user research techniques will be discussed and shown how they can be applied to signage and wayfinding. Some are specific to the discipline of UX design and some are broader in nature.

### *Persona*

Personas come from UX research and they represent a profile of a fictional individual who is a member of a specific user community. A persona is an archetype of a target user of a product or service. Personas are similar to segments (see definition of *segmentation* below), but they differ slightly. They are fictionalized profiles of individuals with specific characteristics, whereas segments are user groups who share common characteristics, values, and beliefs. Some conflate the terms *personas* and *segments*, but Harley (2015) argues that personas are more personal, individualized, and specific than segments.

### *Pixels*

Pike (2017) explains that *pixel* comes from "picture element." She states that they are the dots that build an image. The more pixels there are in a given space and

the closer they are, the clearer the image. If the pixels are large and spaced apart, then the image is said to be pixelated, which means the pixels are visible to the naked eye. Pixelated images tend to look blurry.

### *Pixels Per Inch (PPI)*

PPI refers to the number of pixels contained within one inch of an image displayed on a computer monitor (Pike 2017; Sony Support 2019).

### *Resolution*

Rusen (2019) states that resolution is the number of pixels per unit of area, rather than the total number of pixels. It usually describes the number of pixels arranged horizontally and vertically on a monitor. The common name (4K, 5K, etc.) is associated with the horizontal display resolution size. Table 0.1 provides a list of the resolution names and screen sizes.

**TABLE 0.1**
**Common resolution names and their resolutions**

| Common Name | Resolution |
|---|---|
| 5K | 5,120 × 2,880 |
| Ultrahigh definition (UHD) or 4K | 3,840 × 2,160 |
| Quad high definition (QHD) | 2,560 × 1,440 |
| 2K | 2,048 × 1,080 |
| Widescreen ultraextended graphics array (WUXGA) | 1,920 × 1,200 |
| Full high definition (Full HD) | 1,920 × 1,080 |
| High definition (HD) | 1,280 × 720 |

### *Segmentation*

Segmentation describes how marketers group their audience into smaller groups based on similarities, whether those similarities are demographic or based on needs, desires, or expectations. A similar term that describes the grouping of different users is *personas*. Segmentation is directly related to how library employees develop marketing activities that are aimed to a specific target audience (Yeo 2005).

### *Sign versus Signage*

Brown (1995) writes that signage is the system (or network) of many signs which

work together in tandem. A signage system is one that is consistent in colors, shapes, sizes, and messages. Where a sign stands alone with a single message, signage is a system that is affected by lighting, the building interiors, stairways, hallways, entrances, and exits.

### *Signage Audit*

A signage audit is an evaluative method used to take an inventory of your signage for analysis, reflection, and improvement. An audit may involve taking an inventory of the current signs, classifying the signs into categories, evaluating its current message, visual appeal, physical condition, and placement. An audit may involve the complete removal and replacement of all signs.

### *Signage Policy*

A signage policy is an official document with a system of principles and rules that inform the design, content, placement, and maintenance of signage. A signage policy is more formalized, while guidelines are recommendations.

### *Tactile Signage*

Tactile signage is any sign system that can be read by touch. Examples of tactile signage may include Braille, raised print, and raised symbols. Doors and openings that lead to public spaces should be identified by tactile signage (United States Department of Justice 2010).

### *Tracking*

While kerning is the spacing between the individual letterforms, tracking uniformly adjusts the spacing over a range of characters. Both kerning and tracking are in graphic design to provide a more aesthetically pleasing arrangement in the layout of the copy (Mapp 2014).

### *Typeface*

Typeface is the overall design of a collection of fonts. It is the overall aesthetic and includes the unified look for all of the lettering, numbers, and symbols of that font family. Typeface is to parent as font is to child. A typeface informs the overall style of the font. Each typeface has a family of fonts that differ in qualities (some fonts are bold, italics, or condensed). For Roman typefaces, the two main types are serif and sans serif typefaces. Serif types have edges at the end of most of its letters. Sans serif typefaces have no edge strokes at the tips of the font. Serif types are typically used for large bodies of text (i.e., books) and sans serif types is used for large-scale signs, posters, brochures, and web-based materials (Keung 2020).

### *Typography*

Typography is the design, arrangement, and display of different typefaces to make written language readable and attractive. Typography encompasses the concepts of typefaces, type classification, and type styles. They relate to more specific elements such as fonts, characters, numbers, color, size, punctuation, borders, and figures. Typography differs from calligraphy because one focuses on mass production (of texts) and the other relates to single, handwritten copies (Craig 2008; Redish 2012).

### *User Experience (UX) Design*

UX design is a collection of principles and practices used when designing physical and virtual spaces. It represents the emotional feelings and perceptions when a user interacts and engages in a physical or virtual interface. Although UX design is often associated with websites, it can be applied to physical spaces. It involves different types of user research that investigate all facets of the physical and virtual spaces. UX design merges usability with user-centered empathy to create physical and virtual spaces that are usable, useful, and desirable (Schmidt and Etches 2014).

### *Viewing Distance*

Viewing distance is the optimal distance between the user and the display. There is much disagreement in a standardized formula determining the optimal viewing distance between a user and a sign. Factors such as the text height (point font), the size of the display screen, and the display resolution influence the ideal viewing distance.

### *Wayfinding*

Wayfinding refers to how people navigate their way around physical space. Wayfinding is cross disciplinary as it relates to graphic design, architecture, cognitive psychology, and environmental studies. It is experiential in nature and it comprises the sociocultural and emotional experience of navigating a physical space in urban centers (Symonds, Brown, and Lo Iacono 2017). It is the ability to know where you are, where you are headed, the best route to take, know when you have arrived, and know how to exit (Apelt, Crawford, and Hogan 2007).

## How to Navigate This Book

Chapter 1 provides a brief history of signage and wayfinding by connecting signs to advertising and modern publishing, as well as typography and graphic design. This chapter also provides a brief overview of Saussure's and Peirce's

semiotic theories of signs, defining the term *sign* and differentiating it from signals and symbols.

Chapter 2 illustrates signage research techniques and methods used to gather library users' perceptions, feelings, and attitudes toward signage.

Chapter 3 lays out how to undertake a signage audit and provides examples of signage "before" and "after" examples of an audit.

Chapter 4 provides an overview of digital signage, digital signage hardware (displays, media players), content management software that controls signage content, and the different design software used to create digital signs. It also includes a brief discussion of digital signage companies, a select list of signage hardware and software companies, and examples of digital signage partnerships between publicly funded organizations and private corporations.

Chapter 5 provides best practice signage guidelines and examples of library signage policies.

Chapter 6 describes guidelines in developing library signage that is ADA compliant.

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