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Chinese Typography: Long in history, short on commentary

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By comparison to both the quantity and quality of Latin alphabet typographic commentary, Chinese Typographic Commentary is limited. There are no definitive texts for undergraduates or the industry practitioner, there is virtually no academic writing on this subject, and there is only limited on-line discussion posted by typographers and designers. There are three reasons for this: firstly, the late introduction of type founding and mechanical typesetting to China; secondly, the inherent complexity of the Chinese alphabet; and thirdly, the practical limitations of protecting copyright on new typeface designs. This paper will outline these reasons and then establish the foundation of a typographic commentary as a typographic syntax—a coherent and unified collection of design practice principles for typesetting Chinese.

The first western industrial typesetting technologies, such as the printing press and metal punch cuttings, did not arrive in China until the late nineteenth century with the first Chinese typeface designs cut into metal in the 1880s. In comparison to the west this places the development of these metal cut typefaces more than four hundred years behind the first metal cuts of the Latin alphabet. Inevitably this has had a massive impact on the ability of Chinese typographic designers and practitioners to establish quality designs and then comment on them. Therefore, unlike Europe after Gutenberg, there has never been a substantial period of typographic invention and competition that might then have engendered an energetic typographic debate and commentary.

Further to this delay, and once again in comparison to the Latin alphabet, the Chinese language as a writing system is a very complex system. It is a language with a vast and unfixed number of characters, it has no fixed alphabetic order, and it is also a language made up of characters that are often highly complex in their design—a complexity that has not welcomed design innovation because of the difficulties this imposes on print and typesetting technologies. For example, in respect to the challenges of Chinese language modernisation, Singaporean academic, Zhao Shouhui

notes that, 'another source of difficulty relates to character designers and producers, who, out of eccentricity or in pursuance of their own neologism have created a number of unorthodox shapes for software developers,' (Zhao 2009, pp. 315-378).

In addition to this, the desire of typeface designers wanting to protect their copyright has also delayed the process of creating and distributing new designs. For example, SinoType, the originators of the sans serif typefaces (STHei and STXihei) for display usage on the iPhone have restricted the typeface's distribution to Apple only. The fear of losing an expensive investment through copyright infringements has significantly reduced the willingness of designers to create new designs and distribute them.

The impact of these limitations on typographic commentary and the development of a typographic syntax has been severe. And with only a very small legacy of technical publications and other source material currently available it is hardly surprising that there is little typographic commentary and virtually no reference points for the establishment of a new typographic syntax. Therefore, solutions can only be proposed and tested. One possible methodology is the repurposing of what is already useful in Latin alphabet commentary. In one sense, this is not a unique idea. Untranslated Chinese technical publications such as, *The Craft of Type Composition* (1988) and, *The Practical Manual of Printing* (1994) follow a pedagogical structure that is almost identical to similar and fairly well established English language technical publications such as, *Introduction to Typography* (Simon 1945). Therefore the application of an existent Latin alphabetic syntax to Chinese typesetting is perhaps only taking this already established practice one step further.

The proposed syntax discussed in this paper has been taken from Jost Hochuli's publication, *Detail in typography* (Hochuli 2009). Here the author outlines the substance of his typographic syntax as: letter, word, line and column. However, in an attempt to further clarify the substance of Hochuli's typographic commentary this paper will dispense with his terminology and use the nominations of: typeface, size, leading and spacing. These principles have also been placed in a specific order where one principle builds upon the soundness of the preceding principle with the overriding goal of creating a desirable text image. The idea of a sound typographic syntax delivering a good text image is of fundamental importance to Hochuli, where he describes a text image as, 'the whole page should have a consistent, even, but not boring grey tonality,'

(Hochuli 2009, p. 23). This idea of a consistent grey tonality is usually best understood when typesetting is blurred to show degrees of grey tone (figure 1). For Hochuli, desirable text images can only be achieved when appropriate typefaces are chosen, correct type size choices are made, correct leading values used and when optimal character and word spacing is effected. Significantly the idea of the text image is also known to design practitioners in China itself, having its own distinct translation: 版面机理, literally meaning: *layout texture*.

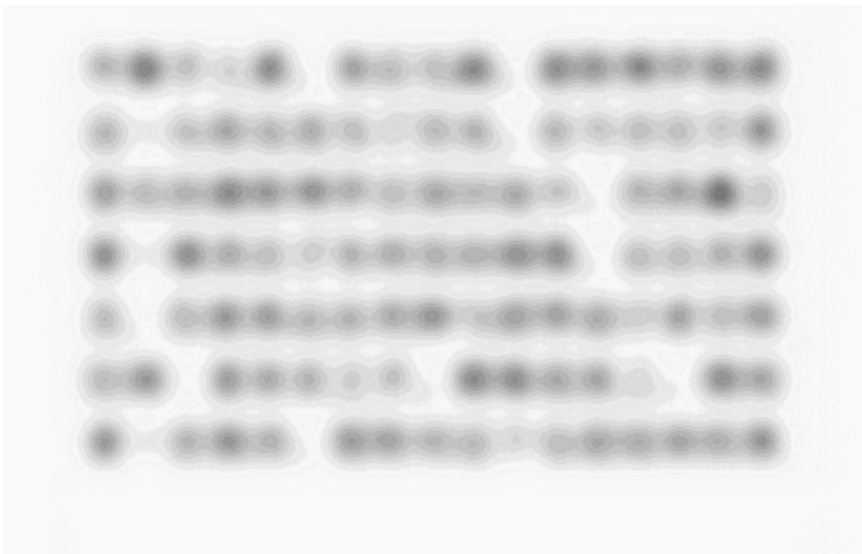


Figure 1 Typesetting sample showing a blurred Chinese language text image

Achieving good text images can be extremely difficult when setting Chinese characters. Especially when complex common-use words are placed in close proximity to simple common-use words. For example, words such as: *one* 一, *mouth* 口, *person* 人, are constructed from very simple stroke combinations, whilst other commonly used words like: *question* 提, and *probably* 概, are constructed from complicated stroke combinations (compare the first and second lines of the typesetting sample in figure 2). The following sections of this paper overview how each syntactical element of Hochuli's typographic syntax impacts on the construction of a desirable Chinese language text image.

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Figure 2 Typesetting sample indicating the occurrence of complex characters positioned next to simple characters

Typeface design

Typeface designs for both Chinese and Latin based alphabets number in the thousands but there still only remains a very small number that could be considered capable of delivering a good text image. Typographer and author, Robin Kinross in an article for *Baseline* defines a typeface in the following way, 'the best most sophisticated typeface cannot be represented by a single set of drawings or images, but consists of a series of modulations on some perhaps notional standard. Not only may a type then consist of a family of variants (italic, bold, and so on), but if it is to work properly at every size, it should consist of sets of variants of these variants,' (Kinross 1986, pp. 14-18). Latin alphabets boast perhaps a dozen or so typefaces that fit this definition whilst also delivering a verification of their efficacy from hundreds of years of usage. But in contrast, Chinese language has perhaps only one or two typefaces that might be considered in the same light. In fact, by Kinross's definition, virtually all Chinese typefaces cannot be classified as typefaces because they do not contain the overwhelming number of individual character designs that would be required to fulfil such requirements—which is hardly surprising since a complete alphabet of Chinese characters for one variation in one modulation would require approximately 14 000 unique designs.

Nearly all Chinese typefaces have been derived from calligraphic forms. The two dominant calligraphic styles of the nineteenth century were Kai, 楷 and Fangsong 仿宋 (figure 3). Kai, even when cut into metal maintained its strong calligraphic feel and whilst an astonishingly vibrant and beautiful typeface it must be considered as inappropriate for delivering a good text image. As a typeset font even its simplest characters are extremely complex and have proven themselves to be consistently difficult to read. In fact, Kai is often singled-out in controlled legibility testing as being extremely difficult to read. For example, from an engineering study on signage legibility: 'participants took less response time for the Hei and Ming styles than for the Kai style and exhibited higher accuracy for the Hei and Ming styles than for the Kai style,' (Chien-Jung Lai 2010, p. 306).



Figure 3 Typefaces in common usage

Fangsong, an immensely popular and useful typeface, avoids the calligraphic excess of Kai whilst still remaining a brush derivative. Publications of all kinds continue to use Fangsong, however its letterforms suffer from its dominant calligraphic characteristics: minimalised serifs, upward slanted orientation and its overriding historical referencing. Reading texts set in Kai and Fangsong are somewhat similar to reading English texts in Black Letter. It's extremely difficult to disassociate the content from the historical referencing of the typeface's design.

The typeface, Song, 宋 (figure 3) is a highly legible face derived from a distinct calligraphic style and from the process of Fangsong being cut into metal punches after the introduction to China of nineteenth century print and typesetting technologies. It might be argued that Song as a serified, non-calligraphic typeface, and produced in many weight and size variants is the only serviceable typeface available for Chinese typesetting. It has many similar qualities to Latin Alphabetic typefaces that have consistently delivered good text images, finely cut serifs, upward, vertical orientation and a distinct contrast between thick and thin strokes.

All gothic, or sans serif typefaces are removed from consideration because they are simply not as legible as serif typefaces, for example the commonly used sans serif typeface, Hei, 黑 (figure 3) works well for signage and headings but it is not a viable option for longer passages of text because it does not have serifs to aid its legibility.

There are many other Chinese typeface designs beyond the calligraphic and gothic forms. But most of these fall into display-type categories, such as Zongyi and Li, or they are contemporary designs directed more towards display typography, which by definition, place them outside the orthodoxy of legible typefaces for typesetting.

Typeface sizes and line leading spaces

As Chinese type is set within a grid framework (figure 4) it is difficult to separate the second syntactical element of size from the third syntactical element of leading. These two elements work in direct relationship with each other, the bigger the type size the bigger the leading and an incorrect or poorly chosen type size to leading ratio will always deliver a poor text image.

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Figure 4 Typesetting sample showing the grid structure of Chinese characters and punctuation

Generally this ratio has been established from calligraphic tradition with the optimum values of 1 to 1.75, where for example, a type size of 12 has a ratio leading value of 21. This ratio is inbuilt as a default into commonly used layout programs such as Adobe InDesign and Founder. When increased leading spaces beyond this ratio are applied to left-to-right reading Chinese characters they will deliver a disrupted text image. Chinese typefaces are particularly sensitive to this because individual character shapes are often 'soft' on their left and right edges whilst 'hard' or 'linear' on their upper and lower edges. Some common use words that demonstrate this are: *take* 拿, *matter* 事, and *on* 上.

Inter-word spacing

In respect to character spacing it is crucial to understand that the overriding and natural quality of Chinese characters is their square format. This then predisposes them to be typeset into a uniform grid of squares that can be applied to the entire width and depth of a typeset page (figure 4). This kind of typesetting is typical and in common usage. In fact, it resonates with much scribal calligraphic practice and if handled correctly it produces the only method of typesetting that can achieve professional results.

A text string (a single line of text) of square characters locked into a square grid predisposes characters to mono-spacing (in a similar way to how Latin alphabetic characters in a mono-spaced typeface like Courier behave) where all characters are

assigned the same amount of width space when typeset. The difficulty with mono-spaced Chinese characters is that its uniformity is often disrupted by the necessary inclusion of punctuation or Latin characters. Applying punctuation to text strings is a surprisingly difficult task to master. Often common Chinese punctuation marks such as the: ideograph period, ideograph comma, ideograph pause, brackets, question mark and exclamation mark will all occupy an entire character grid space creating continual visual breaks in text strings which are not desirable (figure 2). To alleviate this problem there are complex sets of punctuation rules that can be applied to setting to improve text images, namely: kaiming style (with two ideographic spaces at the beginning of the first line), kaiming style, quanjiao and hangmo banjiao (with two ideographic spaces at the beginning of the first line), quanjiao and hangmo banjiao, quanbu banjiao style, and quanjiao style. These rules are notoriously difficult to master as they are often mixed to create better results.

It is possible to improve disrupted text strings by replacing mono-spacing with proportional spacing. Mono spacing allocates an equal width space to all characters whilst proportional spacing allocates a varied amount of spacing to individual characters depending upon their design. Therefore proportional spacing will allocate a narrow letterform such as an (i) with less width space than a wider letterform such as an (m). The overall result of proportional spacing usually delivers a more evenly spaced line of characters. However, because this approach dismantles the square grid structure of text strings the practice is usually relegated to poorer quality typesetting compiled in non-layout based programs such as Microsoft Word.

Of course the observations made here in respect to the four fundamental syntactical principles are only made in brief. But it is clear by their application to Chinese language typesetting that the basis of a useful syntax can be established. However the basis of a Chinese typographic syntax is not complete until it has undergone the rigour of some kind of methodological extension by testing the syntax as a coherent whole against established designers' typographic practice. The path lies ahead.

References

English language

CHIEN-JUNG LAI 2010, 'An ergonomic study of Chinese font and color display on variable message signs,' *Journal of Chinese Institute of Industrial Engineers*, 25:4, pp. 306-313

HOCHULI J 2009, *Detail in typography*, Hyphen Press, London

KINROSS R 1986, 'What is a typeface?' *Baseline* 7, pp. 14-18

SHOUHUI ZHAO, 2009, 'Chinese Character Modernisation in the Digital Era: A Historical Perspective,' *Current Issues in Language Planning*, 6:3, pp. 315-378

SIMON, O 1945, *Introduction to typography*, Pelican Books, London

Chinese language

The Craft of Typesetting, 1988, 印刷工业出版社, Beijing

The Practical Manual of Printing, 1994, 印刷工业出版社, Beijing