Abstract

Confucius advocated the practice of ancestor worship cults, and for some Chinese families the edition of traditional genealogies, tracing back to the 13th century, continues to be one of the responses to remembering and honoring ancestors. This article focuses on a specific printing technique that uses wooden movable-type for the editions of genealogies. It is a detailed description of the various steps involved in the printing process: type carving, layout / composition of pages, and printing as seen practiced in Dongyuancun, a village in Rui’an township in Zhejiang province, mainland China. Additionally, the examination of past genealogies kept at the Gushan and Zhejiang libraries in Hangzhou shed light on the artistic and typographic value of these editions. However, the making of a genealogy book, its format, paper, layout, and kind of characters used, cannot be fully understood without an appreciation of the cultural, social, historical, and religious traditions associated with it.

Keywords
Chinese, genealogy, lineage (家谱 jia pu), (族谱 zu pu), wooden movable-type

Introduction

The ancestor cult is important to many cultures around the world. In China, for some families, the edition of a printed genealogy responds to this duty to remember and honor ancestors. This is often expressed in the introductions of genealogies via statements such as “Our ancestors define our origin while the clan indicates a common origin for its members… When the genealogy exists, the will to search the origin exists, the act of filial piety exists. This is why the genealogy is created, to build benevolence and virtue within the family.” Labor, care, and the use of durable materials transform family origins into tangible and legible memorial objects. Genealogies are the records of a family or a clan lineage.

I did fieldwork in Dongyuancun 东源村 (lat. 27° 44’ 48” N long. 120° 22’ 48” E), and Dananxiang 大南乡 (lat. 27° 42’ 59.4” N long. 120° 23’ 55.2” E) in Zhejiang province in 2009 and 2012. I observed the making of genealogies, interviewed local artisan printers and clients involved in the edition of current genealogies. In Hangzhou, I consulted and documented genealogies kept at the Zhejiang Library Gujibu, (Gushan Library) and in the rare book department at the Zhejiang Library on Shuguang Road. In (木活字本 mu huo zi ben) editions I have consulted, ancient and more recent ones, successive generations are recorded and ordered from the most ancient to the more recent, and each is given a numeral order: first, second, and so on. Regularly updated in some cases, a set of twenty books can compose a genealogy containing 20,000 names or more. The names of male members, and their wives and sons, are recorded with dates of birth and death. Daughters are mentioned only if they marry, and then their husbands’ names and places of origin are also given. Professions of any prestigious members of the family may also be mentioned, including professors, high-ranking civil servants, or individuals who passed imperial exams. Such information is usually consigned in the introduction of the genealogy, and is written by the family member in charge of the edition.

In Dongyuancun 东源村 Rui’an township in Zhejiang province, Mr. Wang Chaohui (born 1955) and his family have produced genealogies for twenty-seven generations. The following parts of this article will describe the drawing and carving of characters, as well as the composition of the text, its layout, and the printing process for the editions of (木活字本 mu huo zi ben) genealogies. This process is ancient—the first publications
Drawing and engraving of wooden movable type

Wang Chaohui carves around fifty characters a day on average to maintain his collection of roughly thirty thousand characters needed for the composition and printing of genealogies. The material used to carve wooden movable-type is the wood from the birchleaf pear tree (*Genus Pyrus*), which is clean-cut in small smooth blocks (fig. 1A, 1B, 1C). Depending on the type-size needed for the publication, the size of these blocks can vary. I observed two different type-sizes on a printed page (fig. 6), and the two corresponding point-sizes on a typeset form (fig. 2B). For the largest point-size (fig. 1A), blocks of wood have the following dimensions before being engraved with a character: their typographic heights are between 10.5mm (2p6) and 11mm (2p7); their widths also vary between 10.5 to 11mm; and their point-size is 12mm (2p10). The difference in typographic height and width is likely due to the cutting process used to produce these blocks. The smallest point-size is cut from blocks that have the same typographic height (10.5mm to 11mm) but their widths vary between 5.5 and 6mm and their point-size is 7mm (1p8).

Starting with these little cubes of wood (fig. 1A), the process begins by drawing the character in reverse on a face of the cube (fig. 1B, 1C). In the past this operation was done with a brush, however I did not see any evidence of brushes being used during my visit. It seems that Wang Chaohui uses fine black-ink pens to draw the reversed forms of characters.

During the 19th century, in the west, images or letterforms cut in wood were usually carved on the transverse section (or the end) of a woodblock for resistance purposes during the impression of large runs. In our case (fig. 1B), some characters have been traced parallel to the fiber orientation of the woodblocks. Because runs of genealogies usually range from twenty to one hundred copies (Xiaoman, 2005, p. 341), and its printing technique does not cause heavy pressure on these wooden characters, they do not need to be designed to support tons of mechanical pressure. The typographic style of the characters traced on these blocks correspond to what is now known as the “Song script.” The Song script (*Songti 宋体*) is a stylized writing system allegedly formed during the Song period (960-1279) when woodblock editions (banden) using this script’s style for carving characters played a significant role in disseminating texts in China (Wilkinson, 2000; MacDermott, 2005).

A specific trait of this script is its thin horizontal strokes and thick vertical strokes (fig. 1D). A second important characteristic that might have played a role in adopting it for publishing genealogies is the relative geometrical regularity of this script as all characters seem to fit in a square surface (fig. 1D). This quality is important because it facilitates the production of thousands of small, carved wooden characters necessary for typesetting genealogies. On the quantity of character usually needed, its style and point-size, Zhang Xiumin quoted by Xu Xiaoman wrote: [Genealogy masters] would travel to towns in Shaoxing or the Ningbo area, carrying their wooden type on shoulder poles, to print genealogies. Their loads of wooden types (muzi), also called 'wooden stamps' (mujin), contained only twenty-thousand-odd types, all made from pear wood. These types came in two sizes, big and small, though all were carved in the "Song" style (*Songti*)." (Xiaoman, 2005, p. 337).

Due to the relative geometrical regularity of the type, character width and height are constants—their fractions can all fit in a square of equal surface. This homogeneity is an asset for carving the characters. Multiple woodblock sizes are not needed within the same point-size. Constant widths and heights of wooden movable-type within a point-size also facilitate typesetting. For example, this allows for setting vertical columns of one character or horizontal lines without spacing or leading adjustments. Because the woodblocks' width and height are equal, the layout unit is also the size of the character most commonly used throughout the publication.

The carving process of the characters follow a certain order. An interpretive panel in the Wang house hall in Dongyuancun 东源村 provides the following information: “Engrave all the horizontal strokes of the character, then all the vertical strokes of the character, and then all the right-falling stroke, and finally cut away all the empty margins and corners of the character. Now a character written in reverse form will be prominent on the wood mould.” This routine is not always strictly observed. The method used by Wang Chaohui (fig. 1B) suggests that up to nine characters are carved concurrently. In some instance the corners have been carved but the outside of the strokes have not. When carving not one but a series of characters together, it is possible to think that the carving process is altered and follows a different sequence. This sequence might even differ from one carver to another.

Carving curves or straight lines or a mix of both requires different gestures and strategies. Specificities of certain characters—featuring more or less curves and straight lines—bring about different carving
strategies. Some production constraints, such as the requirement to maintain a sufficient stock of characters for typesetting relatively long text, might just as well impact rationalization of the carving process. “Group carving” several characters at once, instead of carving them separately, might save time. Moreover, carving a group of characters from a “type design view point” gives the carver a greater command of the consistency of the typeface as a whole. The carving tools Wang Chaohui uses are rudimentary (fig. 1C), and no optical device, such as a magnifying glass, supplements his eyes. A glance at the many trays filled with hand-carved characters in his shop is a humbling experience.

**Typesetting, layout**

When manually typesetting text in a Latin, Greek, Cyrillic, Arabic, or Hebrew alphabet with metal mobile characters, a typesetter has to pick characters one by one from a case to form a line of a given measure in a composing stick. When a line is complete, it is carefully placed from the composing stick onto a form. One by one lines are added until they compose an entire page. In the printing shops as seen in Dongyuancun, pages are typeset differently. Mobile wooden characters are stored face up in vertical rows (fig. 2A) on a wooden tray in which thin bamboo strips separate the rows. In the Wang’s house, several trays with thousands of characters are kept horizontally on tables. After picking one character or several, their placement on a wooden form (fig. 2B, 2C), made out of Chinese fir, follows right away. The typesetting and layout are simultaneously complete when all the wooden mobile characters needed for a given spread are tightly in place.

The layout (organization of the content) is predetermined by wooden forms in which wooden movable-types are inserted (fig. 2B, C). The size of a wooden form varies with the format of the paper sheets used for the genealogy. In Dongyuancun, forms used by Wang Chaohui were approximately 32.5 to 33 cm for the height and 50 to 50.5 cm for the width. Observations of several ancient genealogies from different time periods at the Gushan Library and the Zhejiang Library show that the layout of the text follows a similar structure. Only two kinds of forms are necessary for organizing the content on the pages. These two wooden-spread forms feature a central axis—dividing the spread into two equal surfaces—and a double outside frame on the periphery of the form. On some forms, four small incisions on the left and right side of the thick outside frame indicate horizontal divisions. On the horizontal parts of the frame no incisions are visible. Inside this frame are the two main fields reserved for typesetting.

Depending on the two main composition needs of a genealogy (introduction and generations), these fields are subdivided differently. Forms used for introductions feature columns on each side of the central axis (fig. 2B) while forms used for generations show a grid of vertical and horizontal divisions making an equal number of fields on each side of the central axis (fig. 2C).

I have yet to fully study all the details contained in the material documented at the Gushan and Zhejiang Library (both in Hangzhou), but my first observations indicate that the most important variable element in the layout of text across genealogies from different time period is the number of columns (fig. 3A-D) per page in the introductions. This variation is due to differences in format since narrower pages fit less columns than wider ones. A variety of size in paper sheets manufactured in different places at different times explain this variety of formats. However, what is interesting to notice is that the structure of the content across these genealogies follows the same organizational principles. This common organization is known as Su-style (蘇式 su-shi) and Ou-style (歐式 ou-shi)
Inking

Ink used for printing with wooden movable-type is soluble in water. It comes in dry solid blocks dissolved by friction. During the printing process, a brush is dipped in a bowl of water and then rubbed on the ink block to fill it with ink pigment. When the brush is filled with an adequate amount of ink, it is rubbed against the parts of the typeset form to be printed (fig. 4A). Depending on humidity and temperature, inking the form with the brush can be completed in either single or multiple applications. If the air is dry and hot, water contained in the ink evaporates quickly, resulting in a scant print. On the contrary, an overload of ink can clog the carved parts of the wooden movable-types, making non-legible imprints. The impact that atmospheric conditions have on optimal inking might also explain the sequence observed during the inking of the form. In all prints executed before me, the double outside frame of the form was always inked first and the movable-types inside these frames last (fig. 4A).

Printing

For editions of genealogies, Wang Chaohui uses Xuan or Lianshi papers and the printing process does not require a press but a brush (fig. 4B). The format of the sheets of paper for these editions is approximately 60 cm by 40 cm, and it is larger than the format of the wooden spread forms. The paper is manually placed on top of a wooden form. Placing the paper on the form is a delicate operation. First, a fold, parallel to the bottom length of the sheet and 5 cm from the edge, is made (fig. 4C). This fold holds the sheet above the inked spread form, avoiding its natural tendency to collapse in the middle due to gravity. Then, the master printer holds the sheet horizontally by the bottom corners. When placement over the form is correct, the bottom corners of the sheet are placed in contact with bottom corners of the form. When the paper touches the inked bottom corners of the form’s outside frame, the sheet is released and falls into place, covering the entire form. Sometimes (as shown in figure 4D), the upper corners of the sheet fold back towards the inside — this phenomenon tells us that the fiber orientation of the paper and width of the form are parallel. Finally, when the paper falls in place adequately, the next step is to put it in contact with all inked parts of the form. In order to do this, the master printer uses a special brush (fig. 4B) to press the back of the paper against all inked parts. In line with the inking process, the printing sequence follows the same order. Outside frames are pressed with a brush first, and the inside of the frame is pressed last (fig. 4E, 4F).

Other steps in the edition of genealogies

Concerning the compilation of information needed for the publication, who, for example, is in charge of this task and how is the collection of information completed? One line read in the exhibition hall of the Wang’s house gives an answer: "There were women masters for compiling family or clan trees." In “Preserving the Bonds of Kin,” Xu Xiaoman provides us with a
series of different answers. From a reading of his study, it is possible to state that depending on the lineage size and/or its wealth, different "publishing strategies" were undertaken. In some cases, lineage members could take the full compilation process in charge while others would hire unemployed scholars to do it. Sometimes compiling is a collaborative endeavor where a genealogy master collates drafts of the genealogy already gathered by family members, (Xiaoman, 2005).

For myself, many other questions attached to this tradition are raised. The field research I conducted in November 2012 helped answer certain questions related to the social, familial, and ritual context associated with the editions of genealogies. One of the most interesting experiences was observing the making of a new edition. I went to a family temple in Dananxiang 大南乡 (Zhejiang province) and saw four men living and working together until the edition was complete (fig. 5A, 5B). They were working 12-hour days because there were only two weeks to go till the ceremony for a completed genealogy edition took place in the temple.

In the temple, I was able to see the team organization and sense the atmosphere of the work. In this case, printers were not using wooden- but metal-movable type. While this did not change the entire process and the end result, some elements were different: the ink used was different; the way of inking the forms was different; and so was the way the paper was pressed onto the form.

Seeing the client interaction with the printers was something I had never read about because historical documentation is usually about the printers' food and accommodation. While I knew that some of the family's tasks included funding and collecting the content for the new edition, I had no idea how long it took. In this particular edition, the complete process including the manuscript preparation took two years. Two of the family members living in Dananxiang 大南乡 contacted members of other branches of the family disseminated all other the world in order to carry on the compilation of names, but also to collect the funds necessary for the edition. In this case, family members were asked to contribute a sum of 300-CNY (Chinese Yuan Renminbi). However, donations vary greatly depending on the wealth of the family members with the wealthier supporting the inclusion of the less wealthy in the genealogy. The previous edition completed five years before had collected a sum of almost 1,3 million CNY but a large part of it had been used to renovate the family temple in Dananxiang 大南乡.

The final ceremony, when the edition is complete, is attended by family members and printers, and includes prayer and offerings to the ancestors. In the printed genealogies, the master printer links the different generations by tracing in red lines (fig. 6). This is the last step in the production process. The ceremony ends with the distribution of the edition to selected family members representing each branch. Some copies are also stored in the family temple. Careful observation of selected past genealogies, especially their introductions, can also bring additional questions and findings about this long-lasting regional book culture. However, one point is already apparent.

The range of quality of printing and the different degrees of sophistication deployed in the making of these books is large. The two examples discussed below give an idea of the artistic and typographic value of these publications.

Some genealogies contain several styles of scripts. An example is 廖氏重修族譜 Liao shi chong xiu zu pu (1874 edition). Its pages feature a seal script, Zhuanshu (篆書), Lishu (隸書), Xingshu (行書), a cursive, and Songti (宋体) in three different sizes (fig. 7). While this diversity of script style is not uncommon in genealogies from the late Qing Dynasty, the Songti (宋体) is almost always used in the composition of introductions and generations regardless of the date of production of the genealogies.

Combining the Kaiti script (楷体) style with artistic imagery the 1850 edition of 廖氏重修族譜 Liao shi chong xiu zu pu contains in its first pages a spectacular series of six large characters.

Four of these characters (傳家至寳) are decorated with a plant. The peach tree blossom decorating 傳 (fig. 8A1, A2) represents the spring and matrimony (Koehn, 1952). The lotus flower visible in the character 宝 (fig. 8 C1, C2) represents the summer. The Chrysanthemum in 至 (fig. 8B1, B2) represents the fall, and the Chimonanthus Praecox (wintersweet, 腼梅 lamei ) visible in 寶
(fig. 8D1, D2) represents winter. The meaning of all four characters 傅家至寶 (the most precious treasure transmitted in the family) refers to the genealogy itself, and is perfectly complemented by the passage of time, regeneration, and the fleeting beauty of the flowers visible in each combination between words and image makes this example a particularly meaningful and visually engaging one. Considering the limited extent of this study (only sixteen genealogies were examined), these examples also suggest that much more valuable elements probably exist.

Conclusion

Studying a tradition over 800 years old, but still very much alive, is a humbling experience. Wang’s family has been producing genealogies since the early years of the Yuan Dynasty (1206–1368). (Interview with Mr. Wang Chaohui, 2009). An Annotated Zhejiang Genealogy Bibliography published, by Zhejiang Library in 2005, shows an uninterrupted practice of the edition of wooden movable-type printed genealogies (Hong, 2006). Field observations and interviews conducted in 2009 and 2012 also show that editions of genealogies are still being produced. Mr. Chen of Dananxiang 大南乡, born in 1970, was in charge of the 2012 edition of the Chen family genealogy but this edition used metal movable-types. In Dongyuancun Mr. Huang Laingping (黄良平), a client of Mrs Wang Xianzhu(王仙珠), was working with her on updating the list of names for the next edition of his family’s genealogy.

In an effort to keep the wooden movable-type in use, local government took actions. In 2010, it successfully applied to UNESCO and Wooden Movable-Type Printing of China was added to the list of intangible cultural heritage in need of urgent safeguarding (unesco.org, 2010). In 2012, Wang Falu (王法炉), responsible for the association of movable type printing in the city of Rui’an, commissioned to an artisan in Dongyuancun 1900 copies of the Story of the Teachings of Master Yongjia (永嘉大師證道歌) Yong jia da shi zheng dao. This wooden-movable character edition of Xuanjue’s text (665–713) took a year of labor by two persons to be completed.

Such ancient knowledge and practices are usually visited through revivals, re-enactments, visits of preserved monuments, pieces of art, or readings of literary accounts and quotes in historical studies. It is less usual to be able to meet a man or a woman still alive and practicing “an ancient knowledge” as their livelihood. In this particular case, the method and process involved have not been altered significantly by the passage of time. Political and technological changes of the past eight centuries have not interrupted this practice either.

Genealogists like the Wang family practice a process, several techniques, and a body of knowledge that is unique. In addition to developing and preserving specific technologies and tools adapted to their publishing activity, they respond to the continuing demand for genealogies from their people. Currently, both wooden movable-type and metal movable-type are used for the edition of genealogies but the present research could not determine in which proportion. Data from the Annotated Zhejiang Genealogy Bibliography published, by Zhejiang Library in 2005 shows that for genealogies produced between 1979 and 2005 less than a third have been printed with wooden movable-type (Hong, 2006). In addition to my observations in Dananxiang, another genealogy shop in Dongyuancun used metal movable-type. Carving manually wooden mobile characters and printing with them is a rare expertise supported by local government and mastered by a few individuals. Its viability as a commercial practice is uncertain.

In Dongyuancun, Wang Chaohui (王超輝 先生) works exclusively with wooden movable-type. Each year on average, he prints 3 copies of 5 different editions. With wooden movable-type or metal characters, the commission of such editions fulfills the ancestor worship cult and it can also be seen as a census method for increasingly disseminated clans. The process of the edition itself (collection of funds and names) is also the guarantee that in each generation, members from different branches of the clan communicate with one another and collectively preserve their cultural and familial heritage. Additionally, examples reported by Catherine Capdeville-Zeng (Capdeville-Zeng, 2009) show that lineage groups, as socially organized entities, can play an active role locally. They are able to challenge local authorities in social, cultural and political issues.

Economically speaking, the making of genealogies in villages is small and confidential, but its resilience and the continuous role it plays in the history of Chinese society is culturally and socially significant. Genealogy masters and editions of genealogies have emerged and benefitted from the interest and care Chinese
society has for ancestry. The production of genealogies responds to the duty of families to remember and honor their ancestors. Labor, care, and durable materials transform their sentiments into tangible and legible ritual objects. The content of these ritual objects is the record of constantly evolving lives and expanding families. As long as families and clans exist, genealogy masters should continue to record and produce the “private” memory and history of Chinese families.

References
http://doi.org/10.2307/2383008

Interviews
Mr. Wang Chaohui 王超辉 先生, August, 2009 and October 2012, Dongyuancun, Zhejiang.
Mrs. Wang Xianzhu 王仙珠, October 2012, Dongyuancun, Zhejiang.
Mr. Huang Laingping 黄良平, October 2012, Dongyuancun, Zhejiang.
Mr. Wang Falu 王法炉, Association for movable type printing in the city of Rui’an. October 2012, Dongyuancun, Zhejiang.

Biographical note
Clément Vincent is an Assistant Professor in the Visual Communication program at American University of Sharjah. In his work, Clément explores the integration of text in various contexts and situations, such as the urban environment, the page, and the image. Influenced by the ut pictura poesis doctrine of the Renaissance, his research investigates the principle of parallelism between the arts.