A Case Study on Simplification Strategies of Logo Design from the Perspective of Gestalt Psychology

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Abstract

This paper delves into the application of Gestalt psychology principles in logo design. It analyzes how these principles refine design elements to bolster the efficiency and impact of visual communication. Drawing from Gestalt psychology perspectives, the theoretical foundations and application methods of logo design simplification strategies are discussed. Through the analysis of Gestalt psychology effects in various types and styles of logo designs, this study compares the applicability and differences of logo design simplification strategies under different cultural and social contexts. Furthermore, it evaluates their role and value in enhancing the innovativeness and communicative impact of logo designs. The findings suggest that strategies informed by Gestalt psychology significantly improve the organization rules within logo designs, such as the relationship between figure and ground, proximity, similarity, and continuity. Thereby they enhance perceptual clarity, cognitive load, and aesthetic satisfaction. Moreover, these strategies promote creative thinking and problem-solving abilities in logo design. The results indicate that simplified design methods not only enhance aesthetic appeal but also improve the adaptability and recognizability of logos across different media and environments. This approach aligns with the minimalist and flat design trends of today's information age, meeting the evolving needs and aesthetic preferences of consumers.

Keywords: Gestalt Psychology, Logo Design, Visual Design, Simplification Strategies, Visual Communication Efficiency

1. INTRODUCTION

In the modern era, logo design occupies a critical position within both commercial and cultural spheres. Logos are not merely symbols of brand recognition but also embodiments of corporate culture and image. Consequently, the innovation and communicative effectiveness of logo design are crucial for the advancement of the corporation. Logo design necessitates the rapid transmission of information in an ever-changing information environment, making design simplification a critical challenge for designers to address and overcome.

This study aims to explore the theoretical foundations and application methods of logo design simplification strategies. It focuses particularly on the application of Gestalt psychology principles in logo design. Additionally, it seeks to evaluate their role and value in enhancing design innovation and communication

effectiveness. Considering the critical role of logo design in both business and cultural fields, coupled with the evolving demands placed on design by advancements in information technology, simplification has become key to improving information transmission efficiency. Through the analysis of existing cases, this study intends to develop a systematic set of design simplification strategies to support efficient decision-making by designers.

In terms of theory, this research broadens the scope of Gestalt psychology within the realm of visual arts, augmenting its associated theoretical framework. In terms of practice, the findings will furnish designers with tangible tools and methodologies for streamlining design processes, thereby fostering innovation and amplifying logo design's communicative prowess. Furthermore, the influence of cultural and social backgrounds on logo design simplification strategies will be explored, offering theoretical support and practical guidance for cross-cultural design.

By conducting in-depth analysis and empirical research, this study aims to unveil fresh perspectives and insights within the logo design arena, offering substantial theoretical and practical contributions to elevate design quality and boost brand value.

2. THEORETICAL BACKGROUND

Logo design, as a critical means of visual communication, has increasingly embraced simplification in contemporary design practices. This review endeavors to investigate the application and influence of Gestalt theory, minimalist design style, cultural color significance, and the psychology of visual simplification in logo design through the analysis of related literature.

2.1 Unity of the Whole and Its Elements

Gestalt psychology, a school of thought in human perception and cognition, posits that human perception is based on wholes rather than parts. That is, individuals perceive organized, structured, and meaningful wholes instead of isolated elements. The most enduring influence of Gestalt psychology on art and design originates from Wertheimer's 1923 paper, Formalisms. Often humorously referred to as the Dot Paper, it primarily discusses how the combination of abstract dots and lines elucidates the processes of perception and cognition. Wertheimer highlighted that Gestalt structures reflect the proactive and creative nature of human perception. This enhances our innate ability to group similar elements (similarity grouping), close elements (proximity grouping), or elements with structural economy (good continuity) into categories. [4] This ability is inherent, not acquired, he said. It suggests that humans are influenced not only by sensory input but also by internal factors such as past experiences, impressions, and motivations. Gestalt psychology also uncovered the organization and constancy in human perception. Organization refers to the adherence of perception to certain rules or principles, such as proximity, similarity, continuity, and closure, which help simplify and categorize complex and variable visual information. Constancy refers to the stability and consistency of perception within certain limits, unaffected by changing external conditions, aiding individuals in adapting to different environments and contexts.

2.2 The Significance of Simplification Strategies

The simplification strategy in logo design represents a profound exploration of the brand's essence, showcasing the brand core by eliminating superfluous elements. This approach not only maintains the aesthetic characteristics and uniqueness of the logo but also enhances its adaptability and readability across various contexts and media. There it strengthens the communication and memorability of the brand's core values. Simplified design aids in the recognition and internationalization process of brands in the global market.

Amidst the swiftly changing currents of visual design, brands universally embrace simplification and flat design strategies This adaptation aligns with the rapid transformations in the visual design landscape and meets the exigencies of the information age. This fosters a more streamlined, recognizable brand image with greater visual expansibility. This trend not only aligns with minimalism and flat design styles but also opens broader avenues for future brand innovation and application.

The application of minimalism in design transcends the superficial concept of simplification, penetrating the core of user experience with a keen focus on users' actual needs and evolving aesthetic trends. This design philosophy embraces the principle of "less is more," reducing visual clutter to concentrate users' attention on the functionality and emotional expression of the brand. In today's era of accelerating societal progress and the quickening pace of life, minimalist design helps users make swift decisions in an information-saturated environment, finding true comfort and tranquility in simplification. Thus, achieving harmony between design and life. The adoption of simplification strategies is a thoughtful response by designers to the complexities of modern society, continuously pushing brands toward more humanized, functional, and aesthetic directions. As Jonathan emphasized, "Behind simplicity, there lies a deep exploration of complexity." It demands comprehensive thinking and precise choices from designers to ensure the depth and uniqueness of innovative designs.

2.3 Principles of Simplification Strategies

The principle that "the whole is greater than the sum of its parts" lies at the core of Gestalt psychology. This theory suggests that when observing visual elements, humans tend to integrate them into meaningful wholes rather than analyzing each part separately. This holistic perception, acquired through introspection and experience, aids in a more meaningful understanding of scattered pieces of information. Therefore, in the design process, emphasis should be placed on expressing the entirety, allowing people to more easily grasp and feel the conveyed message, rather than focusing solely on the details of parts. [6] The doctrine introduces several fundamental principles explaining how designers can construct a holistic perception of visual elements. These principles hold significant guidance value in the domain of logo design. When creating logos, consideration should be given to how the combination of visual components can form a perception of a meaningful whole for the target audience, thereby enhancing the communicative efficacy and aesthetic value of the design.

Table 1. Principles of Logo Design Simplification Strategies from a Gestalt Psychology Perspective

Principle Name	Principle Explanation	Purpose
Principle of Similarity	People tend to automatically integrate similar elements into a whole. Thus, logo design can enhance recognizability and unity through similarities in shape, color, size, etc. (Figure1, Figure2)	Achieve visual unity
Principle of Closure	Individuals tend to group objects with closed or semi-closed boundaries. Logo design can use closed or semi-closed forms to highlight themes and focal points	Enhance visual coherence and recognizability, effectively conveying the brand message and strengthening audience memory.
Figure-Ground Relationship Principle heading	People distinguish between the figure that emerges and the background that serves as a backdrop. Logo design can create interesting and layered effects through contrast or transformation, increasing the contrast between graphic elements and the background to make the subject more prominent, noticeable, and memorable.	Strengthen visual focus and enhance visual appeal
Principle of Continuity	This principle suggests that in design, the	Enhance visual integration and

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	relationship between elements in a logo should display coherence and consistency, creating a unified visual effect. Applying the principle of continuity can effectively enhance the logo's visual appeal, recognizability, and aesthetic value.	fluidity, improving comfort in reading and understanding
Principle of Simplifying Unnecessary Elements	In logo design, removing unnecessary elements makes the logo more concise and clearer, reducing visual load and cognitive difficulty.	Aim to create a concise, clear visual identity with memorable elements to reduce cognitive load and highlight core content
Principle of Emphasizing Key Elements	The logo design should highlight the main points by enhancing the form, color, size, etc., of key elements to emphasize the core meaning of the logo	Improve visual impact and memorability, strengthening message conveyance.
Principle of Contrast	The logo design should increase the contrast between graphic elements and the background, making the logo more prominent, noticeable, and memorable.	Enhance visual prominence and recognizability, thereby enhancing memory effects.
Color Principle	The color scheme of logo design should be distinct and clear, with adequate contrast between colors to increase recognizability	Enhance recognizability, promote brand identification and memory, and strengthen brand cultural relevance.
Principle of Proximity	Elements in logo design should be arranged and grouped according to their relationships and meanings, with reasonable distances and spacing between them, making the logo's information more compact and clearer.	Optimize information organization and presentation, enhancing the logo's clarity, coherence, and communication efficiency, while also strengthening the brand's unity and professionalism.
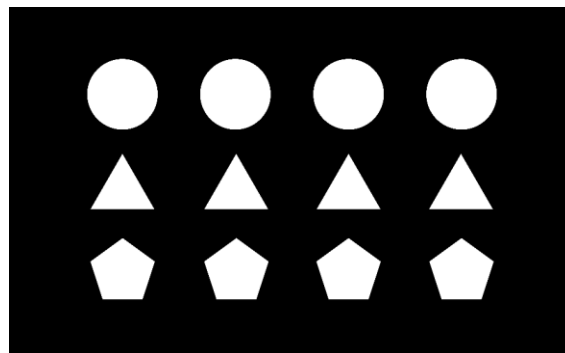
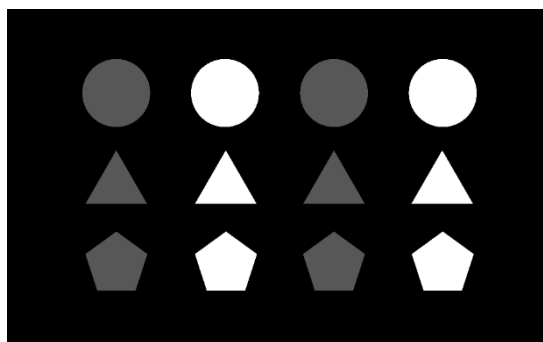**Figure 1. Differentiation of Shapes Under the Principle of Similarity**

Figure 2. Differentiation of Colors Under the Principle of Similarity
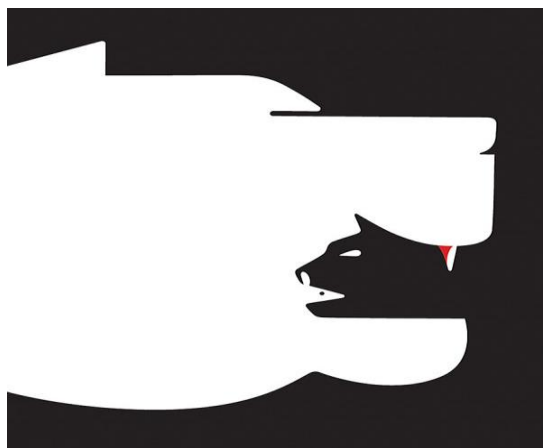

Figure 3. Design Based on the Principle of Figure-Ground Relationship

3. Case Analysis of Logo Design from the Perspective of Gestalt Psychology

3.1　Viewing the Olympic Rings Logo Design Through Gestalt Psychology

The Olympic Rings logo, designed by Pierre de Coubertin, one of the founders of the modern Olympic Games, was first publicly presented in 1914. It subsequently became the official logo of the International Olympic Committee (IOC) and has been widely used in the Olympics and related activities. The five rings represent the unity of the five continents, as well as the friendship and respect among athletes under the Olympic spirit.

Figure 4. The Olympic Rings

Comprising five colored rings, the Olympic Rings logo symbolizes the unity and friendship among the continents and nations. It ingeniously integrates several principles of Gestalt psychology, including the

principles of similarity, closure, continuity, and proximity, to create a simple yet powerful graphic that is instantly recognizable as the symbol of the Olympic Games. This logo design demonstrates high clarity, simplicity, symbolic meaning, and visual impact. By simplifying unnecessary elements and using only five interlocking rings devoid of any superfluous decoration, it ensures clarity and recognizability across various sizes and applications. Each ring employs vivid colors and contrasts to enhance key elements, increasing the logo's visibility and recognizability. Moreover, the colors are rich in symbolic meaning, representing global unity and diversity. The close connection between the rings utilizes the principle of proximity, strengthening the logo's sense of unity and symbolizing the international athletes' interaction and collaborative spirit at the Olympics. The analysis of the Olympic Rings through Gestalt psychology can be approached from the following perspective:

(1) Principle of Similarity: The five rings share similar shapes and sizes, differing only in color, which allows people to perceive them as a unified whole easily.

(2) Principle of Closure: Each ring forms a perfect circle without any gaps or extraneous lines, giving a sense of stability and elegance. Despite some overlap among the five rings, individuals can discern the boundaries of each ring and imagine what the overlapping sections look like. The simple rings, through their interlocking relationship, create a sense of depth and spatial dimensionality. The rings are closely connected without excessive gaps or distances, conveying a sense of interconnectedness and mutual support.

(3) Principle of Continuity: The five rings are arranged according to a logical pattern, resulting in a figure that is balanced, symmetrical, and harmonious both horizontally and vertically. This arrangement conveys a sense of order, unity, and aesthetic appeal.

(4) Figure-Ground Relationship Principle: The colored rings stand out vividly against a white background, creating a stark contrast. This makes them the primary information and focal point.

The Olympic Rings logo is not only a symbol of athletic competition but also a representation of global unity and peace. Its design demonstrates outstanding achievements in visual communication, cultural symbolism, and global recognition.

3.2 Gestalt Psychology Perspective: Differences in Logo Design Simplification Strategies Across Various Social Contexts

When designing logos through the lens of Gestalt psychology, it is crucial to recognize that the simplification of logos often relies on basic shapes such as circles, squares, and triangles. These shapes are combined using intersecting or tangent methods alongside varying text, colors, and themes. However, different shapes or symbols may carry distinct connotations in various regions or cultures. For instance, Eastern cultures tend to place more emphasis on symbolic meaning and metaphor, whereas Western cultures prioritize direct expression and clarity. Additionally, preferences for colors, shapes, and patterns vary across cultures. Therefore, designers must consider the unique characteristics and preferences of different cultures to create more successful logos.

In diverse cultural contexts, the requirements and preferences for logo design can vary significantly. In Eastern cultures, logo designs often lean towards auspicious patterns and symbols, with the circle symbolizing unity and harmony. Consequently, many Chinese brands incorporate circular symbols in their logos. They also prefer colors that symbolize good fortune and prosperity, such as red and gold. For example, the logo design of the Bank of China utilizes red and circular elements. Red represents auspiciousness, luck, and prosperity in Chinese culture, while the circle symbolizes unity and harmony. This logo merges the symbolic meanings of traditional Chinese culture with the professional image of the modern banking industry. Similarly, the renowned technology company Huawei is another emblematic example.

In Western cultures, there is a stronger emphasis on direct expression and simplicity, with a preference for simple shapes and letters, and a fondness for basic colors such as black and white. This is exemplified by the logos of renowned companies like Apple and the sports brand NIKE. The Apple logo, featuring an apple with a bite taken out, employs a minimalist design and a monochromatic color scheme. This logo reflects the Western cultural preference for clarity and directness. The simplicity and modernity of the Apple logo align with the innovative spirit and technological orientation of Western society.

In Indian culture, blue symbolizes divinity and purity. Hence, many Indian brand logos incorporate blue. For instance, the logo design of Tata Group, an Indian multinational conglomerate, utilizes blue, linking it to divinity, wisdom, and tranquility in Indian culture. Additionally, blue is universally regarded as a symbol of trust and reliability in the business world. Tata Group's choice of blue as the dominant color in its logo likely aims to underscore the company's reliability, professionalism, and commitment to excellence and quality. The State Bank of India (SBI) primarily uses blue and white in its logo. Blue is often associated with wisdom, trust, and stability, closely aligning with the banking sector's attributes. White represents purity and integrity, emphasizing the bank's transparency and honesty. The logo features a circular center containing a design resembling a keyhole. Circles are symbolic of completeness, unity, and eternity in many cultures. The keyhole shape may signify security, protection, and the ability to "unlock" wealth, conveying the bank's duty to safeguard customer assets and provide financial solutions. Through its color scheme, shape, and simplicity of design, the logo effectively communicates the core values of the banking industry, such as safety, trust, and professionalism, while also reflecting Indian cultural traits and the bank's branding philosophy. [7]

Table 2. Case Examples of Logo Design Differences Across Social Contexts from a Gestalt Psychology Perspective

Country	China	United States	India
Cases	 Bank of China Logo Huawei Technology Company Logo	 Apple Inc. Logo NIKE Logo	 TATA Motors Logo State Bank of India (SBI) Logo
Characteristics	The Bank of China's logo utilizes red and circular elements. Red represents auspiciousness, luck, and prosperity in Chinese culture. While the circle symbolizes unity and harmony. This logo blends the symbolic meaning of traditional Chinese culture with the modern banking industry's professional image. The Huawei logo	The Apple logo features an apple with a bite taken out, adopting a minimalist design and a monochromatic color scheme. This logo reflects the Western cultural preference for clarity and direct expression. The Nike logo, known as the "Swoosh," is famed for its minimalist line design, making this simple hook-shaped logo easy to	Tata Group selects blue as the primary color of its logo, likely aiming to emphasize the company's reliability, professionalism, and commitment to excellence and quality. The State Bank of India's logo predominantly uses blue, associated with wisdom, trust, and stability, closely aligning with the banking industry's characteristics.

centers around a red petal-shaped figure, symbolizing life, growth, and prosperity in many cultures, indicative of Huawei's spirit of continuous innovation and growth in the tech sector. Red, holding significant importance in Chinese culture, symbolizes good fortune and prosperity.	recognize and remember.	White represents purity and integrity, highlighting the bank's transparency and honesty.

4. The Benefits and Challenges of Simplifying Logo Design from a Gestalt Psychology Perspective

Through the description and statistical analysis of logo design cases of globally recognized brands and institutions, as well as the interpretation and summarization of research results using relevant theories. It has been observed that simplification strategies in logo design, from a Gestalt psychology perspective, can effectively enhance indicators such as perceptual clarity, cognitive load, information content, aesthetic appeal, and satisfaction. These strategies employ organizational rules like figure-ground relationship, proximity, similarity, and continuity in logo design. Furthermore, simplification strategies under Gestalt psychology also foster creative thinking and problem-solving capabilities in logo design, thereby enhancing innovation and communicative effectiveness. [8] Simplification strategies in logo design play a pivotal role in practical application, mainly improving innovation and communicative effects through the following aspects:

(1)Highlighting the Main Message of the Logo: Simplifying elements within the logo can make the main message more prominent and easier to understand. Utilizing the symbolic nature of visual elements effectively conveys the logo's message.

(2)Enhancing Logo Recognizability: Simplification of the logo's form can make it more easily recognizable and memorable. During the design process, adopting a concise form and clear composition can enhance recognizability, ensuring the audience can easily identify and remember the logo.

(3)Creating Visual Impact: Simplification and symbolization can create more abstract and unique visual forms, thereby increasing the visual impact and innovation of the logo. Reducing details and minimizing visual noise enhances the logo's visual impact, attracting audience attention. [9]

(4)Saving Design Costs: Simplifying logo elements can reduce design and subsequent usage costs, making the logo more adaptable for various media applications. In the internet era, the need for logos to be adaptable across multiple platforms has emerged as a new requirement, such as for mobile apps, web pages, and home screens. Given the limited space in these new usage scenarios, there is a need for more effective information transmission.

Applying the principles of Gestalt psychology in logo design involves both artistry and scientific methodology. Design practitioners must not only master these principles but also learn to apply them flexibly in practice. When employing Gestalt principles, a deep understanding of brand values and target audiences is necessary, adjusting strategies according to brand personality, market positioning, and consumer psychology. For example, a fashion brand targeting young people might adopt bolder simplification techniques to capture their attention; whereas a brand with a long history may need to simplify moderately while retaining a sense of tradition to suit modern aesthetics.

However, excessive simplification may diminish the uniqueness of a logo, causing it to lose recognizability in a competitive market. Designers should avoid blindly following the trend of simplification without thought, ensuring that each simplification effort is aimed at better conveying the brand's unique story and values.

Conversely, overly complex designs can cause visual fatigue, reducing logo recognizability. In today's era of information overload, capturing the audience's attention quickly is crucial. This requires designers to find a

balance between creativity and functionality, ensuring the logo's appeal is consistent with its application context and recognizability.

Cultural, social, and linguistic factors are critical to design. Designers must have a profound understanding of the target culture to avoid cultural misinterpretations and insensitive designs, ensuring accurate cross-cultural communication.

In summary, the application of Gestalt psychology in logo design requires finding the right balance between simplification and uniqueness, tradition and modernity, and localization and internationalization. Through meticulous design, logos should possess high cognitive value and rich cultural significance, achieving visual attraction and emotional resonance, and standing out in the competitive market.

5. Conclusion and Recommendations

In the field of visual design, the trends of simplification and flat design have been widely adopted, signifying design innovations that align with the information age and consumer preferences. This study, through the analysis of domestic and international well-known brand logos, points out that the application of Gestalt psychology principles such as proximity, similarity, continuity, and closure can effectively enhance the perceptual clarity, cognitive efficiency, and aesthetic satisfaction of logo designs, thereby increasing innovation and communication efficiency.

Applying Gestalt psychology in logo design serves as a key strategy for refining brand information, ensuring prominence and ease of understanding, crucial for adapting to cultural and technological evolutions, and maintaining design simplicity and clarity. This research also emphasizes the necessity of understanding cultural differences in logo design, noting the diverse design needs across different cultural backgrounds. For instance, the Eastern preference for auspicious colors and the Western preference for simplicity and direct expression.

Simplified design methods can enhance the aesthetic appeal and recognizability of logos, adapting to various mediums and environments, and meeting consumers' needs and aesthetic preferences. Gestalt principles provide practical strategies for designers, emphasizing focusing on core elements to ensure designs are concise, clear, and at the forefront of innovation.

Faced with technological advancements and changes in the cultural environment, logo design encounters both challenges and opportunities. Digitization drives innovation in design tools and mediums, requiring designers to master both traditional and digital tools. Cultural shifts demand designers have cross-cultural understanding and communication skills to ensure design works have global appeal while respecting local cultural characteristics.

The design strategies and theoretical frameworks proposed in this study, combining Gestalt principles and simplification methods, offer a new way of thinking to navigate changing environments. Future research should explore the relationship between logo design and user behavior, meeting user expectations while considering environmental sustainability, promoting environmental protection, and social responsibility. This research provides practical guidance for design practice, hoping logo design can contribute to cultural exchange, technological innovation, and social progress.

REFERENCES

[1] Guberman, S. 'Gestalt Theory Rearranged: Back to Wertheimer', Frontiers in Psychology, vol. 8, pp. 1782-1782, 2017.

[2] Higuera-Trujillo JL, Llinares C, Macagno E., The Cognitive-Emotional Design and Study of Architectural Space: A Scoping Review of Neuroarchitecture and Its Precursor Approaches, Sensors (Basel, Switzerland), vol. 21, (6), pp. 2193, 2021.

[3] J. Wagemans et al, "A Century of Gestalt Psychology in Visual Perception: I. Perceptual Grouping and Figure-Ground Organization, *Psychological Bulletin*, vol. 138, No. 6, pp. 1172-1217, 2012.

[4] Roy R. Behrens, Central Compilation and Translation Services Ltd. Art, Design and Gestalt Theory[J].

Decoration, No. 3, pp. 32-35, 2018.

[5] Wang Ruoxing, WANG Bosen. Ultimate simplicity --Thinking triggered by the design style of Apple products[J]. *Design*, No. 14, pp. 112-113, 2017. DOI:10.3969/j.issn.1003-0069.2017.14.033.

[6] Shi Danqing. Gestalt Design for Large Scale Low-Density New Media Space[J]. *Journal of Computer-Aided Design and Graphics,* Vol. 32, No. 7, pp. 1192-1198, 2020.

[7] Dou Chengjun. A comparison of the meanings of color words in Chinese and Western cultures[J]. *Journal of Central South University for Nationalities (Humanities and Social Sciences Edition),* No. 27, pp. 132-133, 2007.

[8] Lu Yuan. The phenomenon of "flatness" in interface design[J]. *Journal of Nanjing Arts Institute (Art and Design Edition),* No. 6, pp. 213-216, 2014.

[9] Wu Dan. The psychology of visual simplification from the evolution of logo design[J]. *Research on Art Education,* No. 1, pp. 70-71, 2017. DOI:10.3969/j.issn.1674-9286.2017.01.047.

[10] Han Jinghua, Niu Jing. Research on the application of Gestalt psychology in interface design[J]. *Packaging Engineering*, Vol. 38, No. 8, pp. 108-111, 2017.

[11] Zhao Ying, Characterisation of MG animation aesthetics in the field of information visualization [J]. *Art View,* No. 7, pp. 148-149, 2021. DOI:10.3969/j.issn.1002-2953.2021.07.028.

[12] Wong W., Wang H. Hanhan. Measurement of "eye-opening" recognition of visual symbols based on Gestalt psychology[J]. *Packaging Engineering.* Vol. 44, No. 6, pp. 258-264, 2023.

[13] Yuan Jianfeng. Getting the "Idea" and Forgetting the "Shape" - Aesthetic Discussion on Gestalt Psychology of New Chinese Decorative Style [J]. *Journal of South China Normal University (Social Science Edition)*, No. 4, pp. 187-190, 2015.

[14] Yan Chen. Gestalt psychological aesthetics in web design[J]. *Technology and Publishing*, No. 2, pp. 66-67, 2012.

[15] Wei Hong. Translation Re-creation under the Threshold of Gestalt Psycho-Aesthetics[J]. *Journal of Zhong Nan University (Social Science Edition)*, Vol. 17, No. 3, pp. 190-194, 2011.