Research on the Application of Text Innovation Design Under Audio-Visual Synesthesia

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ABSTRACT

By studying the causes and functions of audio-visual synesthesia, this paper applies the concept of audio-visual synesthesia psychology to text design, so as to make text design have deeper artistic charm and express the beauty of auditory art with the language of visual design. Taking "high mountain and flowing water" characters as an example, this paper analyzes the shape, sound, meaning and cultural connotation of characters, and uses audio-visual synaesthesia as the theoretical basis to summarize the rules of the creation techniques of figurative, abstract and image in the practice of innovative text design. It helps people to better feel the artistic conception of mountains and rivers, and also provides new directions and innovative points for the future research of text design.

Keywords: *Text design, Audio-visual synaesthesia, Visual expression.*

1. INTRODUCTION

Vision and hearing are formed by the waves of light and sound waves, which are received by the two organs of the eyes and ears, through different sensory neurons in the frontal region of the brain, and enter the brain endings. From a physical point of view, light wave and sound wave are a wave, people through the visual and auditory organs to receive this wave, through nerve conduction into the brain terminal, forming vision and hearing. This makes the production of audio-visual synesthesia have a physical and physiological basis.

Because of the different expression techniques, the visual way of glyphs to produce word sounds is also different, there are three specific: first, through the use of concrete point, line and surface sound elements in the text design to produce auditory synaesthesia; Second, abstract expression is carried out through the spatial and temporal characteristics of font and character sound; Third, auditory synaesthesia caused by the episodic associative artistic conception triggered by symbolic and thematic works of art. The psychological concept of "audio-visual synesthesia" is applied to text design, and the experience of synesthesia under the interaction of form, sound and meaning of words is explored, so that text design has a deeper artistic charm, and the beauty of auditory art is expressed in the language of visual design.

2. INNOVATIVE DESIGN EXPRESSION TECHNIQUE OF TEXT UNDER AUDIO-VISUAL SYNESTHESIA

2.1 Figurative Expression of Form and Sound

The figurative creative technique is to use sound elements to directly or indirectly express the feeling of words and sounds, usually using a descriptive synesthetic way, borrowing Musical Instruments, notes, music and other elements to express the auditory effect. Through the arrangement of lines and strokes and the change of thickness, the text is endowed with sound, and the most basic points, lines and surfaces of vision are used to express sound elements in the text design, so that the text is endowed with the auditory feeling of sound.

2.1.1 The Use of Sound Elements

The most direct way of expression with the figurative creation technique is to replace the font of the text with the sound elements such as human

voice, music and audio, so that people can feel the hearing visually, and produce different auditory effects through the arrangement of the position and size of the point, line and surface elements. Points are the most basic elements in the visual field. Points with different shapes have different sounds. Points with smooth edges give people a soft sound, while points with jagged edges give people a sharp and harsh feeling. For example, in heavy metal music posters, in order to express the noise and agitation of rock, radioactive sharp corners are added to the edge of the text, which has great visual impact, making the calm picture dynamic and giving people a strong sense of rhythm.

2.1.2 Suggestion of Melodic Lines

In the text design, the changes of the lines and strokes can best reflect the pronunciation of the text. The thickness, curvature, length and arrangement of the strokes and lines in the text design can bring different auditory feelings. The most basic form of line is straight line and curve, straight line is divided into vertical line, horizontal line and oblique line, curve is divided into geometric curve and free curve. The thick straight lines in the text design give people the feeling of low and slow, like playing the bass register of the piano; Thin lines give people a light, high feeling, such as playing the high register; The diagonal line has the feeling of upward or sprinting forward, showing the sense of speed visually and associating with the joyful rhythm of the leap of hearing. Curves have a feeling of elasticity and power, and are more dynamic in the hearing. The geometric curve drawn under certain rules has strong elasticity and tension, embodies the beauty of rules and has a modern sense and accurate sense of rhythm. Free curve is a kind of curve drawn by hand or formed naturally. It is free, handsome and random. The unique shape of free curve is mainly reflected in its rhythm, elasticity and free extensibility.

In addition, the direction of the lines, the shade of the lines and the density of the lines can create different auditory effects. When designing many music posters, the arrangement, change and contrast between the words are transformed into melodies, the silent sound waves are concreted into lines, and the characters are endowed with the auditory feeling of "word sound".

2.2 Abstract Expression of Form and Sound

Both sound and text have the characteristics of space and time, and the expression of time and space has certain abstractness. By arranging and combining the direction, thickness and length of the strokes, a three-dimensional space can be formed on the plane. The thickness, length and depth of the strokes can reflect the height, speed and strength of the sound, and an abstract space can be created in the hearing. The text design simulates the hearing space through various forms, giving the font the auditory perception of the word sound. The trajectory of visual elements in text design forms a kind of movement, dynamic text shows the timeliness of text, and sound itself is constantly moving with time. With the combination of modern multimedia technology, text and sound can move synchronously in time. Therefore, abstract figures such as point, line and surface are taken as the basic elements in the text design, and the space and time of font and word sound are reflected by coordinating the organizational relationship between them.

2.2.1 Rhythmic Expression of Space

Text is a two-dimensional symbol language. In the plane carrier, virtual three-dimensional space is formed by changing the direction of font and stroke. Designers often use the principle of perspective to design text, thus breaking through the rigid two-dimensional space and giving it a strange three-dimensional space. The spatial sense of sound is relatively abstract. It is not directly perceived through visual forms, but based on audio-visual synaesthesia, text design simulates the level of sound intensity and the speed of sound in various forms to form a certain rhythm and rhythm to experience the spatial sense of hearing. The most common way to express the spatial sense of words and sounds is to use perspective principle to design, breaking through the two-dimensional space of fonts.

2.2.2 The Dynamic Representation of Time

Time can describe changes, and sound is constantly moving, changing in the flow of time. With the development of modern multimedia, words can show dynamic movement to a certain extent. This form of movement makes it possible for time to participate in the design of words, and

also brings the innovation of words. In the MV created by Kota Iguchi for the band's song "everything but the love", the designer designed a dynamic font according to the lyrics, and used a large number of geometric symbols and deconstructed fonts to make the text move with the music and show the dynamic form of the text in time, forming a strong visual impact. The interactive device "Words Kicked Back" uses projection and robotics to visualize sound. The experiencer sends his own language to the virtual time through the machine, which is instantly converted into text, and in the process, if any text falls into zero speakers, it will become sound and be transmitted to the real world. If the text touches the foot in the upper right corner, it is "kicked" back. The use of science and technology makes the text have more forms of expression, showing a dynamic sense of time.

2.3 Image Expression of Form and Sound

The so-called image expression refers to the creative addition of the font from an objective perspective through the appearance of the font to reflect the designer's emotions, that is to say, the image is the objective image that the designer uses to express his subjective thoughts. This technique of expression uses auditory synesthesia caused by episodic associations triggered by symbolic and thematic works of art.

2.3.1 Associative Imagery

Character meaning is the information that Chinese characters want to convey. Some characters have multiple meanings. Designers use associative techniques to express font images when designing characters. Association is usually by a person, a thing or an idea to think of other people, things or concepts, it is an important psychological means for the subject to understand and express. Design master Kan Tai-keung's "The Feeling of Words" uses "four treasures", which are closely related to Chinese characters: pen, ink, paper and inkstone. The four treasures of the study and the four pictographic Chinese characters of "mountain", "water", "wind" and "cloud" are distributed in the four "calligraphy and painting", and the artifacts and calligraphy are integrated into one, combining the meaning and displaying the ethereal visual

effect. It not only named the feelings of the characters and the four treasures of the study, but also successfully transformed the true scene into an artistic conception and created a humanistic space of scene integration. And the "True, Good and Beautiful" series of posters by Satomaru Takahashi, This set of posters consists of four posters, namely "flower", "bird", "wind" and "moon", which are designed with extremely simple and concise Chinese characters as the main graphics to create a picture, expressing the vastness and beauty of nature, reflecting the inner spirit and meditation. From the font of the text revealed a kind of internal tension and simple artistic conception.

2.3.2 An Extension of Chinese Culture

Since ancient times, China has been advocating the idea of nature, advocating that people should conform to nature and combine with nature. To a great extent, imitating nature has influenced the development of our country's artistic aesthetic thoughts, and has become an important criterion of artistic aesthetic. The music and calligraphy in Chinese traditional culture follow the natural thought, and the application of the temperament of Chinese culture to the character design can not only reflect the bold and rough or beautiful and elegant charm, but also show the combination of ancient and modern and unique cultural heritage.

3. THE CREATIVE PRACTICE OF AUDIO-VISUAL SYNESTHESIA IN TEXT DESIGN — TAKING "HIGH MOUNTAINS AND FLOWING WATER" AS AN EXAMPLE

3.1 Analysis of Innovative Design Ideas of "High Mountain and Flowing Water" Text

"High mountains and flowing water" literally refers to mountains and flowing water, but in certain cases it is often used as a metaphor for bosom friends or confidants, and it is also used to describe the elegance and beauty of music. In the text design of "High Mountain and flowing water", we can outline the form of running water by using lines, according to the direction of the music melody of "high mountain and flowing water", use the density and direction of the lines to express the sense of distance and space of the music, and use

the length and thickness of the lines to express the sense of speed and rhythm of the music. The role of line modeling allows the text to flow dynamically with the music in time and space. ("Figure 1")
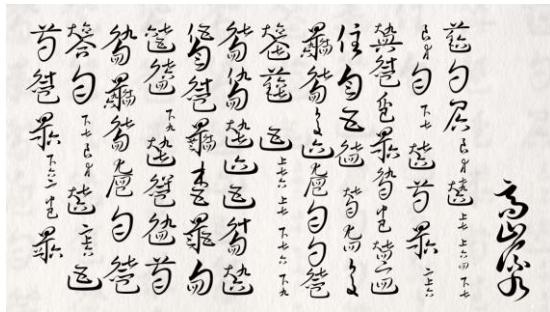

Figure 1 Typography display chart (Photo credit: author's own production).

"High Mountains and Flowing Water" kite music makes full use of various techniques, including power control, rhythm processing, power control and so on. The "Mountain" part uses the bass string to show the magnificent landscape of the mountains, outlining a picture of the mountains winding, cascading, majestic and soaring into the sky, and the "water" part uses the up-and-down gliss on to depict a scene of cascading waterfalls and gurgling streams, describing a poetic picture of "high mountain water".

Therefore, in order to express the artistic conception of "high mountain and flowing water", in the text design of "high mountain and flowing water", the techniques and styles of Chinese ink painting can be applied to the artistic conception of "high mountain and flowing water", and the flow of ink can be used to express the artistic conception of high mountain and flowing water, so as to form a style of combining hardness and softness with law and degree, and to express the unique charm of Chinese art that integrates ancient and modern times, to express the extension of traditional culture.

3.2 "High Mountains and Flowing Water" Text Innovation Design Process

First of all, the four characters of "high mountains and flowing water" are designed, and cursive calligraphy style is adopted in the font. Cursive can best express the changes of emotions in the artistic conception, and has a certain sense of rhythm in the writing form. The beauty of rhythm is often expressed through the twists and turns of dotted lines. The length, thickness and posture of stippling lines, as well as the different shades and shades of ink, constitute the cursive "notes". Make

the whole picture form a kind of silent music. In the form, the cursive script of the calligrapher Sun Guoting is used for reference. Sun Guoting's calligraphy is elegant and free. In his cursive script, the strokes and lines are used to create a picture full of complex and changeable rhythm, which is similar to the changeable melodious artistic conception created by the kite song "high mountains and flowing water". In addition, the author also designed the "high mountains and flowing water" character reduction spectrum, Guqin character reduction spectrum is a new combination of Chinese characters, through the Chinese character creation experience to simplify the complex to connect the shape of the meaning.

After the static font design, through the combination of "mountain and water" music, the dynamic design is carried out on the basis of audio-visual synesthesia theory. The flowing form of ink and wash is used to express the artistic conception of the text. On the one hand, the musical data of "High Mountain and flowing water" is analyzed figuratively and abstractly, and the auditory features are transformed into visual features. On the other hand, the shape, sound and meaning of the text of "High mountain and flowing water" are sorted out figuratively and abstractly, and finally the two are synchronized in time and space to complete the design practice. By using the noise and displace in TouchDesigner, the text is raised and deformed to adjust the appropriate picture atmosphere. Audiodevcein is used to make the ink text sway with the music. When the music is played in tune, the text of the picture also fluctuates, and the music of "high mountains and flowing water" is visualized. The words and music are combined, and the words on the picture ripple with the music, forming a sense of flow.

4. CONCLUSION

This paper first analyzes the significance and role of audio-visual synesthesia in text design, then analyzes a large number of design cases, summarizes and analyzes the creative methods, and draws from and learns from excellent creative achievements. Finally, through the combination of audio-visual synaesthesia, the text design is studied by taking "High Mountains and Flowing Water" as an example, and the artistic conception of mountain running water is expressed through the analysis of shape, sound and meaning, so that the text mountain running water and Guqin mountain running water are synchronized in sound and

painting, bringing more abundant forms of expression for the text design.

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