



Monochrome Printing and Trademark Design in Modern China: Visual Representation and Communication Mechanisms in the “Invincible” (Wudi) Tooth Powder Trademark

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Abstract. In the 1920s and 1930s, monochrome printing became a widely used mode of commercial image reproduction in modern China because it was inexpensive, efficient, and adaptable across media. Under these conditions, trademark design faced a basic problem: how to maintain recognizability when color information was reduced and visual hierarchy became less distinct. Taking the “Invincible” (Wudi) tooth powder trademark produced by the Household Industry Society as a case study, this paper examines the visual constraints of monochrome printing, including tonal compression and competition for attention in newspaper space. It identifies three common image-processing strategies in modern Chinese printing practice—outline definition, black-and-white organization, and texture control—and analyzes how they were integrated into trademark design through the strengthening of the identification center, the simplification of decorative structure, and the improvement of reproduction stability. The study argues that monochrome printing did not simply reduce visual form, but reorganized it into a recognition-oriented system characterized by structural clarity, tonal hierarchy, and reproducible stability, thereby anticipating later tendencies toward standardized brand identification.

Keywords: monochrome printing, trademark design, modern China, media adaptation.

1 Introduction

Modern Western printing technologies were introduced into China in the mid-nineteenth century and gradually entered commercial use. By the 1920s–1930s, with the growth of national industries and intensifying market competition, trademarks had developed from simple product markers into visual media that combined identification, communication, and brand building⁶. Printing technologies expanded trademark circulation and made large-scale reproduction increasingly possible³. Against this background, monochrome printing became a practical and widely used method of

commercial reproduction⁵. For local enterprises, it offered fast, low-cost, large-scale printing and strongly influenced the visual logic of modern trademark design.

Previous studies have mainly discussed printing technology from the broader perspectives of printing history and commercial art history. Recent research has also examined the institutional organization of Shanghai commercial art and design, showing how design became increasingly connected to advertising, packaging, and brand communication². However, the specific ways in which printing conditions shaped trademark form and visual communication remain insufficiently explored. This is especially true for the interaction between printing constraints, newspaper page conditions, and trademark recognizability.

The “Invincible” trademark was selected as the main case study for two reasons, the trademark is shown in Fig.1. First, both its color packaging version and its monochrome advertising version survive, making direct visual comparison possible. Second, it belonged to the core brand system of the Household Industry Society, one of the most successful domestic manufacturers of cosmetics and daily-use goods in modern China. The transformation from color packaging to monochrome advertisement reveals a clear shift toward recognizability, black-and-white contrast, and reproduction stability. Based on this case, this paper asks three questions: (1) What visual constraints did monochrome printing impose in modern commercial communication? (2) How did these constraints shape strategies of visual adaptation in trademark design? (3) How did the “Invincible” trademark maintain recognizability under monochrome conditions?



Fig. 1. Color Packaging of the “Invincible” (Wudi) Tooth Powder Trademark

2 Constraints of Monochrome Printing in Modern China

Monochrome printing was one of the earliest Western mechanical printing methods to be widely used in China. Compared with color overprinting, it required no complex color separation or repeated registration, which made production faster and cheaper. It therefore became common in modern commercial communication, especially in newspapers⁸. Its low cost, broad circulation, and rapid reproduction made it highly suitable for large-scale trademark dissemination⁴.

At the same time, monochrome printing imposed clear visual constraints on trademark design. First, when color designs were translated into monochrome printing, identity cues based on color had to be compressed into limited black-and-white tonal values. Reproduction quality was also affected by the properties of printing ink, an important component of modern printing industrialization in China⁷. Second, when different colors were converted into similar levels of brightness, the boundaries between foreground and background, core motifs and decorative elements, and text and ornament could easily become blurred. This problem was especially serious in newspaper advertisements, where dense surrounding information directly affected recognition efficiency. Third, without chromatic variation, monochrome images often appeared flatter and less engaging.

Under these conditions, trademark design had to reorganize its visual structure, especially in terms of compositional hierarchy, contour definition, and black-and-white relationships. These adjustments provided an important basis for the visual transformation of modern trademarks under monochrome printing⁹.

In newspaper advertising, trademarks did not appear alone but within crowded layouts of text and competing advertisements. As Fig.2-4 illustrates, monochrome printing diminished not only color but also immediate visual distinction. For readers scanning the page quickly, trademarks had to attract attention at first glance. Therefore, stronger contours, clearer black-and-white contrast, and simpler peripheral ornament were not only technical adjustments, but also practical ways of securing visibility in newspaper space.



Fig. 2. Newspaper advertisements in *Shenbao* (1930s).



Fig. 3. Newspaper advertisements in *Xinwenbao* (1920s).

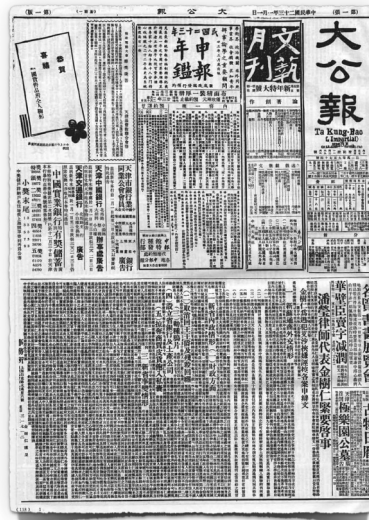


Fig. 4. Newspaper advertisements in *Dagongbao* (1930s).

3 Typical Image-Processing Strategies in Monochrome Printing

To adapt color originals into monochrome reproduction, practitioners in modern China gradually developed a relatively stable set of image-processing strategies through long-term practice, as shown in Fig.5. Although these methods were not created specifically for trademark design, they were widely applicable to printed images more

generally. Based on modern Chinese printing manuals, especially *Yiwen Printing Monthly*¹⁰, as well as other technical publications and visual examples, three strategies may be summarized as especially important.

First, outline definition provided a basic means of preserving recognizability. Without color differentiation, clearly defined outlines became essential for separating forms and clarifying object boundaries, especially in small-scale or repeated printing.

Second, black-and-white organization established visual hierarchy. Once color was removed, light and dark tonal blocks had to take over the work of distinguishing foreground from background and major elements from secondary ones. In this way, black-and-white contrast created a clearer visual order.

Third, texture control enriches tonal variation. Dots, lines, grid, and other textures were used to increase distinction and detail, compensate for the loss of color, and improve clarity in reproduction. Texture also helped maintain greater consistency across repeated printings.

Taken together, outline definition, black-and-white organization, and texture control may be understood as a basic visual logic of monochrome image translation in modern Chinese printing practice. These strategies emerged from practical experience and provide a useful framework for understanding the visual transformation of trademarks under monochrome conditions.



1. Screen Dot
2. Straight Line
3. Grid
4. Herringbone Pattern
5. One of the Screen Dot Interlaced Patterns

Fig. 5. Typical Image-Processing Strategies in Monochrome Printing

4 Monochrome Adaptation of the “Invincible” Trademark

As a representative case of trademark adaptation across media, the “Invincible” trademark appeared in both color packaging and monochrome advertisements, as illustrated in the Fig.6. In its color version, the design was highly decorative: a central label formed the visual core, surrounded by butterflies, flowers, and foliage¹. Rich visual effects were produced through color contrasts and layered composition, in keeping with the decorative style of modern commercial packaging¹¹. When translated into monochrome printing, however, the design shifted toward recognizability and structural reorganization, and the differences between the two versions are demonstrated in the corresponding Fig.7.



Fig. 6. Monochrome Advertisement of the “Invincible” (Wudi) Tooth Powder

Strengthening of Identification Center. In the monochrome version, recognizability was reinforced through the consolidation of the central structure. The outer contour of the fan-shaped label was preserved and emphasized, maintaining a stable visual focal point. Key textual elements, including “Invincible” and “tooth powder,” were more tightly organized, with thicker strokes and adjusted spacing to accommodate small-scale reproduction and rapid reading. These modifications significantly improved legibility and identification.

Simplification of Decorative Structure. Decorative elements such as butterflies and floral motifs were simplified into clear outlines and black-and-white tonal blocks, reducing visual interference with the central label. The composition adopted a “bright center–dark periphery” arrangement, in which the central label emerged as the primary focal point while surrounding elements functioned as visual support. As a result, visual hierarchy was established through tonal contrast rather than color differentiation, producing a more stable and legible compositional order.

Optimization of Reproduction Stability. The monochrome version was further adjusted to meet the technical requirements of mechanical printing. Fine shading details in the background were replaced with uniform halftone patterns, improving consistency across reproductions. Text strokes were also thickened to compensate for limitations in printing precision. Through the control of texture and line quality, the image maintained clarity and stability across repeated printing and different media contexts. These adjustments may also have supported clearer trademark identification in circulation, in line with the company’s broader efforts in trademark protection mentioned in the introduction. Although this paper does not reconstruct that legal history in detail, monochrome simplification may be understood as serving both technical reproduction and stable trademark recognition.

Overall, the monochrome conversion of the “Invincible” trademark was not simply a reduction of color, but a systematic visual restructuring. Shaped by the constraints of printing technology and the demands of mass-media reproduction, this adaptation turned a decorative trademark into a more recognition-oriented design.

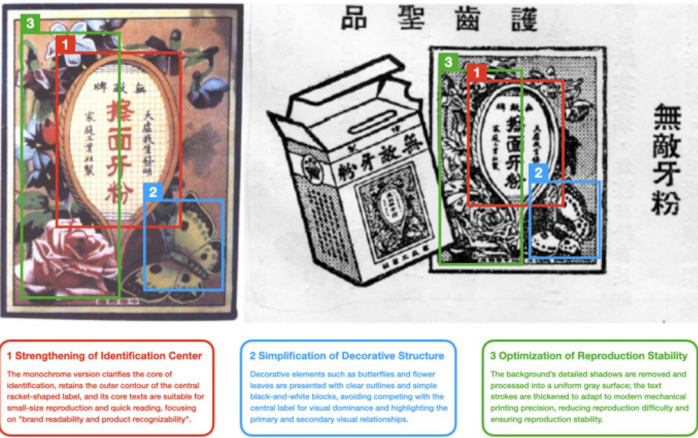


Fig. 7. Comparison of Color and Monochrome Advertisements for the “Invincible” (Wudi) Tooth Powder

5 Conclusion

In the 1920s–1930s, monochrome printing became an essential medium for trademark dissemination in modern China because of its low cost, efficiency, and broad applicability. Under these conditions, trademark design moved from decorative display toward a more recognition-oriented form of visual organization. This paper identifies three key strategies in modern Chinese monochrome printing practice—outline definition, black-and-white organization, and texture control—and shows how they were applied in the “Invincible” tooth powder trademark. More broadly, the visual principles shaped by monochrome printing—recognition priority, structural clarity, and reproducible stability—help explain how modern trademarks were adapted to mass reproduction and may also have anticipated later tendencies toward standardized brand identification.

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