

Optimization Strategies for Chinese-English Mixed Typography in Urban Spaces Based on User Reading Experience

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doi:10.56397/AS.2024.08.08

Abstract

This paper examines the current state and optimization strategies of Chinese-English mixed typography in urban spaces. It highlights that the current mixed typography of Chinese and English in urban spaces presents numerous issues, with improper integration adversely affecting the transmission of information and the user's reading experience. Through case analysis, this paper proposes strategies such as the rational selection of fonts and layout, consideration of cultural differences and environmental adaptability, and the use of technological integration and innovative applications. These strategies aim to enhance the user's reading experience, foster international exchange of urban culture, and promote innovative development in the field of design.

Keywords: Chinese-English mixed typography, urban spaces, user reading experience, optimization strategies

1. Introduction

In today's globalized world, the process of urbanization is accelerating, and urban spaces have become the forefront of multicultural exchanges. Chinese-English mixed typography, as a part of urban visual culture, is ubiquitous in media such as wayfinding systems, public signs, billboards, and menus. With the increasing frequency of international exchanges, non-native English speakers and native English speakers coexist in urban spaces, making the effectiveness of Chinese-English mixed typography directly related to the accurate transmission of information and the international image of the city. However, based on the author's observation, unreasonable Chinese-English mixed typography is common in China's metropolises, not only leading to information misunderstandings but also affecting the city's image, and causing a poor reading experience for residents and tourists in the city.

This paper will attempt to explore the current state and issues of Chinese-English mixed typography from the perspective of enhancing the user's reading experience. It will integrate knowledge from multiple disciplines such as design, psychology, and linguistics to propose optimization strategies for Chinese-English mixed typography in urban spaces. The aim is to help enhance the city's cultural soft power and promote international exchanges.

2. User Reading Experience in Typography Design

User reading experience is a multidimensional concept that encompasses the reader's perception, emotions, cognition, and behavioral responses during the reading process. In the context of Chinese-English mixed typography, the reading experience begins with visual perception, triggering the reader's emotional response, and they together influence the reader's level of cognition and behavioral effects regarding the reading material. Specifically, when readers encounter information in Chinese-English typography, they first perceive the visual elements such as font, color, and layout. According to Gestalt principles, they discern the relationships of proximity, dominance, and subordination among visual elements, determine the path and duration of their gaze on different pieces of information, and in the process, form impressions of visual harmony or disharmony, which

are fed back to the brain, causing feelings of pleasure, comfort, or discomfort. The brain then processes the received information for understanding, memory, learning, etc., ultimately judging the speed, depth, and duration needed for reading the information and making corresponding behaviors. These dimensions are interrelated and together constitute a complete reading experience.

In recent years, user experience has become an important topic in the field of design, emphasizing a user-centered design philosophy (Maurício Elias Klafke Dick & Maíra Woloszyn, 2023). In typesetting design, designers need to start from the user's perspective and consider the reading habits and preferences of users from different cultural backgrounds. Studies have shown that reasonable typesetting not only improves the efficiency of information transmission but also enhances the pleasure of reading. It is evident that the user reading experience in typesetting design is mainly reflected in two aspects: readability and aesthetics. A good typesetting design should first ensure that the text is easy to read, maintaining clear fonts, appropriate line spacing, and paragraph spacing for both Chinese and English. Secondly, while conveying information, a good typesetting should also provide visual enjoyment. Chinese-English mixed typography should consider the harmonious combination of fonts, the aesthetic of the overall layout, and adaptation to the environment. In addition, it is necessary to consider the reading habits and aesthetic preferences of users from different cultural backgrounds to enhance the universal appeal of the design.

3. Issues in the Application of Chinese-English Mixed Typography in Urban Spaces

3.1 Application Scenarios of Chinese-English Mixed Typography

Chinese-English mixed typography is applied in various scenarios (Shi Mingyu, 2022). Depending on the medium of display, it can be categorized into print media, online media, and urban spaces. In print media, Chinese-English mixed typography is primarily used in academic journals, English language teaching materials, and commercial documents of multinational corporations. In online media, it is mainly found in bilingual news broadcasts and English learning sharing platforms. In urban spaces, Chinese-English mixed typography is commonly seen in wayfinding systems, public signs, commercial advertisements, and promotional slogans. This paper will focus on a detailed analysis of Chinese-English mixed typography in urban spaces.

Different media in urban spaces pose different requirements for Chinese-English mixed typography. For instance, wayfinding systems and public signs, in order to facilitate effective communication of information, often emphasize the need to maintain accuracy, standardization, and consistency. In contrast, commercial advertisements and promotional slogans, aiming to attract audiences from different cultural backgrounds, place greater emphasis on visual appeal and creative expression.

3.2 Identification of Problems in Existing Chinese-English Mixed Typography Design in Urban Spaces

Chinese-English mixed typography is widely applied in various media within the urban spaces of Chinese cities. Given that the majority of the audience for these mixed typographic messages are Chinese nationals, and Chinese is the official language in China with a primary status, the current designs typically place Chinese text above English text and in a larger font size. This typographic arrangement aligns with design principles, creating clear information hierarchy, facilitating quick capture of key content by readers, and respecting the culturally dominant status of Chinese people as the primary audience.

However, there are still several issues with the existing designs. The author examined the signs carrying Chinese and English texts on the metro system in a metropolis city in China, and hereby classifies the major problems as follows with image examples:

Font Discordance: Some fonts are not harmonious, with mismatched styles between Chinese and English fonts, leading to visual disharmony (as shown in Figure 1, the English font is inappropriately chosen, with uneven letter spacing that appears messy and casual).



Figure 1. Signs on the metro train windows (photo taken by the author)

Irregular Layout: Some layouts are not well-organized, lacking consideration for the smoothness of reading, with weird word spacing or leading (line spacing) typically leading to visual jumps and distraction during reading (as shown in Figure 2, the spaces before and after the Chinese and English punctuation marks are unusually noticeable, coupled with the lack of a space in the English words “not jump” which is written as “notjump”, all of which can distract the reader).



Figure 2. Signs on the metro train platform (photo taken by the author)

Neglect of Cultural Differences: Some designs fail to fully consider the reading habits and aesthetic preferences of readers from different cultural backgrounds (as shown in Figure 3, the Chinese information reads “Transfer to Line 6,” which conforms to the reading habits of Chinese readers, while the English reads “Transfer 6 Line,” different from “Transfer to Line 6” as said in English announcements, indicating a lack of consideration for English readers’ habits).



Figure 3. Signs at a hallway close to the metro exit (photo taken by the author)

These issues not only affect the reading experience but may also have a negative impact on the effectiveness of information transmission.

4. Strategies for Optimizing Chinese-English Mixed Typography Design Based on User Reading Experience

4.1 Font Selection and Layout Arrangement

Designers need to fully utilize font selection and layout arrangement to achieve visual balance and guide the reading sequence, thereby realizing effective visual communication and a pleasant reading experience. The first step in optimizing the user reading experience is to ensure the rationality of font selection. There is a significant difference in form between Chinese and English fonts, with the square shape of Chinese characters and the linear shape of English letters creating a natural visual conflict, thus the choice of font directly affects the comfort and readability of reading. In existing Chinese-English mixed typography designs, designers often choose fonts based on intuition and experience (Dian Li, 2023), and commonly use fonts that can support both languages. While this is convenient in terms of font usage, the font design is often not refined enough to ensure visual coordination between the two languages. It is advisable to consider selecting fonts that are both clear and recognizable in terms of stroke clarity and recognition, to reduce the visual burden on readers. In addition, the styles of Chinese and English fonts should be consistent and harmonious with each other to avoid visual conflicts and reduce discomfort during reading.

In addition to the font itself, the proportional relationships formed by font weight, font size, color, character spacing, line spacing, and other factors all impact reading speed and comprehension. At this point, layout

arrangement becomes another key factor affecting the reading experience. A well-designed layout can guide the reader's line of sight and improve reading efficiency. Designers should adjust the font size and line spacing according to the reading habits of the target audience to enhance the readability of the text; while maintaining overall coordination, appropriately use different font styles to distinguish different information to enhance the sense of hierarchy; and evaluate the readability of different fonts in different sizes and backgrounds through user testing.

When mixing Chinese and English typography, it is particularly important to pay attention to the design elements such as font size, spacing, and alignment of the two languages. For example, English typically uses left alignment, while Chinese is accustomed to center alignment or justified alignment. During the design process, it is necessary to highlight key information through means such as font size, color, and bolding to form a clear visual hierarchy; use a grid system to organize content, ensuring the alignment and even distribution of text; make rational use of white space to balance the visual weight of the two languages, avoiding overly crowded pages; adjust the number of columns and margins according to the type and length of the content to improve reading comfort; and consider the reader's line of sight, follow Gestalt principles to ensure that the arrangement of elements not only conforms to aesthetic principles but also guides the reader's attention, making the reading process natural and smooth.

4.2 Cultural Differences and Environmental Adaptability

It is crucial to take into account cultural differences and environmental adaptability in the design process. The design should not only cater to the aesthetic preferences and reading habits of the local audience but also be accessible and appealing to international visitors. This involves understanding the cultural nuances that influence how information is perceived and interpreted. For example, the use of color, imagery, and spatial arrangement can vary significantly between cultures. Designers should aim to create a balance that respects local cultural identity while also being inclusive and welcoming to diverse audiences.

For instance, Chinese is typically read from left to right, as is English. However, in certain contexts, such as in urban wayfinding systems, some signs or slogans may use vertical Chinese characters, which can be challenging for English (Yinghui Zhang, 2024). Chinese fonts need to consider the thickness of strokes and the balance of structure, with characters generally being more compact than English characters. Their layout tends to use more white space to create a sense of balance and tranquility; whereas English fonts focus more on the shape of the letters and the distribution of space, with layouts often being more compact and information-dense to ensure the harmony of the overall design. Designers need to find an appropriate spatial balance in the mixed typography of the two languages.

The diversity and complexity of urban spaces also present many challenges for the design of Chinese-English mixed typography. The typography must be adapted to the specific environment. For example, in historical and cultural sites, the design of text needs to respect the historical and cultural value of the place and blend in with the environment as much as possible; the design of text in parks and leisure areas also needs to coexist harmoniously with the environment, reducing the visual impact on the natural environment; the design of store signs needs to attract customers' attention on busy streets; street art and murals often have a strong visual impact, contrasting with the surrounding urban environment; in addition, traffic signs, outdoor billboards, etc., need to be clearly visible from a distance and quickly recognizable in high-speed movement (Jiuxiao Zhu, Zhenghu Cui, Zhen Yang, Qijun Wang, Yu Tian & Duming Wang, 2024); digital signs need to adapt to different viewing angles and lighting conditions. Designers need to analyze user needs based on the specific environment, consider the user's reading experience, and choose appropriate fonts for proper layout and arrangement. When designing the layout of bilingual Chinese and English texts, if the text layout is difficult to adapt to the specific environment, designers may need to negotiate with clients to creatively adjust the translation to ensure that the information is accurately conveyed while effectively enhancing the user's reading experience (Xuechuan He, 2019).

4.3 Technological Integration and Innovative Applications

The convergence of various technologies has opened up numerous opportunities for the innovative application of mixed Chinese and English typography. This is particularly evident in the urban landscape, where digital media and interactive billboards are becoming increasingly ubiquitous. These platforms, which serve as the canvas for multilingual content, can greatly benefit from the implementation of responsive design techniques. This approach ensures that the typography remains visually appealing and coherent across a wide array of devices and screen sizes, thereby enhancing user reading experience with better readability and accessibility.

By incorporating responsive design, designers can dynamically adjust the layout, font size, and spacing of the text to suit the dimensions of the display. This not only improves the aesthetic appeal but also ensures that the content is easily digestible by the viewer, regardless of the device they are using. For instance, on a smartphone, the text might be condensed, and the layout simplified to fit the smaller screen, whereas on a larger tablet or

digital billboard, the text could be spread out with more elaborate design elements.

Interactive digital media platforms present an additional layer of complexity and opportunity. By integrating dynamic effects that allow the typography to change in real-time, designers can create a more engaging and interactive experience for the user. This could involve elements such as text that reflows as the user scrolls, or interactive elements that change the typeface or layout based on user input.

Besides, it is expected that in the near future the integration of advanced technologies like artificial intelligence (AI), augmented reality (AR), and virtual reality (VR) can take the user experience to a whole new level. AI algorithms can be used to analyze the content and automatically adjust the typography to optimize readability and visual appeal. AR and VR technologies can provide immersive environments where the typography is not just static text but an integral part of the virtual world, enhancing the storytelling and engagement.

The integration of technology into the field of Chinese-English mixed typography is not just about making the text look good; it's about creating a seamless, engaging, and immersive experience for the user. By leveraging the power of responsive design, interactive elements, and cutting-edge technologies like AI, AR, and VR, designers can push the boundaries of what is possible in the realm of mixed Chinese and English typography, ultimately enhancing the way information is communicated and consumed in the digital age.

5. Conclusion

In the context of globalization, the design of mixed Chinese and English typography in urban spaces has become increasingly significant. This article, through a systematic study of the theoretical foundations and influencing factors of mixed Chinese and English typography, proposes a series of optimization strategies for the design of mixed Chinese and English typography in urban spaces. The aim is to enhance the reading experience of users and promote international exchange of urban culture.

Firstly, font selection and layout design are key to optimizing mixed Chinese and English typography. Designers need to choose fonts that are easy to read and stylistically harmonious, and adjust the font size, line spacing, and layout appropriately to improve the readability and aesthetics of the text. Secondly, cultural differences and environmental adaptability are also factors that cannot be overlooked in design. Designers should fully consider the reading habits and aesthetic preferences of users from different cultural backgrounds, ensuring that the layout design is in harmony with the urban environment. Lastly, the integration and innovative application of technology bring new possibilities to mixed Chinese and English typography. The application of responsive design, artificial intelligence, and other technologies can enhance the interactivity and adaptability of the layout design, providing users with a more immersive reading experience.

By focusing on these strategies, designers can create typography that is not only visually appealing but also culturally sensitive and technologically advanced. This approach will help to bridge the gap between different cultures and facilitate better communication and understanding in the globalized world. The ultimate goal is to create urban environments that are welcoming, accessible, and reflective of the diverse communities they serve. Through thoughtful design, we can foster a sense of unity and belonging, making cities more vibrant and dynamic places to live, work, and interact.

The research presented in this article not only provides theoretical support and practical guidance for the design of mixed Chinese and English typography but also offers valuable insights for the diversification and internationalization of urban culture. We hope that this research will inspire more designers and scholars to pay attention to and think about cross-cultural design, and together promote innovation in the field of design. This will contribute to the construction of a harmonious, inclusive international urban space.

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