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THE FEATURES OF CHINESE TYPEFACE AND ITS EMOTION

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ABSTRACT

Chinese characters, a kind of hieroglyph, contain different shapes and styles and also provide a meaningful feature in vision transmission. Due to the huge amount of characters, designers are usually based on self-experiences with no auxiliary system of unified meanings for characters in the viewpoint of emotion. This study intends to find out the relationship between characters and their emotion, and contains two purposes: (1) To define the characters' features, (2) To find out the characters' features and its KANSEI words. Therefore, the features are discussed for Chinese characters based on PANOSE SYSTEM 2.0, the Latin font classification system. In this system, the major categories contained: (1) genre, (2) serif, (3) weight, (4) topology, (5) contrast, (6) angle, (7) tool kind, and (8) aspect ratio. The features are divided into 8 major categories with 40 elements. 8 KANSEI words in 4 styles (elegant, Vigorous, gentle and simple) are selected for typefaces by 30 persons. The relationship between the features and KANSEI words are analyzed by using the Quantification type I method. According to the results, Genre, Serif, Tool kind, and Aspect ratio affects the emotion greatly, and the following is Topology, Contrast, and Angle in terms of 8 KANSEI words in 4 styles. It is helpful for designers or amateurs to transmit an imagery precisely.

Keywords: *Chinese character, Typeface, KANSEI*

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1. BACKGROUND AND PURPOSE

At the moment, the typeface books in the domestic market are mainly focused on the visual balance of the typeface layout, along with numerous golden rules on the visual modification of typeface design. Nonetheless, these rules only inspire the dull typeface creations. Is there any way to create a more original typeface design? It seems that the objective assessment of a designer is the only solution. The numbers of digital Chinese calligraphy and related researches have increased in the recent years, but the actual research topics of research are limited to physical appearance of typeface. Since Chinese calligraphy is widely known as "Mental Image", it is certainly a deep appointment in the Chinese typeface study that the emotional factors are rarely raised in a discussion on visually recognizing the typeface.

Therefore, the complexity of Chinese characters has added difficulties in designing Chinese typeface, while the use of computer typeface has minimized modern man's involvement in creating typeface art. This research further explores the relationship between the visual characteristics and emotional factors of Chinese characters. The suggestions that are made on the Chinese character typefaces, styles and images in this research should serve as reference material or design reference for designers to benefit the future graphic designs.

2. LITERATURE REVIEW

2.1. Western characters

The PANOSE System is an essential typeface identification system used to classify typefaces on the similarity of visual characteristics. The visual characteristics of any unknown typeface can also be classified and matched with other typefaces through the system. PANOSE defines the following categories: Latin Text, Latin Script, Latin Decorative, Iconographic, Japanese Text, Cyrillic Text and Hebrew. The original PANOSE system was first developed by Benjamin Bauermeister in 1985. At the early stage, one typeface consisted of *7* concatenated values per typeface, but was later upgraded to 10 concatenated values per typeface. Each value is defined as a unit type for visual appearance, such as the thickness of a stroke or type of serif. The modified PANOSE System 2.0 includes Chinese character support, which offers a very crucial reference to build up the concept of classification.

PANOSE raises topics of discussion in terms of examining and defining elements of typeface characteristics, often regarded as important reference material for building up the concept of classification. Since the current definition of Chinese character strokes is less comprehensive and precise, it is not applicable to identify various types of typefaces. With the reference to the western typeface classification system of PANOSE System 2.0 format; this research has developed a suitable method of classification for Chinese characters.

2.2. The Use of Image Vocabulary for Criticism

Regarding the descriptive vocabularies for design criticism, the general public the use of adjectives as overly generalized and fail to reach common consensus. Even professional creative workers, such as designers, are also suffering from the same problem. To find the best solution, Chao-chieh Chen conducts a massive grouping and classification tree on the

commonly used adjectives in his thesis "Research on the Use of Vocabularies for Product Image Criticism". After a comprehensive investigation and survey on designers, Chen has concluded vocabularies of criticism in 6 main categories: Classical, youthful, sentimental, rational, unacceptable and comfortable. A contrasting relationship is demonstrated through the pairing up of the vocabularies: classical and youthful, sentimental and rational, classical and rational. Under the classification of 6 main categories of the classification tree, more vocabularies are systematically arranged and put into the total of 7 categories. At the later stage of the classification, the vocabularies became more clearly defined, distinctive and ideal for professional discussion. Chao-chieh Chen includes the generalized vocabularies into the first to third category and labeled as "Not Applicable": only serves as reference for classification but not recommended to use; whereas, the fourth and fifth categories can be used by customers. The final sixth and seventh categories can be specifically used by designers. Suitable image vocabularies for typefaces were selected from this thesis and used as reference to this research.

3. RESEARCH METHOD

The experiments of this research are primarily divided into 2 sections. The first section is to define the characteristics of Chinese characters and select image vocabularies. Chinese characters are selected as a sample. The second part of the experiment is to investigate the level of emotional involvement towards image vocabularies for typeface. Further classifications and analysis are conducted on the definition of characteristics and image vocabularies. Each procedure is explained as below:

3.1. Define characteristics of Chinese character strokes

The characteristics of Chinese characters are listed and defined, along with the appropriate explanation in accordance with PANOSE typeface definition system. PANOSE System 2.0 classified the characteristics of Chinese character strokes: (1) Genre (2) Serif (3) Weight (4) Typology (5) Contrast (6) Angle (7) Tool (8) Aspect ratio.

(1)Genre: This is the general classification on the features of typeface. The suitable application of Chinese characters has been modified based upon the concept of PANOSE System 2.0. To illustrate the contrasts, each characteristic is labeled in English with a Chinese explanation. This research has specifically classified the characteristics into 4 categories: typeface for research text, handwritten typeface, decorative typeface and artistic graphic typeface.

(2)Serif: The types of stroke end are divided into the groups of "with serif" and "without serif" before being subdivided. In this research, the characteristics are classified into 9 types: With serif – others, with serif- Min font, with serif- hard point pen font, without serif- ordinary, without serif- round shaped, without serif- gradually enlarging font, without serif- soft point pen font, without serif- pointy font, without serif- others.

(3)Weight: Weight can be explained as the thickness of stroke in typeface. Generally speaking, the thicker the stroke, the heavier and denser the typeface (when black typeface

appears on a piece of white paper). In this research, the weight can be classified into 3 types: light, medium and heavy.

(4) Topology: Topology of typeface. Many Chinese character types were evolved from the classical typeface. Hence, the structural arrangement of the strokes for such typeface often shares similarities with classical typeface. Examples are listed for comparison. The types of topology can be classified into 6 types: others, regular script, min font, bold font, clerical script and handwritten script.

(5) Contrast: The contrast of vertical and horizontal strokes. The ratio of vertical and horizontal strokes in "十" is used as "SC" for comparison and can be classified into 4 types based upon the characteristics: Equal, thick horizontal stroke and thin vertical stroke, lower proportion, higher proportion.

(6) Angle: The angle of slant for typeface layout. It was originally taken from by "Letterform", Latin Text of PANOSE System. In this research, angles are classified into 4 types: without slanting, vertical slanting, horizontal slanting, vertical/horizontal slanting.

(7) Tool Kind: The type of writing tool, originally taken from "Tool Kind", Latin Hand Written of PANOSE System. In this research, the characteristics of tool kinds can be classified into 7 types: others, soft point pen, sculpture, print seal script, marker, hard point pen and pressure hard point pen.

(8) Aspect ratio: The aspect ratio of physical appearance and outline of typeface. In this research, the characteristics of typeface can be classified into 3 types: ordinary, narrow and flat.

3.2. Image Vocabulary Selection

Chao-chieh Chen's vocabulary list in product image criticism (1993) was used as the reference to image vocabulary selection. The most appropriate vocabularies selected based upon the related suggestions of the given reference material. The group expert method was applied during the discussion of 2 industrial design PhD and 4 MA students to summarize the rules: (1) Appropriate adjectives to describe typefaces (2) Make sure whether the vocabularies are overly generalized or repetitive. (3) Suitable to use as source of reference for typeface design. The students finally decided on the following vocabularies that fit the requirement of the rules:

·Classical ·Elegance ·Resplendent · Intense ·Exciting ·Gentle

·Romantic · Active ·Eye-catching ·Staid ·Sleek ·Modern

3.3. Compiling and Selecting Sample for Testing

The popular typeface products in the domestic market are mostly produced by companies, such as DynaComware, Arphic Technology, Yeze etc. In particular, with DynaComware, whose Huakeng font series, not only enjoys the highest market share, but comprises a diverse range of typefaces that are greatly adopted by printed media. Huakeng font "Golden Disc 150- Versatile Chinese Language Commemorative Edition" is selected for this experiment

and used as master typeface for testing and stimulant material. Through such an unbiased method of typeface selection, the selected typefaces are unique in appearance and most recognizable to facilitate the efficiency of the experiment. Through the application of the experiment method, the typefaces are paired up and displayed by computer software. Each participant is asked to score the typeface based upon its similarity. Before eliminating the similar typefaces, the level of similarity between the typefaces is determined once the average scores are gathered from the participants.

3.4. Experiment for investigating the level of emotional involvement for typeface image vocabularies

(1) The purpose of experiment

Gain a better understanding of people's emotional involvement towards each typeface and explore the relationship between the definitions and emotional involvement of typeface characteristics.

(2) Experiment participants

The experiment consists of 30 participants with design teaching background and a minimum of 2 years design teaching experience. Chinese is required as their first language. The experiment contains equal numbers of males and females.

(3) Experiment sample

The total of *74* cardboards, each with the size of playing card and different typeface is printed on one side. Each cardboard has 9 sets of characteristics: 分,只,意,組,持,斯,管,者,價.

(4) Experiment procedure

The distribution level method is applied in the experiment. The participant will receive one image vocabulary at one time in the order of 1.Classical 2.Elegance 3.Resplendent 4.Intense 5.Exciting 6.Gentle 7.Romantic 8.Active 9.Eye-catching 10.Staid 11.Sleek 12.Modern. The scoring method: The participants are asked to first give a score based upon the emotional involvement towards typeface, follow by eliminating the cardboard that scores zero and lacks of the aforementioned emotional descriptions. Divide the rest of the cardboards into 3 groups: high, medium and low, in accordance with the image. Again, divide each group of cardboard into high, medium and low before giving the score between 1 to 9 out of 10 levels (0~9).

4. EXPERIMENT DESIGN AND EXECUTION

4.1. Explore the relationship between the image vocabulary and characteristic of strokes.

The result of Quantification Category I Analysis provides a scoring chart for each vocabulary and its contrasting element. The increase in the partial coefficient of correlation indicates that a great impact on imagery will be generated. The points of the elements offer an insight to the level of relationship between the changes of various characterized elements and the imagery.

(1)Classical Feeling : “Genre” generates a great impact on the classical feeling, follows by “Aspect Ratio” and “Typology”. Within the “Genre” category, handwritten typeface generates a strongest classical feeling. “New Print Seal Script Font W5” is regarded as the typeface that contains the most powerful classical impression in the previous experiment.

(2)Elegant Feeling : “Genre of Typeface” also generates a great impact on the elegant feeling, follows by “Aspect Ratio” and “Typology”. Other than “Contrast”, each characteristic generates a certain influence on the elegant feeling. Within the “Genre” category, “Handwritten Typeface” provides a strongest elegant feeling. “Bronze Inscription W3” is also regarded as the most elegant typeface of all in the previous experiment.

(3)Resplendent Feeling : “Typology” generates a great impact on the resplendent feeling, follows by “Aspect Ratio” and “Serif Type”. “Weight” is less effective when comes to “Resplendent”. “Decorative Font W5” is also as the most resplendent typeface in the previous experiment.

(4)Intense Feeling : The partial coefficient of correlation to “Weight” is significantly higher than any other factors. The feeling gets more “Intense” as “Weight” gets more stress. Intense feeling gives no impact on “Contrast”. In the previous experiment, “Ultimate Bold Font W12” is regarded as the most intensive typeface.

(5)Exciting Feeling : “Genre” generates a greater impact on the exciting feeling, whereas “Contrast” is less effective. The “Artistic Graphic Font”, in “Genre”, provides the exciting feeling. In the previous experiment, “Yuan-Yuan Font W2” is regarded as the typeface with the most “Excitement”.

(6)Gentle Feeling : In certain categories, there is a huge contrast between the points of “Gentleness” and “Intensity”. “Typology” plays the key role, apart from the characterized elements of Clerical Script Font, the font that scored the highest points are mostly latest modern fonts. “Genre”, “Serif Type”, “Tool Kind” and “Aspect Ratio” also generate great impact. “Tan Regular Font W5” has also scored the most points in the previous experiment.

(7)Romantic Feeling : “Genre” of typeface generates the greatest impact on the romantic feeling, while also applying to “Tool Kind”, “Aspect Ratio” and “Typology”. Other than “Weight”, “Contrast” and “Angle” also generate certain levels of influence. In other words, various requirements need to be met before achieving the feeling of “Romantic”. “Regular Script Font W5” is widely regarded as the most romantic font of all.

(8)Active Feeling : “Genre” generates the most impact on “Active”. All other fonts lack of the active feeling except Artistic Graphic Font, follow by Soft Point Pen from “Tool Kind”. “Lian-Lian Font W4” scored the highest points of all the font samples in comparison with the previous experiment.

(9)Eye-catching Feeling: The partial coefficient of correlation indicates this “Eye-catching” image. The “Genre” of typeface counts the most, in particular with the Artistic Graphic Font, the most “Eye-Catching” of all. It follows by “Weight”, as the heavier the typeface gets the more “Eye-catching”. “Decorate Font W5” scored the highest points in the previous experiment.

(10)Staid Feeling : In terms of "Genre" of typeface, Decorative Font generates a staid feeling. Once the typeface gets heavy, the feeling of staid emerges. "Ultimate Bold Font W12" scores the most points of all samples in the previous experiment.

(11)Sleek Feeling : "Tool Kind" and "Hard Pressure Pen" provide the sleek feeling; whereas, light "Weight" and "Genre" of typeface also play important role. "Contrast" generates almost "0" impact. Based upon the statistic report, "Fine Black Font W3" scored the highest point in the experiment.

(12)Modern Feeling : In terms of presenting the feeling of modernism, "Typology" generates the most impact. The structural arrangement of Min Font generates a modern feeling; whereas, serif type also scored very high point. "Without Serif", this characteristic comes with the strongest modern feeling, in other words, the impression of latest typeface. The serif of Min Font lacks of modern feeling. Other elements fail to generate any major impacts. "Huazong Font W5" and "Pipi Font W5" scored the most points of all typeface samples in the previous experiment.

4.2. Explore the Relationship between Image Vocabularies of Similar Types

To explore the relationship of characterized elements, it is required to overlap the points from the key elements and forms of similar images. See results below:

(1) "Graceful": Classical, Resplendent and Elegant

Classical and Resplendent share strong similarities. Hence, Classical and Resplendent provide pretty similar impression. Apart from 5 points of differences, the elements of elegance also scored similar points as the previous two:

(a) Serif: The design of Min Font and serif reduces the feeling of elegance.

(b)Serif: Without serif- Pointy Font lowers the feeling of elegance and resplendent.

(c)Typology: Typology of Min Font increases the feeling of elegance.

(d)Tool: Print Seal Script Font gives the feeling of elegance.

(e)Tool: Pressure Hard Point Pen gives the feeling of elegance.

(2) "Vigorous": Intensity, excitement, active.

Generally speaking, (a) The feeling of excitement is generated if the end of character appears to be "Without Serif- Pointy Font". (b) Typology of typeface "Clerical Script Font" shows lack of excitement. (c) "Print Seal Script" typeface shows a high level of excitement. (d) If the ratio appears to be "more flat", the typeface gives a strong dynamic feeling, but not excitement, or vice versa.

(3) "Exquisiteness": Gentleness, Romantic.

The characterized elements of gentle and romantic typefaces are fairly closely associated. "Print Seal Script Font" of Tool Kind lacks romantic feeling. After a closer look at the partial

coefficient of correlation for the characteristics of strokes of these elements, we came to realize how the romantic feeling focuses more on "Contrast" (strokes). It is the distinctive difference between the two.

(4) "Simplicity": Staid, Sleekness, Modern.

Sleekness generates a great impact in certain aspects: (a) Serif type; (b) Typology; (c) Tool Kind, especially with marker and hard pressure point pen generate a greater diversity by making use of these differences.

5. DISCUSSION AND CONCLUSION

Lastly, this research further explores all the relationship of the image vocabularies by stating all the classification and comparison in figure 1. Certain characterized elements outline the significance and feeling of typefaces. Various characterized elements are explained, concluded and classified in the table 1 below:

(1) Genre: Handwritten and Artistic Graphic Fonts are closely associated with the font imagery. Nonetheless, the relation between the research text and decorative font are less associated.

(2)Serif: The serif of Min Font is less effective in generating much imagery (Classical, elegance, staid, sleekness) or negative impact. Without serif- Pointy font reflects extreme criticisms.

(3)Weight: The weight of font only related to staid and eye-catching feeling.

(4)Typology: In terms of typology types, Min Font gives the resplendent, intensive, exciting, dynamic and modern imagery. Clerical Script Font provides a classical, elegant and romantic feeling, but lack of the exciting feeling.

(5)Contrast and angle: Both are more associated with the overall appearance than "Weight", but generate less impact.

(6)Angle: See above.

(7)Tool Kind: Amongst all the writing tools, Seal Print Script Font generates a positive association on all imagery, especially intensive, exciting and eye-catching feeling. The rest of imagery remains negative. By and large, writing tools give a significant influence on fonts.

(8)Aspect Ratio:Narrow looking font lacks a modern or exciting feeling, but generates positive impact to other imagery.

Table 1: The high level of association of characteristics and elements of image vocabulary

Image vocabulary	**Highly associated characteristics**	**Highly associated characterized features**
1.Classical	Genre/Aspect ratio/Typology	Handwritten Font/narrow/Clerical Script Font

2. Elegance	Genre/Aspect ratio/Typology	Handwritten Font/narrow/Clerical Script Font
3.Resplendent	Genre/Aspect ratio/Serif	Min font /narrow/Hard Pressure Pen
4. Intense	Weight	Heavy
5. Exciting	Genre	Artistic Graphic Font
6. Gentle	Typology/ Genre/Tool Kind/Aspect ratio	Clerical Script Font/ Handwritten Font/ Pressure Hard Point Pen more narrow
7. Romantic	Genre/Tool Kind/Aspect ratio/ Typology	Handwritten Font/ Pressure Hard Point Pen/ more narrow/ Clerical Script Font
8. Active	Genre/Tool Kind	Artistic graphic font/Soft Point Pen
9. Eye-catching	Genre/Weight	Artistic graphic font/ Heavy
10. Staid	Genre/Weight	Decorative Font/ Heavy
11. Sleek	Kind/Genre/ Weight	Pressure Hard Point Pen/ Handwritten Font/Light
12. Modern	Typology/Serif	Min Font/ Without serif

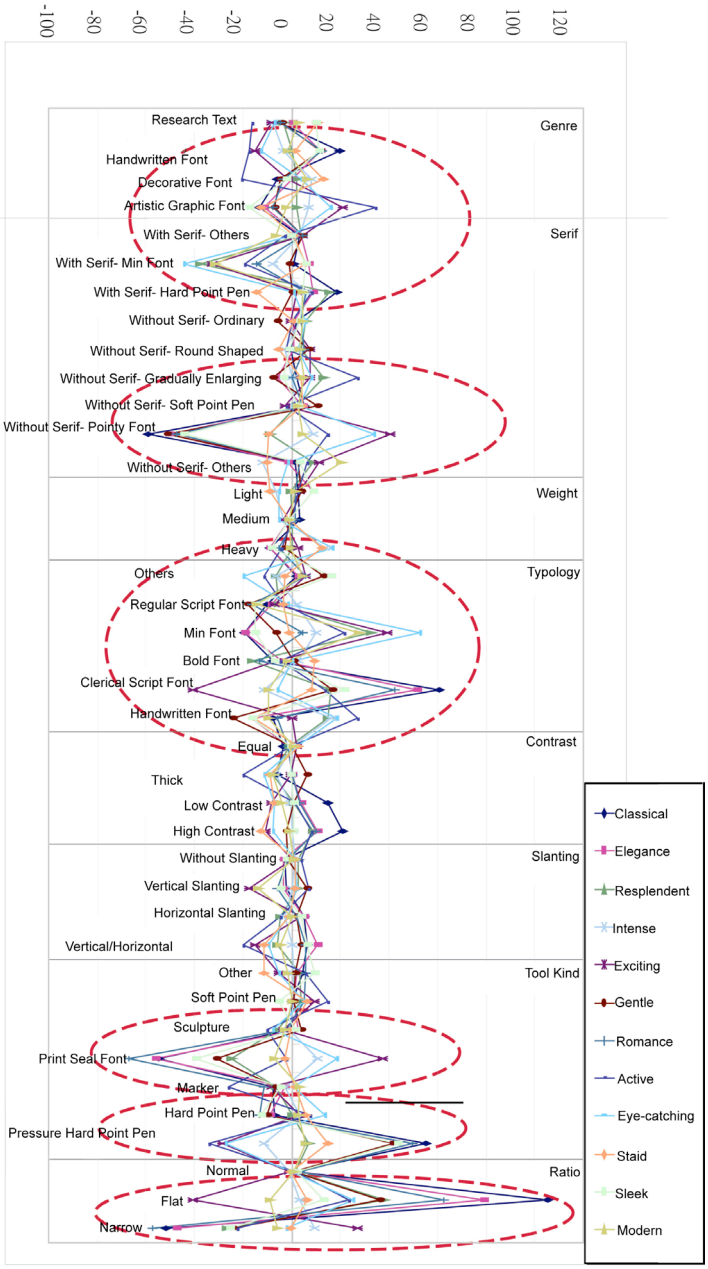

Figure 1: Comparison of points of all imagery elements

Chinese typeface design can be systematically discussed through the detailed examination of this research. To achieve the maximum results, it is absolutely necessary to take note of the element combination when conducting typeface design.

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