

Woodblock Printing
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Introduction

Long before Gutenberg invented the printing press in 1438, China had developed multiple printing systems of their own. Handcrafted block prints, and later moveable type, were able to fill a complex role combining religion, governmental control, literature and art, which spread printmaking from China and other parts of Asia through to the rest of the world. The history of block printing combines culture and the unique Chinese writing system which together had a profound impact on the social, political, and intellectual history of China as well as the dissemination of knowledge and literacy.

Wood block printing, sometimes referred to as xylography, is a relief printing technique that uses wood blocks to print text, patterns, or images onto a variety of materials such as paper or textiles. While seemingly simple and primitive, the methods used to create a block print showcase intricate artistry and craftsmanship.

While the technique itself seems quite uncomplicated, the history of woodblock printing and its effect on the social and cultural climate of China, was anything but.

First the Ingredients: Paper and Ink

China has had a long history with print technology, one that is not often explored or has even been ignored by the narratives coming out of the West.

Before wood print blocks, China had developed, or had in place, the three other main components of written communication: the text, the material where the characters were compressed - the paper, and the medium for making these text or illustrations visible - the ink. China had now created a system of technology for carving texts in relief - the wood block print. These techniques, when combined together allowed for printing, and literacy, to move from the elite to the masses.

However, the complex history of printing starts at its very origin. Records are not clear and often contradict each other. The official origin of woodblock printing dates vary, with many believing that this style of printing started in the early years of the Tang Dynasty. Some scholars,

such as Carter believe it started much earlier during the Han times where woodblock printing was used to print images of criminals to be arrested (Carter, 1925). There are no official histories about woodblock printing before the Tang. The oldest existing wood block print, the *dharani sutra* was discovered during an excavation of Xi'an and was dated to 650-670AD - during the Tang Dynasty (Pan, 1997).

Demand and Supply

Originally, paper and ink were pressed to marble pillars and the parts on relief were pressed onto the paper (called a stone rubbing). This was later changed to rubbings done via wood block. The demand for these printed materials was initially limited to well off individuals, higher class, and members of the imperial. Soon books were a sign of cultural distinction. The quantity of prints originally being produced for these groups was reasonable and scribes could keep up with the demand. However, with the introduction and spread of Buddhism, demand for text and charms was greatly increased to members of a variety of classes and thus the need for accelerated levels of printing.

The earliest completed printed woodblock document, still in existence today at the British Library, is *The Diamond Sutra* which was produced by Wang Jie in 868 during the Tang Dynasty (618-907) (Gunaratne, 2001) it was discovered in the Duhuang Cave Temples in Western China. During this Dynasty, much of the woodblock prints depicted religious themes. Many of the texts were Buddhist including prayers printed onto paper and carried by believers. As described by Innis, "*In China Buddhism found an efficient medium of communication in paper and emphasis on the importance of a knowledge of writing. Characters were cut in reverse on wooden blocks, reproduced on paper in large quantities, and sold as charms.*" (Innis, 1950).

Text was first written in ink on a sheet of fine paper, then the written side of the sheet was applied to the smooth surface of a block of wood, coated with a rice paste that retained the ink of the text, and then an engraver cut away the uninked areas so that the text stood out in relief and in reverse. To make a print, the wood block was inked with a paintbrush, a sheet of paper spread on it, and the back of the sheet rubbed with a brush. (Tsien, 2011). One researcher, Needham in 1986 notes that the type of wood most commonly chosen for printing blocks included pear, jujube, catalpa, and sometimes apple, apricot or other fruit trees with similar qualities. Boxwood, ginkgo, and Chinese honey locust were also used (Needham, 1986). Often times images and text were combined together on a single block and pressed onto paper – a process called blockbook printing. Each page of a book required a new block to be carved. When these stamps were complete, an expert could print more than one thousand sheets per day. As Innis points out, wood block carving involves enormous skill due to the complexity of the characters and was labor intensive which implied the need for government support (Innis, 1950).

Unfortunately, the spread of Buddhist texts did not promote widespread literacy and education, either as consumers or producers of text. Woodblock prints were often produced to be read aloud, not for silent reading, and the traditional oral nature of Buddhism continued. According to Rawski, “In China, literacy was not required [for printing work] because the texts, written on thin sheets of paper, were pasted into the blocks. Carving might require some skill, but other operations such as inking and pulling the sheets could be done by virtually anyone. A local gazetteer of Ma-Kang, a printing center in the Pearl River delta of Kwangtung, notes that “women and children can all do it; men only carve the text on the blocks, according to the handwritten manuscript. The rest is done with female labour. Because of their cheapness, the books go everywhere.” (Rawski, 1985).

Different classes engaged in printing. As time progressed Buddhism became more suppressed and Confucian philosophy reemerged. Soon examinations were established based on the Confucian philosophy and woodblock printing could be used for mass reproduction of standardized textbooks (Perkins, 1999) needed to prepare for these examinations. These examinations were important as they were used to select officials for the imperial bureaucracy. Woodblock was also used to copy legal texts and laws to communicate to the masses and printing moved from religious education to Confucian education and state propaganda (Goodrich, 1963). In 932, Prime Minister Feng Tao first sponsored the reproduction of classics through large scale block printing. He directed the printing of the 11 Confucian classics that filled 130 volumes - a task that took over 20 years (Gunaratne, 2001) and which some research considers “the world’s first official printed publications” (Temple, 1986). There were strong motivations behind the invention of paper and printing - most forcefully for religious power and social advancement. Originally printing was designed not to spread knowledge, but to monopolize it through standardized texts. Government seals accompanied approved works.

During the Sung Dynasty (960-1279) the new sociopolitical climate allowed woodblock printing to extend to producing books on the classics, literature (including poetry), playing cards, paper money as well as illustrations, changing from one colour to two colour print (Gunaratne, 2001) with beautiful types and of a high quality. Much of this was under State control as they were the largest publisher at the time. This period also saw the development of public schools and the establishment and growth of the examination system increased the need for printing (Perkins, 1999). These factors, in addition to availability of inexpensive printed books helped to spread literacy - even into rural areas. Lee (1991) tells us that in 1005 Emperor Chen-tsung spoke to the principal of the Imperial Academy and asked how many woodblocks had been carved for printing with the principal responding:

“ At the start of the dynasty (960) we had less than 4000 woodblocks. Now there are over one hundred thousand, covering classics, biographies and commentaries. When I was a student,

only a couple out of one hundred Confucian scholars could own a book of classics, because scribing was very time-consuming. Now we have the woodblocks of many titles and every family, no matter officials or commoners can own their books. This is unprecedented and is really fortunate for scholars.” (Lee, 1991:58). Pan, in 1997, noted that these printing techniques played a huge role in emancipating the minds of people and accelerating the spread of knowledge (Pan, 1997) and literacy.

Slow Movement

Moveable type was invented in China during the 11th century, however printing using woodblocks remained dominant in East Asia until the introduction of lithography and photolithography in the 19th century. Chinese characters are composed of a vast number of ideograms, pictograms, and phonograms which require over 80,000 symbols, posing quite a challenge for printers to categorize into molds for moveable type. In contrast, European alphabets with a limited number of characters caught on much more quickly.

Some still believe that wood block printing was not the forefather to moveable printing press. Some authors, such as Febvre and Martin (1976) believe that “the technique of the wood cut did not in any sense inspire printing, which was the result of a quite different technique”. Others believe that block books had nothing to do with the “dissemination of literature. It was merely an extension of the single leaf block print aimed at providing the illiterate with visual concepts of the Christian religion.” (Clair, A. 1976). But as the writers in *Agent of Change* (2007) points out, “Was not the first book printed by Gutenberg with movable type the Bible? ...How was the intention of block book printers different from that of those using movable type?”

So while Gutenberg has been credited with the first printing press, movable type is thought to have been invented much earlier. As goods and information passed from Asia through passages such as the Silk Road onto Europe, it is believed that block printing and movable type from Asia influenced European “inventions” many, many years later. Regardless of its impact on European literacy, it played a needed role in the development of society in China. Conversations continue to exist and the complex role of woodblock printing in the evolution of literacy in China and its role in the world may never truly be known for certain.

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