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The history and characteristics of traditional Korean books and bookbinding

Keywords

Korean books; bookbinding; paper; woodblock; movable type

Until the middle of the twentieth century the history of Korea had not been as well known in the West as that of China and Japan. Sometimes, in museums and libraries outside Korea, Korean artefacts have been mistakenly placed within Chinese or Japanese collections. Such confusion has occurred because all three neighbouring countries share much common culture and religion.

Ancient Chinese has been used in Korea and Japan in all official, educational and scholarly documents for a long time even after the invention of native characters. It had been used as a written language in Korea until the introduction of *idu* (吏讀) script in the sixth century.¹ All East Asian books share a similar cultural heritage, not only regarding the style of the book but also the contents, making it more difficult to distinguish the true origins of Korean books and art works. Nonetheless, there are several factors that differentiate Korean, Chinese and Japanese books and make each of them unique to their own culture. They may be subtle but should not be ignored. This research aims to present some specific nuances that may be helpful when working with Korean artefacts.

This study discusses the development of Korean bookbinding in relation to the evolution of bookbinding in China, where most innovation originated. The main part of this article presents several factors that distinguish Korean books from those of its neighbours; it also sheds some contextual light on their emergence. It looks at the bindings, covers, paper and printing techniques of Korean books and sets them in a historical context.

Chinese precursors of Korean bookbinding

Several writing materials such as wooden tablets, smooth slips of bamboo and silk were in common use in East Asia before paper became the main medium for books. The Chinese, as well as Koreans and Japanese, have no record of using animal skins as a support for writing.² Cai Lun (蔡倫, ?–121?) is commonly believed to have invented paper around 105, but it has been recently established that paper made of hemp (*Cannabis sativa*) fibre was used as early as the first century BC. Cai Lun could be credited with the manufacture of high-quality paper made from paper mulberry (*Broussonetia papyrifera*) fibre.³

It can be said that East Asian bookbinding has been continually evolving. However, a chapter in bookbinding history does not mean that a selected style started, flourished and vanished over a certain period of time to be replaced by different styles. What can be observed is a dominance of chosen formats, usually because of their

1 The term '*idu*' in this article refers to a group of various archaic writing systems representing Korean phonology through Chinese characters.

2 E. Martinique, 'Chinese Traditional Bookbinding: A Study of its Evolution and Techniques', *Asian Library Studies* 19 (1983): 10.

3 The remnants of paper were found in Shenxi in 1957 and have been dated no later than the period of Wu Di (武帝 ruled 140–87 BC). T. Tsien, 'Raw Materials for Old Papermaking in China', *Journal of the American Oriental Society* 93 (1973): 511, 513. See also X. Zhentang and Y. Ding, *A Manual of Traditional Restoration Techniques*, trans. David Helliwell, 'The Repair and Binding of Old Chinese Books', *The East Asian Library Journal*, VIII (1998): 33.

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4 Martinique, 'Chinese Traditional Bookbinding', 3.

5 They include the earliest attested manuscripts of existing texts such as the *I Ching* (*Yijing* 易经), *Tao Te Ching* (*Daodejing* 道德经), *Strategies of the Warring States* and works of *Gan De* (甘德, active 4th century BC) and *Shi Shen* (石申, active 4th century BC). The revised edition of *Mawangdui* texts was published in full-form characters with photographs of the manuscripts in *Guojia Wenwuju Gu Wenxiao Yanjiushi* (国家文物局古文獻研究室, Chinese Ministry of Education Research Group on Ancient Literary Sources), *Mawangdui Hanmu boshu* (馬王堆漢墓帛書, *Silk manuscripts from the Han tombs at Mawangdui*) Vol. 1 (Beijing: Wenwu Chubanshe, 1980–1984), 4.

6 Hunan Sheng Museum, 'Changsha Mawangdui er sanhao hanmu fajue jianbao' (长沙马王堆二三号汉墓发掘简报, Tombs two and three of Han dynasty at Mawangdui, Changsha: Report on excavation) *Wenwu* 7 (Beijing: Wenwu Chubanshe, 1974), 39–48; M. Loewe, *Ways to Paradise: The Chinese Quest for Immortality* (London: Unwin Hyman, 1979), 29–46.

7 C. Chinnery, 'Bookbinding', <http://idp.bl.uk/education/bookbinding/bookbinding.a4d> (accessed 7 February 2007).

8 Martinique, 'Chinese Traditional Bookbinding', 5–6; Tsien, 'Raw Materials', 331.

9 F. Starr, *Korean Buddhism: History, Condition, Art: Three Lectures* (Boston: Marshall Jones Company, 1918), 66–96; J. Portal, *Korea: Art and Archaeology* (London: British Museum Press, 2000).

10 The process started with Damjing (曇徵, 579–631), a Korean Buddhist monk who introduced papermaking to Japan in 610; Tsien, 'Raw Materials', 331. Forced relocation of Korean artisans took place 'during the Japanese invasion of 1592–8, many technicians and their fonts were taken back to Japan which was starting its own movable-type printing' (Tsien, 327). On the other hand, western paper equipment was brought to Korea from Japan by a Korean government official in 1884; S. Lee, *Urihanji* [Korean Paper] (Seoul: Hyeonamsa, 2002), 82.

convenience and durability, in relation to the general development of bookbinding. In historical references, the techniques and materials used for binding were rarely mentioned, being considered too common to note, as opposed to those related to mounting paintings or similar 'higher' genres.⁴

Before paper was widely used, manuscripts were written on a wide range of materials, ceramics, shoulder blades of oxen or buffaloes, turtle shells, various wooden materials and silk. The earliest important group of Chinese texts on silk are those from the Mawangdui excavation (馬王堆) found at the site where, at the two saddle-shaped hills, tombs from the Western Han dynasty (206 BC–AD 24) were located.⁵ The Mawangdui Silk Texts (*Mawangdui Boshu* 馬王堆帛書) dated around 183 BC, are Chinese philosophical and medical works written on separate silk leaves.⁶

The earliest bound manuscripts in China were written on wooden or bamboo slips bound together with strings called *jiance* (簡策). The slips were laid down flat, each of them parallel to each other so that the manuscript could be properly read when unrolled. For storage and handling the bound slips would be rolled up.⁷ The wooden slips were used for writing during the Shang-Yin dynasty (1766–1123 BC). By the time of the Han dynasty (206 BC–AD 220) wooden slips ceased to be the predominant writing material, although they were still in use until the Northern and Southern dynasties (420–588). Wooden slips were gradually replaced by silk and paper over the Han dynasty as the main writing materials. Both were more convenient to carry and store than wood even though silk was more expensive.⁸

Evolution of Korean bookbinding

China's influence on Korea and Japan greatly predates and continues through their emergence as independent, fully functional countries. Numerous researchers from Frederick Starr to Jane Portal have attempted to define Korean art and to explain how its artefacts differ from those of China and Japan.⁹ It is possible to see differences in specific cases, although often the differences are very small, and it is not an easy task for an audience unfamiliar with Korean artefacts to grasp their unique qualities. The many significant similarities in both culture and structure of these three countries have been intertwined thanks to their geography, and the importance of Buddhism and Confucianism. Korea was sometimes inside, sometimes outside the Chinese tributary system; it was occupied by Japan from 1910 to 1945 and despite the complicated political relationship between Korea and Japan there was a regular flow of Korean artisans to the Japanese islands.¹⁰

The development of Korean books demonstrates how new crafts and technologies evolved using locally available materials, responding to specific social and religious demands. For this reason, even though Korean bookbinding followed the evolution of its Chinese predecessors, details of Korean book formats, book paper and printing techniques have a distinctive style (Table 1).

Scroll (Korean: *gweonjabon* 卷子本 or *gweonchukjang* 卷軸裝; Chinese: *juanzhouzhuang* 卷軸裝)

Silk scrolls in China before the Han dynasty were mostly made in standard segments, with each piece of silk a similar size of two feet

Table 1. Key dates in the evolution of Korean bookbinding.

Main periods	Event	Main works
Three Kingdoms 57 BC–668 AD	Papermaking began (around third century)	A piece of paper found in an ancient tomb, <i>Chehyupchong</i> (108 BC–313 AD)
North and South States 668–892 (Unified Silla 668–935 Balhae 698–926) Goryeo 918–1392	Scroll format began	The oldest extant printed manuscript, ‘Dharani Sutra’ (751)
	Woodblock printing	
	Concertina binding began (mid-Goryeo)	‘Lotus Sutra’ (1388)
	Whirlwind binding began	
	Butterfly binding began	‘Shurangama Sutra’ (1370)
	Wrapped-back binding began	
Joseon 1392–1910	Side-stitched binding began	The earliest extant book printed with metal type, ‘Selected Teachings of Buddhist Sages and Zen Masters’ (<i>Jikji</i>) (1377)
	Movable type invented	
	Side-stitched binding predominant	
Japanese occupation 1910–1945	Western binding began	‘Instruction of <i>Hangul</i> ’ (1446) ‘Korean Encyclopedia’ (1798)

two inches high and about 40 Chinese feet long.¹¹ When there was not enough text to fill the whole length, the roll was cut where the text finished. If more space was required to complete the book, additional silk was sewn to the scroll. At the end of a scroll, a wooden dowel or bamboo slip was attached, possibly a remnant of the earlier bound wooden or bamboo slips.¹² A simpler explanation suggests that a dowel made it easier to roll and unroll the scroll.

Paper became the predominant writing material during the third century. The scroll remained a major style of manuscripts through the Tang dynasty (618–917).¹³ Extant scrolls made in this early period are very rare. The Diamond Sutra (858) in the British Library collection presents a particularly good example of scroll format, being also the earliest dated book woodblock printed in China.¹⁴ The Diamond Sutra scroll consists of seven sections; each section was printed from a single block, together they form a 5m-long scroll.

Scrolls in Korean are known as *gweojabon* or *durumari* (hangul: 두루마리). As in China, the scroll was the earliest book format in Korean traditional bookbinding used widely until the Goryeo dynasty. The remark by Uicheon (義天, 1055–1101) in *A Collection of Writings by Buddhist Teacher Daegak* (Korean: *Daegakguksa moonjip* 大覺國師文集) that, ‘Our ancestors produced 5000 scrolls and secretly stored them’ implies that scrolls had existed as written documents for a long time.¹⁵

Originally, a Korean paper scroll would have been made by adhering a number of paper sheets to form one long sheet without a backing (Fig. 1). Some of the early scrolls were later lined with a paper backing as a repair. A dowel was attached to the end of the scroll and a narrow bamboo slip to the right edge. A cord in the form of woven ribbon was inserted next to the bamboo slip, at the centre of the paper, to be tied around the rolled scroll. Numbers were written, or inscriptions were stamped or signed where the sheets of paper were adhered for correct collation when the scroll was assembled and to avoid confusion in case the sheets became detached. Attached to the right edge of the verso of the scroll, there was an additional rectangular paper cover called *checkgaewe* (hangul: 책가위) or *pyo* (Chinese: *biao* 標) to protect the scroll. At the end, a cord was fastened to tie the scroll. The *checkgaewe* was an undyed

11 Martinique, ‘Chinese Traditional Bookbinding’, 11. In Chinese historical literature the Han foot (Chinese: *chi* 尺), is given as equalling 0.231 metres (or 9.095 inches); see Yu Huan (魚豢), *Weilue* (魏略, *Brief Account of the Wei Dynasty*) composed between 239 and 265; A.F.P. Hulswé, ‘Han measures’, *T’oung pao*, XLIX, Livre 3 (Leiden: Brill, 1961), 206–7. A draft of a new translation by J.E. Hill is available at <http://depts.washington.edu/silkroad/texts/weilue/weilue.html> (accessed 20 May 2008).

12 W. Li, ‘Chung-kuo Shu-chi chuang-ting, chih pien-chien’ [A Sketch of the Evolution of Chinese Bookbinding], *T’u-shu-kuan-hsueh chi-k’an* [Library Science Quarterly] 3 (1929): 543, after Martinique, ‘Chinese Traditional Bookbinding’, 11.

13 Helliwell, ‘Repair and Binding’, 34; Martinique, ‘Chinese Traditional Bookbinding’, 14.

14 All the sections of Diamond Sutra can be viewed online, <http://www.bl.uk/onlinegallery/tp/sutra/accessible/introduction.html> (accessed 4 January 2008).

15 Uicheon(義天), *Daegakguksa moonjip*(大覺國師文集), chapter 4, after H. Cheon, *Hanguk Seojihak* [Korean Bibliographical Studies] (Seoul: Mineumsa, 2006), 101.

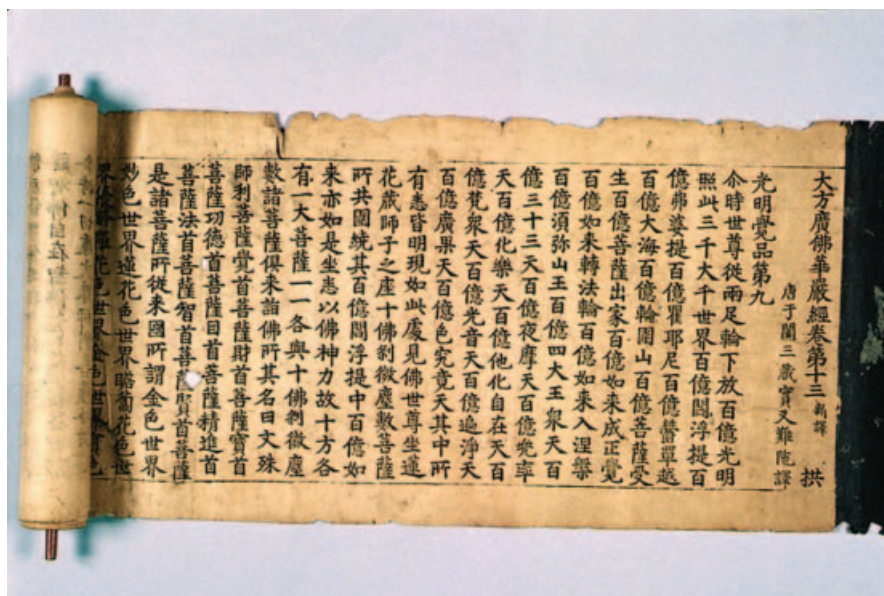


Fig. 1 Avatamsaka Sutra (Korean: *Chojobon daebanggwangbul hwaeomgyong jubon* 初雕本大方廣佛華嚴經周本), 11–12th century, ink on paper, 28.5cm × 46.3 (× 24 sheets), Samseong Museum of Publishing. © Cultural Heritage Administration.

paper or silk for scrolls of general purpose, but for Buddhist scrolls it was made of dark blue or brown coloured paper. In the Chinese tradition, it was made of purple gauze lined with paper or thin brocade. The cord tied to the bamboo slip (Korean: *pyodae* 標帶), was generally made of either undyed or dyed monochromatic silk or hemp, but for more valuable scrolls, three-colour silk was used. The sheets of paper were coloured yellow using extract from the outer bark of the Amur cork tree (*Phellodendron amurense*, Korean: *hwangbyeok* 黃蘗); this acted both as an insect repellent and as decoration.¹⁶

As in China, the label was attached to the end of the dowel, the colour of which was part of a classification system used in Chinese imperial libraries, as were the colours of cords and specific ends attached to wooden dowels.¹⁷ For example, the classics of Confucianism were tied with yellow cord and had white ivory dowels and red ivory labels, while documents on history had jade-coloured cord, blue ivory dowels and green ivory labels. The same system was used in Joseon dynasty Korea.¹⁸

The existing examples of early Korean scrolls were made in the Unified Shilla period and are exclusively Buddhist texts. Shilla established peaceful relations with the Tang dynasty. Between the eighth and ninth century many books, works of art and luxury goods were imported from China. Korean monks and students travelled to China to study Buddhism and Confucianism. Shilla, as well as Balhae (698–926, a kingdom in southern Manchuria founded by former Goguryeo and Tungusic people) maintained active contact with Japan.¹⁹

Buddhism was the dominant religion at this time extending from the Court to the general populace. During this time Woncheuk (圓測, 613–696) travelled to Tang China and translated sutras while Hyecho (慧超, 704–787) went to India and wrote *Record of a Journey to*

¹⁶ Cheon, *Hanguk Seojihak*, 101–3.

¹⁷ Martinique, 'Chinese Traditional Bookbinding', 12–13.

¹⁸ Cheon, *Hanguk Seojihak*, 103.

¹⁹ Portal, *Korea*, 68–9.

the Five Kingdoms of India (Korean: *Wang ocheonchukguk jeon* 往五天竺國傳).

The earliest known extant woodblock printed Buddhist text on a paper scroll, Dharani Sutra (Korean: *Mugujeonggwang daedarani-gyeong*, 無垢淨光大陀羅尼經), found during the excavation of the Sokka pagoda (釋迦塔, Sakyamuni pagoda) at Bulguk temple (佛國寺) in Gyeongju in 1966, has been dated to before the construction of the temple in 751. Other important examples include Shilla Avatamsaka Sutra (Korean: *Shilla baekjimookseo daebanggwangbul hwaeomgyeong*, 新羅白紙墨書大方廣佛華嚴經, 755), and Shilla Diamond Sutra (Korean: *Shilla hwangjimookseo gumgangmyeong-gyeong*, 新羅黃紙墨書金剛明經, 858).

As with Chinese scrolls and bookbindings, Korean scrolls became reserved for paintings or calligraphy rather than for manuscripts with the emergence of later bookbinding styles. Occasionally, the scroll format was still represented in court documents in the early Joseon dynasty, an example of which can be seen in the handwritten scroll on paper, Aristocratic Titles Awarded by King (Korean: *Jinchungguiganguk won jong gongshinlok gwon*, 陳忠貴開國原從功臣錄券, 1395).

Chinese *pothi* binding (Punjabi: *pothi*; Chinese: *fanjia zhuang* 梵夾裝)

The Indian *pothi* consisted of several sheets of dried talipot palm leaf cut into narrow rectangular shapes and stacked on top of each other.²⁰ The leaves were bound with a single string or with a couple of strings that passed through holes either through the middle or near both ends of the manuscript. The wooden boards were placed on both sides of the book to protect the manuscript from physical damage. Even though there are no records of *pothi* binding being used in Korea, the potential impact this style had on the development of bookbinding in East Asia makes it necessary to analyse its structure briefly to better understand Korean bindings.²¹

The talipot palm leaf was not readily available in China, where it became naturally replaced by wood and bamboo, materials already used for writing in the traditional format of bound slips. Since wooden and bamboo slips are not nearly as thin and flat as the talipot leaf, it was not convenient to stack them.

When the first Buddhist *pothi* books were introduced to China in the third and fourth centuries, paper had already been used for two to three hundred years. It still took almost three hundred years for Chinese artisans to make their own *pothi*. The reason might have been the different qualities of paper which were neither suitable nor durable enough for *pothi* binding. It has been suggested that a binding technique similar to *pothi*, a stack of loose leaves without thread, had existed in China, but it seems it had never become a common format.²²

There are many Chinese examples of paper books in *pothi* format in the Dunhuang collections at the British Library. Chinese *pothi* are wider than the Indian version, have one hole for the string and lack the protective boards.²³ It is hard to say exactly how much impact the *pothi* had on the development of Chinese bookbinding, but it

²⁰ *Pothi*, the Punjabi form of the Sanskrit *pustaka* ('book') in this article is used according to Chinnery (see note 7), and describes a bound palm-leaf book.

²¹ The *pothi* palm-leaf manuscripts had been popular in India, Ceylon, Nepal, Burma, Thailand, Java and Bali; Martinique, 'Chinese Traditional Bookbinding', 16–17. For an example of a Tibetan loose-leaf *pothi*, found in Dunhuang Library cave bound in bundles along with manuscripts in other languages, see *IDP Newsletter* 17 (Winter 2000/1), http://idp.bl.uk/archives/news17/idpnews_17.a4d and *IDP Newsletter* 29 (Spring 2007) http://idp.bl.uk/archives/news29/idpnews_29.a4d (accessed 21 May 2008).

²² Chinnery, 'Bookbinding', 11; see also <http://www.org.ncl.edu.tw/rarebook/name.htm> (accessed 21 May 2008).

²³ Chinnery, 'Bookbinding', 11–13.

certainly played an important role as one of the formats sharing the concept of separate leaves held loosely together.

Concertina binding (Korean: *jeolcheopjang* 折帖裝; Chinese: *zhezi zhuang* 摺子裝, *jingzhe zhuang* 經摺裝)

It is believed that the concertina binding or folded sutra binding appeared or even had already been widely used in late Tang dynasty China.²⁴ The origin of the style is not known, but it extensively influenced the production of Buddhists texts in Southeast and East Asia.

There are different opinions regarding the origins of the folded binding. Most modern researchers seem to believe the fold binding had derived from the scroll; others have assumed that it originated from Chinese *pothi*.²⁵ The scroll as a writing support had obvious inconveniences. It was a cumbersome, time-consuming task to unfurl it for reading and then roll it back for storage and transportation. The notion of the concertina binding being derived from the scroll format of Buddhist texts gave the binding its other name, 'the folded sutra binding'. The theory that sees the *pothi* style behind the invention points to the characteristic of attaching and folding separate leaves in order to avoid losing parts of the fragile structure. As a result, Chinese *pothi* books would have determined the physical appearance of a concertina binding.

There are certain difficulties regarding the *pothi* theory. First, the *pothi* books in China were never very popular even though Buddhist scholars sometimes used both the Chinese *pothi* format and the concertina format.²⁶ Second, the nature of the concertina binding seems to have already been in existence in Chinese paper scrolls where several leaves were glued to each other, eventually forming a long structure recreated later in folded sutra binding. The notion of *pothi* as a possible source of the folding process does not cover the main controversy—the leaves of a *pothi* book were stacked one on top of another instead of facing each other as in a folded sutra binding, i.e. in the *pothi* stack recto faces verso while in concertina binding recto faces recto and verso faces verso. Yet we should notice a strong possibility that the 'mobility' of the *pothi* book might have inspired the search for a similar solution within the scroll format.

It seems most likely that the concertina binding evolved directly from the scroll. The simple process of folding the scroll back and forth forms separate pages, enabling readers to flick easily through the text without laborious unrolling and rolling. It does not seem possible at present to reconstruct clearly the transformation from scroll to concertina binding, but it is worth pointing out the existence of concertina books where the writers and printers show no concern for leaving spaces (margins) for folds as if the text was written on a scroll.²⁷ There are also well-known concertina recreations of former scrolls done in a similar manner; two examples of which are the set of seven chapters of the Lotus Sutra found in Shanghai, and the collection of fragments of a commentary on the Lankavatara Sutra found in Dunhuang, now in the British Library.²⁸

Korean concertina binding style was originally used in the middle of the Goryeo Period and preserved through the Joseon dynasty. A representative concertina binding is the hand-copied sutra (Korean:

24 Martinique, 'Chinese Traditional Bookbinding', 20; Chinnery, 'Bookbinding', 17; Helliwell, 'Repair and Binding', 34.

25 B. Yoo, 'Joogkook koseo jang-junggo—A Study on the Binding Style of the Old Books in China', *Seojihak Yeongu* 19 (2000): 13–14.

26 Chinnery, 'Bookbinding', 17–18; Yoo, 'Joogkook', 13–16.

27 Yoo, 'Joogkook', 23–4.

28 Martinique, 'Chinese Traditional Bookbinding', 21.

sagyong, 寫經). This genre of illuminated, handwritten copies of Buddhist sutras executed during the Goryeo period was highly appreciated for its supreme technique and artistry. Hand-copied sutras were usually produced with high-quality paper, dyed an indigo blue and written or illuminated with gold or silver. In some specific cases white or yellow paper was used in both scroll and concertina formats.

Goryeo illuminated manuscripts were held in great esteem in China and Japan. In Muromachi Japan (1336–1573), Korean sutras were highly sought-after treasures. They were also demanded as a tribute by Yuan China (1271–1368). Specific accounts in the 'The History of Goryeo' (Korean: *Goryeosa*, 高麗史, 1396) describe Korean sutras of the Goryeo period being sent to China.²⁹ Most of the extant examples are now stored in Japanese Buddhist temples and are rarely seen.³⁰

From the Joseon period, Buddhist sutras continued to be the major subject for concertina bindings. Gradually, when Confucianism became predominant in official philosophy and education, Buddhism lost some of its influence and the large production of sutras dramatically decreased.

The concertina binding was also often used for rubbings and albums of calligraphy and paintings called *seohwacheop* (書畫帖). Examples include, 'Collection of Joseon Rubbings' (*Haedongmyeongjeok*, 海東名蹟, sixteenth century) and 'Calligraphy Collection by Kim Jeong-hui' (*Kim Jeong-hui pilseocheop*, 金正喜筆書帖, mid-nineteenth century), a study of Han dynasty characters from bronze mirrors.³¹

Whirlwind binding (Korean: *seonpoongyeop* 旋風葉; Chinese *xuanfeng zhuang* 旋風裝, *longlin zhuang* 龍鱗裝)

The whirlwind binding may be the most confusing bookbinding style, not only because the name does not clearly indicate the style but also because there are several different opinions about what this binding format actually means. Because there are not enough practical examples, researchers can only guess at its form using descriptions in historical sources. Since books in this binding style were generally very rare, it is likely that it was a transitory style applied only for a short period, possibly around the Tang dynasty.³² A large percentage of books in the whirlwind binding might have been rebound later during the Song dynasty (960–1279) when many other binding styles had developed.

It is worth noting that the scarce historical sources that mention whirlwind binding are rather obscure in their descriptions, to the point where occasionally the same text can lead to different interpretations and simple misunderstandings. There is general agreement that the name of the binding has something to do with wind and some researchers have interpreted the wind element as occurring within the book.³³ It is also believed that the name may have been based on quick movement. The name can be misleading since there is a style of calligraphy called 'whirlwind' style, where whirlwind simply describes the very fast writing speed.³⁴

Some scholars believe that whirlwind binding refers to a modified concertina binding where either one sheet of cover paper was

29 'In March of the 16th year of King Chungnyol (1290), the Chinese Emperor ordered the writing of gold and silver sutras and selected the best monk scribes, therefore 35 Korean monks were dispatched to the Yuan court [...]. In April of the same year, 65 Koryo monks, sutra-writers, were dispatched to Yuan...', Y. Pak, 'Illuminated Buddhist Manuscripts in Korea', *Oriental Art* 33 (1987/88): 33–4.

30 Portal, Korea, 88.

31 G. Lee, 'Bookpaper and Bookbinding of Old Korean Books', *Gutenberg-Jahrbuch* 79 (2004): 52.

32 Yoo, 'Joogkook', 27.

33 'Because a slight wind occurred when one turned the pages quickly, the term *whirlwind* was most appropriate for this type of book'; P. Liu, *Chung-kuo chuang-ting chien shih* [A Brief History of Chinese Bookbinding] (Taipei: Han Hua, 1969), 20, after Martinique, 'Chinese Traditional Bookbinding', 22.

34 Yoo, 'Joogkook', 34.

35 K. Ikegami, *Japanese Bookbinding*, trans. D. Kinzer (New York: Weatherhill, 1986), 59–61. In Japanese *senpuyo* is written with the same three Chinese characters, 旋風葉, meaning respectively ‘whirlwind’ (first two characters) and ‘leaf’, but its name has been traditionally interpreted in western literature as ‘flutter bookbinding’.

36 Chinnery refers to the whirlwind binding as ‘*Xuanfeng zhuang*’, but in Chinese literature the name *longlin zhuang* seems to be generally accepted; Chinnery, ‘Bookbinding’, 14–15. Martini-que related whirlwind binding to concertina binding; Martini-que, ‘Chinese Traditional Bookbinding’, 22. The National Central Library of Taiwan rare book website seems to agree with Martini-que and consequently uses the name *longlin zhuang*; <http://www.worg.ncl.edu.tw/rarebook/name.htm> (accessed 10 December 2007). See also A. Burkus-Chasson, ‘Visual Hermeneutics and the Act of Turning the Leaf: A Genealogy of Liu Yuan’s *Lingyan ge*’, in *Printing and Book Culture in Late Imperial China*, ed. C.J. Brokaw and K. Chow (Berkeley: University of California Press, 2005), 372.

37 Yoo, ‘Joogkook’, 15–16.

38 Yoo, ‘Joogkook’, 27–33.

39 Cheon, *Hanguk Seojihak*, 107.

attached to both sides, or two sheets of cover paper were connected with a separate piece to the spine. A practical explanation has been presented by Japanese master bookbinder Kojiro Ikegami, who interprets the whirlwind bookbinding (Japanese: *senpuyo*) as a kind of very light accordion binding wrapped in a single-sheet cover but with pages unattached to the spine so that a gust of wind could blow the pages out of the book.³⁵

Other theories state that whirlwind binding is actually the binding called ‘dragon scale’ (Chinese: *longlin zhuang* 龍鱗裝) or ‘fish scale’ (Chinese: *Yuling zhuang* 魚鱗裝) binding (Fig. 2).³⁶ The structure of this binding is made with sheets of paper of different widths stacked on top of each other. The shortest paper is at the top, the longest at the bottom. The leaves are aligned and pasted along the left or right edge. Such a layout makes it much easier to consult a long text and for this reason, dragon scale format was often used for reference books.³⁷ Ma feng (馬衡, 1881–1955) started to use the name dragon scale based on Wang Yun’s (王惲, 1227–1304) description of the manuscript, ‘Corrected and Supplemented Chinese Rhyme Dictionary’ (Chinese: *Kanmiu buque qieyun* 刊謬補缺切韻, 706) by Wang Renxu (王仁煦) in the Palace Museum in Beijing with a colophon indicating that it was copied and bound in 749.³⁸ Books in this style were rolled and stored like scrolls, a fact that suggests the influence of the scroll format. At the same time the concept of stacking sheets may have been related to *pothi* bindings. The exact period when this binding style was in use remains unknown, but examples suggest that it was probably the late Tang dynasty. No books bound this way have ever been found in Korea, but the term ‘whirlwind binding’ is known in Korea and this fact puts a question mark over possible associations between whirlwind and dragon scale binding.³⁹

It cannot be said conclusively, although it is possible, that the whirlwind binding in Korea was equivalent to the concertina binding but with connected covers. An example of the whirlwind binding style can be seen in some of the maps from the late Joseon dynasty. ‘Map of the World’ (*Yeojido*, 輿地圖, nineteenth century) used relatively thick paper pasted onto half of the next leaf instead

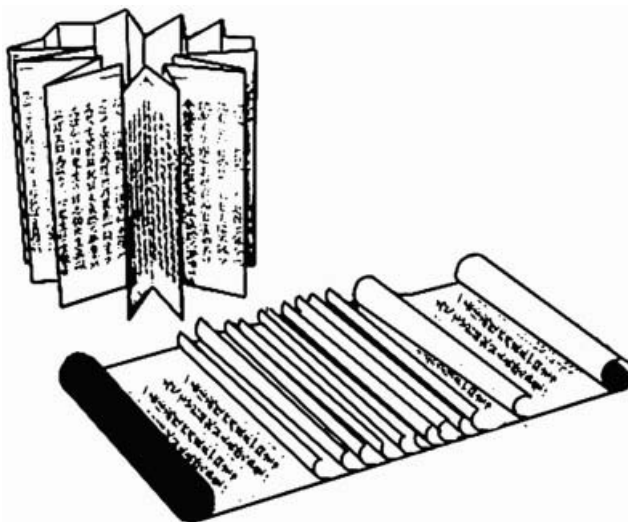


Fig. 2 Diagrams of whirlwind bindings (top) ‘concertina’ *xuanfeng zhuang* (旋風裝) and (bottom) ‘dragon scale’ *longlin zhuang* (龍鱗裝).



Fig. 3 Map of the World, detail, ink and watercolour on paper, 28cm × 21.6cm, Library of Congress Geography and Map Division. © Library of Congress.

of using hinges on the back, forming a variation of concertina binding (Fig. 3).⁴⁰ The book covers were separately attached to both ends and the spine was covered with silk.

Butterfly binding (Korean: *hojeobjang*; Chinese: *hudie zhuang* 蝴蝶装)

Butterfly binding is the first binding or block book in East Asian bookbinding history that announced the folded single-leaf book in contrast to the folded continuous leaf of the concertina binding. It is known that it had been developed during Song dynasty China, and believed to be in use until the beginning of the Yuan dynasty.⁴¹ The book was given the name because of the way it opens, which resembles the wings of a butterfly. Each sheet of paper was folded in half with printed or written pages facing each other; the sheets were then pasted together so that the folded edges formed the spine.

The emergence of the butterfly binding should be seen in relation to the simultaneous development of woodblock printing. Even though the earliest text printed with a woodblock in China is in the scroll binding format, the use of individual leaves in the butterfly binding was naturally more suitable for printing blocks. Somewhere between the scroll and the butterfly book a characteristic of early East Asian binding appeared, namely the well-known preference for one-sided printing, natural for a scroll. It was preserved in butterfly binding where, since the block was printed onto a whole sheet and then folded in half, only one side of each sheet was printed.⁴² Butterfly books were easy to make and to carry around and, more significantly, easy to open to the desired page. They did have certain disadvantages, however; since the leaves were pasted to the spine, the adhesive was in the middle of a printed sheet, and pasted leaves tended to break away from the spine through use.⁴³

In Korea the butterfly binding was also a transitory binding format. There is no extant copy from the Goryeo dynasty and only a few examples exist from the Joseon period. It is known that some butterfly-bound books might have been later rebound with a side-

40 From the collection of Library of Congress Geography and Map Division, Washington DC.

41 Martinique, 'Chinese Traditional Bookbinding', 22, 35; Helliwell, 'Repair and Binding', 36; Chinnery, 'Bookbinding', 5.

42 The preference for one-sided printing in East Asia can be ascribed to the translucence of the paper where characters printed on the verso would be visible on the recto and vice versa. See also Chinnery, 'Bookbinding', 6.

43 J. Munn, Library of Congress, Washington DC, personal communication, 2008.

44 Cheon, *Hanguk Seojihak*, 109.

stitched binding. The classic examples of Korean butterfly-bound books are parts of Avatamsaka Sutra (Korean: *Hwaeomgyeong* 華嚴經, Goryeo period) in the Sungamgoseo Museum and Shurangama Sutra (Korean: *Sooneongumkeong* 首楞嚴經, 1370) in Kirim temple.⁴⁴ Another example is Sutra of Perfect Enlightenment (Korean: *Daebanggwan wongak lyaksojugyong* 大方廣圓覺略疏注經, Joseon period) in the Horim Museum.

Wrapped-back binding (Korean: *pobaejang*; Chinese: *baobei zhuang* 包背裝)

45 Chinnery, 'Bookbinding', 19; Martinique, 'Chinese Traditional Book-binding', 37.

Wrapped-back bindings resolved the main structural problem of butterfly binding by simply folding the pages the opposite way round. The style was widely used in China during the Southern Song dynasty (1127–1279) and by the Ming dynasty (1368–1644) it had prevailed over the butterfly format.⁴⁵ Each sheet of paper was printed on one side and folded so that the print would be on the outside of the leaf. The folded edges were the fore-edge of the book while the cut ends were the spine. The leaves were bound using paper twists passing through near the spine. Twists were then trimmed and pasted down close to the spine. A cover was attached to the front page, the spine and the last page.

Wrapped-back binding was used from the late Goryeo period to the early Joseon period, but the examples are as rare as those of butterfly binding. One interesting example is The Proper Pronunciation in Korean (Korean: *Dongguk jeong un*, 東國正韻) in Konkuk University Museum, first published in 1447 and bound in side-stitched binding but later rebound to wrapped-back binding. Another example is Lotus Sutra (Korean: *Myobeop yeonhwagyeong*, 妙法蓮華經, 1470) in the Seongbo Museum, Tongdo temple (通度寺).⁴⁶

46 Cheon, *Hanguk Seojihak*, 111.

Later evolution of East Asian bookbinding demonstrated the importance of the invention of the paper twists (Korean: *jong-e-mot*, 종이몯; Chinese: *chinian*, 紙捻) essential for this binding. They fastened the leaves without using paste and added durability to the whole structure. These twists were made from a rectangular piece of paper twisted into a long thread or cord. Their use continued in side-stitched binding, where they kept the bookblock together.

Side-stitched binding (Korean: *seonjang*; Chinese: *xian zhuang* 線裝)

The side-stitched binding represents the last stage in the history of traditional East Asian bookbinding. This binding prevailed over other formats in Ming dynasty China, around the late sixteenth and early seventeenth century.⁴⁷ The majority of Chinese books made during this period were bound in this style while many books that had been published earlier were rebound using side-stitched binding. It was common practice to reuse the original woodblocks, when possible, to reprint and then rebind books made in Song and Yuan dynasties. As a result, the dates in the colophons can easily confuse readers into believing that the side-stitched binding existed in periods much earlier than the Ming dynasty.

The use of threads for binding can be traced back to the ninth-century late Tang period in the Dunhuang collection, but the Dunhuang stitched books do not seem to follow any particular tradition of

47 Y. Li, 'Chung kuo shu chuang kao' [The Evolution of Bookbinding in China], *Tushu kuam hsueh chikan* [Library Science Quarterly] 4 (1930): 216, after Martinique, 'Chinese Traditional Bookbinding', 38.

bookbinding style. There are groups of books bound into gatherings. Some other books were stitched in the butterfly style, and stitches may have been applied to reinforce the weakness of the binding. The scholar Wang Zhu (王著) of the Northern Song dynasty (960–1127) wrote that he had butterfly-bound books stitched to make them more durable.⁴⁸

It seems only natural to assume that the side-stitched binding was invented and developed by adding the outer sewing of cotton or silk thread to the wrapped-back binding. In Chinese bookbinding, generally four holes were stabbed along the side of the spine with two inner holes closer to each other or all four equidistant. Larger books might have five or six stitches, while some exceptionally large books were reinforced with seven or even more depending on circumstances.⁴⁹ There are several variations of stitching and knotting of threads. When the thread is broken, it is still easy to replace it since paper twists hold the text block together. Most of the covers are soft and pliable which makes them easy to turn, and the whole structure gains significant durability. The only disadvantages of the side-stitched binding can be seen in the possibility of the holes getting too wide after restitching several times and in splitting of the folded edges from frequent reading.⁵⁰ The side-stitched binding spread to Korea where it quickly became representative of a well-defined local style bearing its own characteristics.

It is not clear why the side-stitched binding in Korea prevailed earlier than in China even though the style has Chinese origins. Historically speaking, side-stitched binding in Korea was exclusively favoured while China still used other bindings. Side-stitched binding had been the predominant binding style in Korea since the thirteenth century, long before it became popular in China.⁵¹ It represents the most popular style in traditional Korean bookbinding. The binding technique is similar to Chinese side-stitched binding, but there are differences regarding the average size, number of stitches, colour of thread and book cover decorations. This most popular format of Korean books preserved in both East Asian and western collections provides the best opportunity for providing a precise explanation of book structure, materials and technology. Side-stitched binding, ingenious in its simplicity, proved to be the most stable format developed during the long history of bookbinding in East Asia.

1 Structure of side-stitched bindings

Descriptions of Asian books mechanically following western terminology can lead to certain misunderstandings. Despite similar objectives, both binding cultures evolved from different origins, concepts and ideas. The complexity of Asian book terminology is often lost in translation. One similarity exists in the term 'spine' yet this still refers to a slightly but significantly different linguistic context. Chinese, Korean and Japanese people shared similar ancient Chinese names for the parts of a book. Specific names were chosen for function, location, shape or even symbolic importance. A large part of bookbinding vocabulary in China and Korea utilises anthropomorphic terms related to the human head. Others are myth-related, and meaningful words such as 'root' or 'heart' also stress the thinking-related and mythical aspects of objects as

48 Chinnery, 'Bookbinding', 8–10; see illustrations.

49 Helliwell, 'Repair and Binding', 109.

50 Martinique, 'Chinese Traditional Bookbinding', 39.

51 Lee, *Urihanji*, 53.

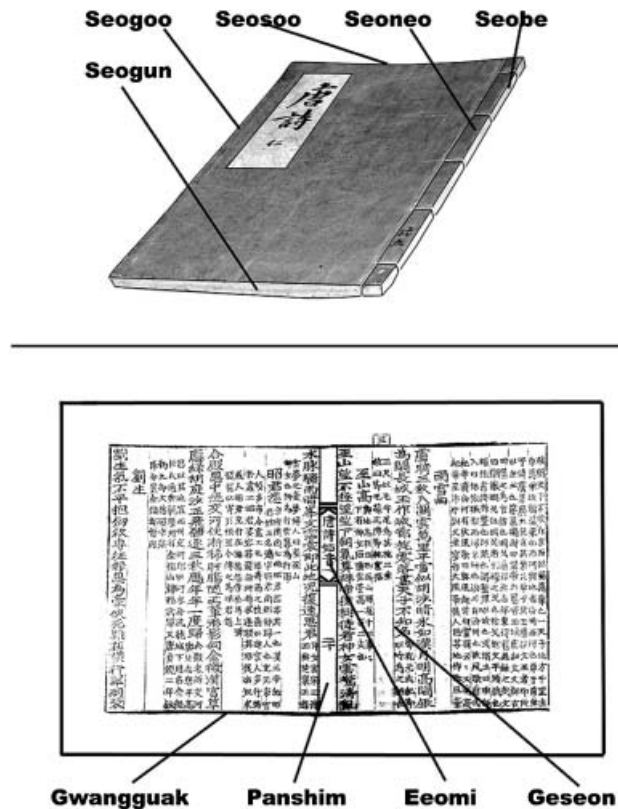


Fig. 4 Parts of side-stitched bound book and printed sheet.

perceived by society. In this article, original terms in Korean will be used to indicate each part of the book with an English translation providing their meanings (Fig. 4).

The main parts of a side-stitched bound book can be recognised as follows: spine of the book (Korean: *seobe* 書背) where the cut edges of the text block are exposed along with the edges of the cover and crossed with stitches of thread; the narrow margin between the spine and the outer sewing holes (Korean: *seoneo* 書腦), literally 'the brain of the book'; the opening of the text block (Korean: *seogoo* 書口), literally, 'mouth of the book'; the top edges of the text block and covers (Korean: *seosoo* 書首), literally 'head of the book'; and the bottom edges of the text block and covers (Korean: *seogun* 書根), literally, 'root of the book'.

2 Printed sheets of side-stitched books

The square outlines of the printing block are called *gwangguak* (匡郭) in Korean. There are several kinds of these lines depending on the specific bookbinding chosen by the artisan. Butterfly, wrapped-back and side-stitched bound books tend to have a single square line around the sheet. Scroll and concertina-bound books usually have single outlines at the top and bottom because the leaves are connected to each other to form a continuous format. The corner of the outline is often an important clue to distinguish between those books printed with woodblocks and those printed with movable type. While woodblock printed sheets have a continuous outline, printed sheets with movable type often have tiny gaps in the corners if the outline was assembled with separate pieces. Sometimes the

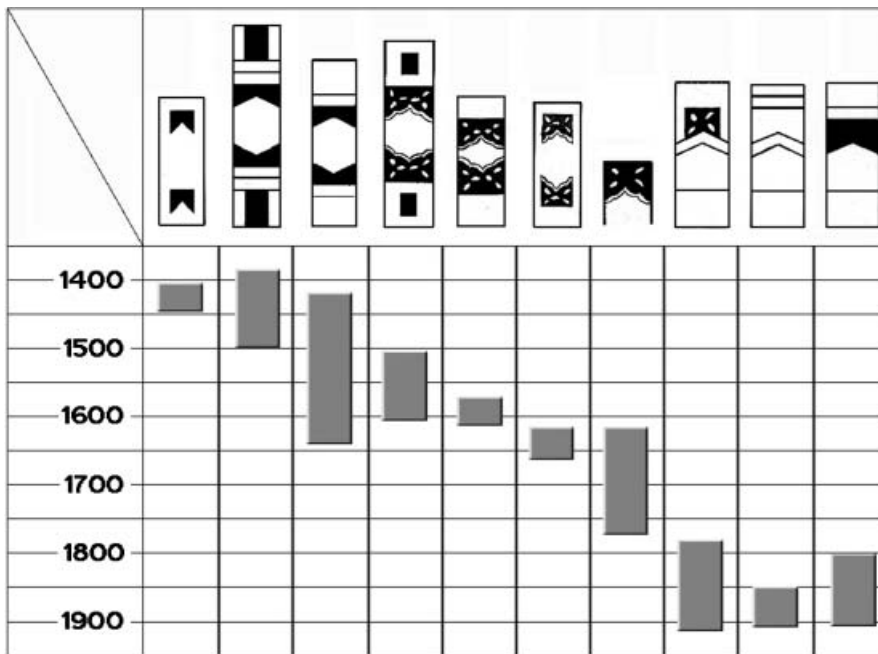


Fig. 5 Statistical occurrence of selected fishtails according to Andong University Library.

movable type edition would be reprinted later with woodblocks cut exactly after the original leaves. Discordance between the book-binding style or technique and the outlines does not necessarily mean that a book has been rebound but it can sometimes be an important clue for more careful analysis.

The vertical lines separating parts of text are referred to as *geseon* (界線). Since vertical lines started to be used in later periods, they can help to distinguish Joseon period books from those published during the Goryeo period.

The central column of each sheet of butterfly, wrapped-back and side-stitched bound books are referred to as *panshim* (版心) which can be directly translated as 'heart of the printed sheet'.

In order to aid the binder fold precisely along the middle of a sheet, 'fishtail' patterns, *eomi* (魚), so called because of their shape, were placed within the central column area, usually at the upper and lower areas. Although different styles of 'fishtails' could be used during certain periods, they can help to determine the date of a book since particular designs are known to have appeared at certain times. For example, a petal motif appeared from the sixteenth century (Fig. 5).⁵²

3 Covers of side-stitched books

The book cover of side-stitched books is called *check-ui* (冊衣), literally 'the clothes' of a book. The book cover was made either of silk or of several layers of laminated Korean mulberry paper, *hanji* (韓紙). A silk cover was mostly used for books of special value while paper remained the main material for book covers. The paper used for laminated covers was usually obtained from old books and manuscripts or from discarded new ones. There are several cases when after unbinding, important information such as the year of publication or sheets from lost books have been found in parts of the cover (Fig. 6).



Fig. 6 Tang Poetry (*Tangshi* 唐詩), detail, lining paper from old books, ink on paper, 28.5cm x 19cm, private collection.

⁵² Andong University Library, <http://www2.andong.ac.kr/~dwyun/yemi.html> (accessed 15 November 2007); see also Cheon, *Hanguk Seojihak*, 579.

53 Y. Kim, 'Joseonshidae nunghwapan pyojibokwon jejak yeongu' [The Research on Cover Restoration Nunghwa Pattern Used in the Joseon Dynasty] (master's thesis, Department of Cultural Relics Conservation, Yongin University, 2006), 22–31; see also Lee, *Urihanji*, 54.

54 J. Hong, detailed explanation available, <http://bookart.culturecontent.com/mov/mov.html> (accessed 2 January 2008); see also O. Jeong, *Nae sonulo haneon cheonyeon yeomsek* [DIY: Using Natural Dyes] (Paju: Deulnyeok, 2001), 71.

55 G. Nam, *Joseonshide goseo pyojimoo-nyang byoncheone dehan yeongu* [The History of Book Covers in the Joseon Period] (Cheongju: Cheongju Early Printing Museum, 2004), 73–102.

56 Either right-sided or left-sided. The predominance of left-sided swastika in Buddhism started relatively late, after the Second World War, to avoid confusion.

57 The appearance of this technique in Japan can be related to *Joseon Tongshinsa*, which were Korean diplomatic missions accompanied by cultural envoys visiting Japan after the failed Hideyoshi's invasion and during the Tokugawa era (1603–1867); Nam, *Joseonshide*, 85; see also K. Kim, 'Route of the Korean Envoys of Chosun Dynasty and their Cultural Legacy in Japan', in *Proceedings of the ICCOMS 15th General Assembly and Scientific Symposium*, vol. 2 (Xian: World Publishing Corporation, 2005), 967–72.

58 H. Yi, National Library of Korea, Seoul, personal communication, 2007.

A sheet of paper was coloured yellow and lined with several layers of paper with wheat starch paste. A yellow book cover is now regarded as one of the distinguishing characteristics of a traditional Korean book even though several examples of blue book covers are known. Other colours used for Korean books are relatively rare. To achieve the correct shade of yellow, the outer bark of the amur cork tree (Korean: *hwanbyeok*, *Phellodendron amurense* Rupr), acorns (Korean: *dotori*, *Quercus*) or fruits of the gardenia tree (Korean: *chija*, *Gardenia jasminoides*), were usually used.⁵³ According to traditional scroll mounter and bookbinder Hong Jongjin, after application of the yellow dye soybean extract would be brushed on which may have strengthened the paper and reduced surface abrasion. Judging from the Korean traditional practice of dying fabric it is also possible that the soybean extract acted as mordant, utilising protein from the soybean to help to set the colour.⁵⁴

After the book covers had been dyed, further decoration steps followed. First beeswax was applied onto the carved woodblock called *nunghwapan* (菱花板) and the slightly dampened paper cover was placed over it. The beeswax was applied on the surface of the paper cover which was later rubbed with a smooth stone, pressing and smoothing to impregnate the cover with beeswax which would waterproof and protect it from insect damage. The patterns were embossed by burnishing the surface of the cover paper with a stone over the woodblock surface. Additionally, it gave the cover a glossy and leathery finish.

The yellow covers were cut slightly larger than the text block and the four edges were folded in. The excess paper in the corners was cut out to even the surface. Most book covers in Korea were made this way until the advancement of mass production and modern designs in the twentieth century.

According to some studies the use of woodblock designs to decorate book covers started in the Goryeo period, but so far no factual evidence has been found to support this theory.⁵⁵ Most existing woodblock-designed covers date from the late Joseon period onward. It would be fair to say that the design motifs were originally related to Buddhism since early examples present patterns based mostly on the lotus and the Buddhist swastika (卐).⁵⁶ Gradually, with the popularisation of the technique, more designs were added, including flowers, plants, animals and various geometric motifs. In the Joseon period Buddhist themes were used regardless of the subject of the book, often decorating covers of Confucian classics. The changes in popular subjects for designs seem to be related to similar currents in fabric designs of the time. Corresponding techniques can also be found in Japanese books of the Edo period (1603–1868) and some designs are similar to those of Korea, for example the combination of the sign 囀 and lotus with other imagery, flowers giving the meaning of good luck (Fig. 7).⁵⁷

4 Size of side-stitched books

The popular size for Korean books was 250–300mm × 150–200mm, however the size could vary depending on the purpose of the book.⁵⁸ Manuscripts made for recording court ceremonies were

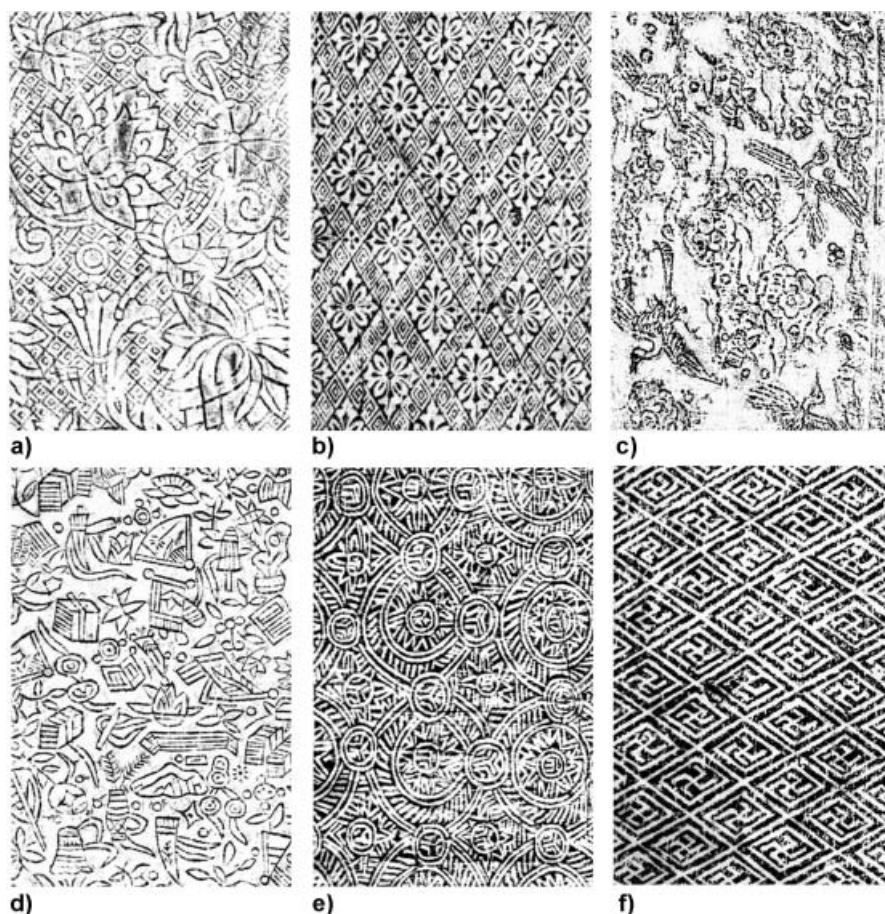


Fig. 7 Various patterns for book covers: (a) 15C lotus, (b) 15C flowers and geometrical patterns, (c) 15C cranes and clouds, (d) 16C various objects, (e) 17C geometrical patterns, (f) 18C Buddhist swastika and squares. © Korea Culture & Contents Agency, Cheongju Cultural Industry Promotion Foundation.

larger than other books (see the Royal Protocols of the Joseon Dynasty, below). On the other hand, a scroll which was meant to be a relic kept in a pagoda could have been fairly small. There are no records explaining what dictated the sizes of Korean books. Traditionally in Korea the size of the book was decided first and book paper specially ordered and produced to size.⁵⁹ Certainly it was not the same as in Japan where the size of book was more uniform and related to the size of the available paper.⁶⁰

5 Process of side-stitched binding

Printed sheets of Korean side-stitched bindings were first folded in half and stacked together with a certain number of sheets forming the text block to be bound. Four holes were pierced near the spine to bind the text block together with two paper twists similar to those used in wrapped-back binding. They secured the book even if the outer threads eventually broke. Each paper twist was tied, trimmed and hammered. The edges of the text block tied with paper twists were then precisely cut. In another variation, instead of using paper twists; pieces of paper were inserted through holes, the paper cut very close to the book block from both sides, pasted down and hammered (Fig. 8).

⁵⁹ C. Park, Youngin University, personal communication, 2008.

⁶⁰ The general dimensions of Japanese books made of *hanshi*, which literally means 'half paper', are 235mm × 165mm; Ikegami, *Japanese Bookbinding*, 8.

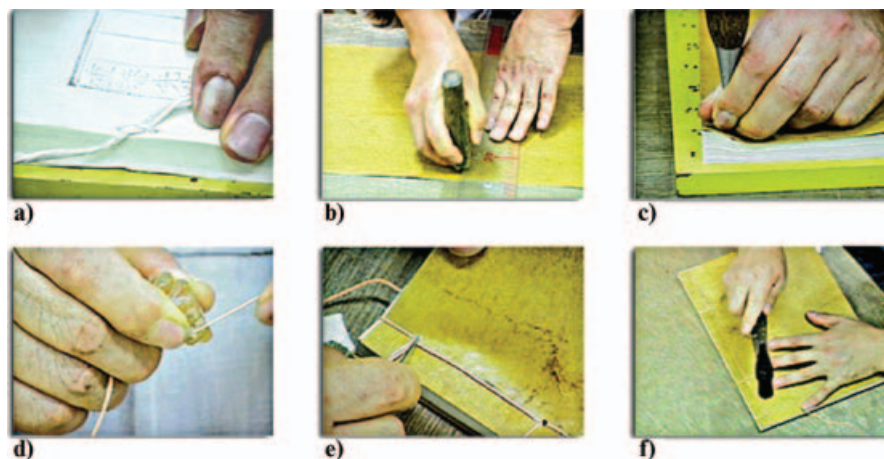


Fig. 8 (a) tying paper twists, (b) trimming book cover, (c) piercing holes, (d) waxing thread, (e) binding, (f) hammering stitches.

The endsheets (Korean: *myeonji*, 面紙) were sewn to the text block by the inner stitch with paper twists and attached to the inside of the book covers. Endsheets carried important information, normally written and/or stamped; the year of publication, name of the owner and history of ownership. This information was sometimes removed by a descendant of the owner if the book was to be sold, to cover the shame of selling an ancestor's books. On the front cover, title strips were attached at the upper left or the title was simply written on the cover without putting on extra paper. The cover was then placed on both sides of the text block. Usually five holes were pierced through the covers 12–15mm from the spine.

The bookbinding thread was waxed with beeswax before stitching. The thread normally entered the book starting from the direction of the opening inside the text block into the centre or bottom hole and pulled out through the front cover (Fig. 9). The needle was then inserted into the next hole on the right and the following stitches sewn toward the top edge, proceeding to the bottom edge, and then back to the starting hole. The needle was finally inserted under the former stitching and, after checking that the thread was tightly bound, the knot was tied as close as possible to the hole. The thread passed through the hole, was tied with the other end of the thread, leaving a piece a few centimetres long, and tucked between the sheets. Sometimes the leftover thread can be found between the last sheet and the back cover of an old book. Probably because of the larger size of the book, the thread tended to be thicker than those used by Chinese or Japanese bookbinders. The thread was generally made of hemp, cotton or silk, dyed and then coated with beeswax. The thread could be dyed in different colours, with red being the most significant.⁶¹ The source of the dyes used for the thread has not yet been conclusively established, but considering the traditional way of colouring fabrics, it could have been plant-based. Because natural dye fades easily some book threads can appear to have no colour even though they originally would have been dyed.⁶²

Other bindings

The side-stitched binding largely prevailed over other Korean bookbinding styles. However, during the long history of Korean

⁶¹ Munn has noticed blue coloured threads in some Korean books at the Library of Congress. Park confirmed that other colours were used to dye threads; personal communication, 2008.

⁶² The whole process has been demonstrated in a detailed video available at <http://bookart.culturecontent.com/mov/mov.html> (accessed 2 January 2008). There is another variation where thread enters the book from outside the block into the second hole and is looped around before continuing forward; P. Kim, Living National Treasure, personal communication 2008.

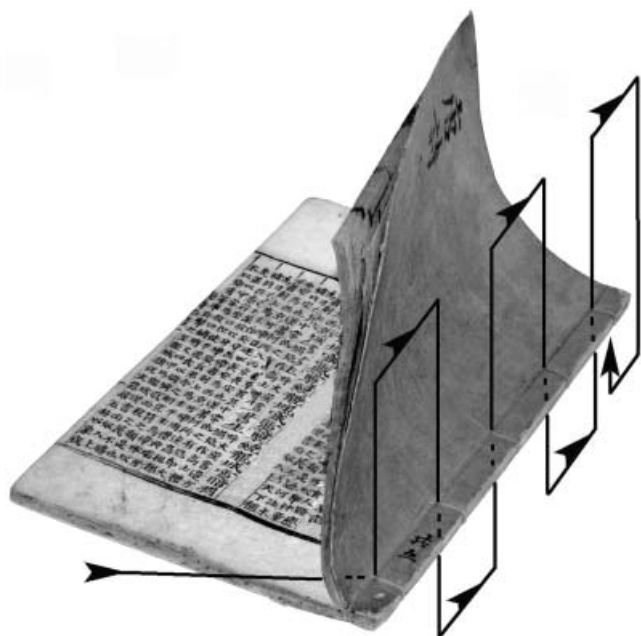


Fig. 9 Diagram to show sewing of Korean side-stitched binding.

bookbinding, combinations of different binding styles and other specific techniques were developed and are explained below.

1 Multiple fold binding

In the Joseon dynasty cartography flourished and the first accurate world map in East Asia was produced in 1402. The World Map (Korean: *Honilgangli yeokdaegukdojido* 混一疆理曆代國都之圖), now in the Ryukoku University Museum, Japan, was based on Yuan China and Arab sources. Joseon dynasty maps were often made in portable atlas form, uncommon both in China and in Japan.⁶³ A typical Joseon atlas consisted of several sections designated for a world map, map of China, map of Korea, maps of each of the eight provinces of Korea, a map of Japan and a map of the Ryukyu Islands. The multiple fold binding format was made for the purpose of meeting the demands of cartography—when a large sheet of paper was necessary for the drawing—and a book small enough, a convenient ‘pocket’ size, to be easily carried by travellers was desirable.

63 Portal, Korea, 115.

The maps, folded into multiple sections, were adhered to each other by pasting a section of one map to a section of the next. A book cover was usually wrapped around the folded map or two separate covers were pasted to both ends and fabric or strips of paper were attached to the spine. Parallel examples of Chinese bound maps were made in a different way. Large sheets were folded multiple times and sewn into a side-stitched binding.

2 Folded hinge binding

Folded hinge binding, a different technique used for binding maps, is probably one of the most interesting bindings found in Korea. Map of the Eastern World (Korean: *Dongyeodo* 東輿圖, 1896) was in essence a concertina binding but each inner fold was attached with paper tabs to both front and back covers. The tabs were attached

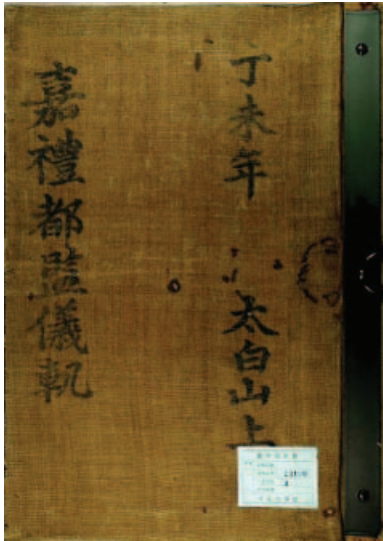


Fig. 10 The Royal Office of Weddings Protocols (*Garyedogam uigwe* 嘉禮都監儀軌), 1727, ink on paper, 46.8cm × 32.7cm, Kyujanggak Institute for Korean Studies. © Kyujanggak Institute for Korean Studies.

⁶⁴ J. Park, *Wangshil jaryeo bojongwa gwanli* [The Care of Korean Court Documents] (Seongnam: Hanguk Gojeonjeok Bojon Hyeopuihoe, 2006), 116.

⁶⁵ The date of transmission has been mentioned in many sources. See, e.g., D. Hunter, *Papermaking: The History and Technique of an Ancient Craft* (New York: Courier Dover Publications, 1978), 56.

⁶⁶ 'Chronicle of Japan' (*Nihon Shoki*, 日本書紀, 721), chapter 22; see also R. Paine, *The Art and Architecture of Japan* (New Haven: Yale University Press, 1981), 35.

progressively down the folds sequentially, resembling the hinges of screens. The cover of this bound map was unfortunately later replaced with a western case cover, but the tabs can still be seen under the endsheets.

3 Pasted leaf binding

In a butterfly binding every other sheet is blank. The Cartographic Survey (*Yeoji yolam*, 輿地要覽, eighteenth century) was bound in butterfly binding; however, the blank leaves were not left free but pasted to the next blank leaf. As a result of pasting two leaves together, they could be turned without seeing blank areas and each leaf was thicker. The folds were pasted into the spine, but as a consequence of the heavier leaves, they were easily detached from the spine with use.

4 The Royal Protocols of the Joseon Dynasty binding (Korean: *Uigwe*, 儀軌)

This bound manuscript (Fig.10) records Joseon dynasty court events, ceremonies and important funerals throughout the Joseon period. In this binding, metal bars were used to bind the text blocks and covers. Three or five rivets protruding from a metal bar were pierced through the holes along the spine margin where originally the thread had been sewn into the side-stitched binding and affixed to a second metal bar on the other side of the cover. Three or five holes were used to hold the block connected with the bar. The bars were sometimes decorated with floral ornaments or had a ring attached to the centre (the exact function of the ring is as yet unknown).⁶⁴

Book paper

No written record explains when papermaking skills spread from China to Korea. It is believed that papermaking might have been practised in Korea as early as the third century, based on the discovery of a piece of paper in an ancient tomb, *Chehyeopchong* (彩瑩塚, 108 BC–AD 313). This early date closely follows the Chinese invention and largely predates the much later transmission of papermaking techniques from Korea to Japan in the seventh century.⁶⁵

Korean papermakers established their own methods of papermaking, probably some time between the third century and 751 when the Dharani Sutra was printed on paper made of paper mulberry (Japanese: *kōzo*). It is also the first artefact in which the paper was treated by *dochim* (搗砧), a beating process which reduced the bleeding of the ink. Pounding the paper to prepare the surface was used throughout Korean papermaking history. From the third to the seventh centuries the Korean papermakers adapted Chinese methods and developed new methods to suit locally available materials. In 610, Japan received instruction on papermaking from a Korean Buddhist monk, Damjing (曇徴), together with ink sticks, a millstone and colourants.⁶⁶

The main materials in traditional Chinese papermaking included bast fibres, hemp (*ma* 麻), paper mulberry (*ku* 穀 or *chu* 楮, *Broussonetia papyrifera*), rattan (*teng* 籐, *Calamus rotang*), blue

sandalwood (*Qing tan* 青檀, *Pteroceltis Tatarinowii*); grass fibres: bamboo (*Zhu* 竹, *Gramineae* family), rice or wheat straw (*cao* 草, *Gramineae* family), and mixtures of bast and grass fibres. With the exception of hemp and rattan, all the other fibres are still used for papermaking today.⁶⁷ During preparation, fermentation of raw materials may occur before processing or after initial cooking.⁶⁸ The favourite Chinese paper of the Joseon literati was *xuan* paper (Chinese: *xuazhi* 宣紙), originally made in Anhui province with blue sandalwood and straw and well known for its softness and good reception of ink. The imitation of this paper, *seonji* (宣紙), was produced in Korea and used mostly for calligraphy and paintings.

Throughout the history of Korean papermaking, paper mulberry remains the major fibre. There are early examples of books using hemp fibres dating from the time the paper was introduced to Korea until Unified Shilla.⁶⁹ The known examples on hemp fibre paper include Goguryeo Lotus Sutra (Korean: *Myobeop yeonhwagyeong*, 妙法蓮華經, pre-668) and Unified Shilla Diamond Sutra (Korean: *Geumgwang myeonggyeong*, 金剛明經, 858).⁷⁰

As an exclusive source of paper fibre, paper mulberry was first used in Shilla Dharani Sutra (751). Since the fibres are relatively short, they must have been chopped as well as beaten.⁷¹ Shilla Avatamsaka Sutra (755) describes how paper mulberry was used for papermaking. The trees were grown with great care, sometimes sprayed with scents. Shilla Diamond Sutra (855) is another example where book paper was made of paper mulberry and it remained the main material for book paper until the Joseon period. Chapter 29 of Annals of King Taejong (Korean: *Taejongshillok*, 太宗實錄, 1400) describes how the Joseon government ran its own plantations and local governments had to pay the taxes in paper mulberry.⁷² As a result of extensive paper production there was a shortage of paper mulberry from the twelfth century.⁷³ At that time other fibres were used for book paper, either mixed with paper mulberry or used on their own, such as flax (hemp, ramie), wild paper mulberry (Korean: *anpi*, *W. sikokiana*), mulberry (*Morus alba*), willow, straw, bamboo, cotton and recycled paper. On the other hand, fibre used to make paper for unbound manuscripts in the Joseon period was mainly paper mulberry.⁷⁴

King Sejong (世宗, ruled 1419–1450) was interested in developing papermaking and tried to use different fibres from China and Japan. He sent papermakers to China to learn how to use other materials. He also ordered *waejeo* (倭楮, *kōzo*) to be brought from the Japanese Tsushima Island and grown in many regions in 1430.⁷⁵ Paper made of mulberry rarely appears in Korean historical records. China, Korea and Japan must all have been aware how their neighbours made paper and tried to learn each other's techniques. Used paper was utilised as book paper either by recycling, by printing the unprinted side or as lining paper for book covers and endsheets.⁷⁶

The surface of Korean handmade paper sheets was often prepared by the beating process. After the paper sheets had been formed they were stacked and left to dry overnight with a wooden board on the top of the stack, weighed down with stones. The board was then removed and the stack was beaten with a wooden stick or with a wooden hammer powered by a watermill. In some cases diluted rice

67 T. Tsien, 'Raw Materials for Old Papermaking in China', *Journal of the American Oriental Society* 93 (1973): 510–19.

68 F. Tsai and D. van der Reyden, 'Analysis of Modern Chinese Paper and Treatment of Chinese Woodblock Print', *The Paper Conservator* 21 (1997): 49. Fermentation of raw materials was not part of traditional Korean papermaking.

69 S. Jung, 'Jong eui jeolle shigiwa godae jejikisul e gwanhan yeongu' [Study on the Introduction of Paper and Papermaking Technique in Ancient Korea] (PhD thesis, Department of Library of Information Science, Yonsei University, Seoul, 1998), 85.

70 Lee, *Urihanji*, 50–2.

71 Jung, *Jong*, 34.

72 Lee, *Urihanji*, 51.

73 'History of the Goryeo Dynasty' (*Goryeosa*, 高麗史, Chapter 79, Ji 33, Sihwa 2, Nongsang, 5th year of King Injong (1127).

74 G. Son, 'Joseon shidae moonseoji yeongu' [A Study on Papers used in Historical Documents of Joseon Period] (PhD thesis, Department of Language, Literature and Arts, Graduate School of Korean Studies, Gyeonggi-do, 2004), 102.

75 G. Son, 'Joseon shide moonheone natananeun jong eui jongryu mit jeo gagongbeop' [The Kinds and Process of Paper Mentioned in References of the Joseon Period], *Gojeonjuk* 2 (2006): 26–33; see also Seong Hyeon (成愼), *Collections of Writing by Yongjae* (*Yongjechonghwa*, 慵齋叢話), Chapter 10, after Lee, *Urihanji*, 51.

76 Lee *Urihanji*, 51.

starch paste was applied to the surface of each sheet of paper, providing abrasion resistance for ease of writing or printing. This practice was not adapted for all the paper produced in Korea, and contemporary paper for paintings and calligraphy, made in the traditional way, does not contain any starch. Through the beating process, the paper texture became smoother and the fibres became more compact. This practice was used for high-quality paper. Even though there are examples where beating has been used, it should not be automatically presumed that every sheet of Korean paper will have been processed in this way.

Traditionally, creamy white paper was most common, but red, yellow, dark blue and dark grey coloured papers were also made. The paper was coloured after the sheet had been made rather than during formation in the vat. When heavy-duty paper was required for flooring or furniture, oil was applied to the surface to make it waterproof. This kind of paper was also used for writing as well as for making umbrellas and raincoats and sometimes as a wrapping paper for ritual vessels. Sunflower root extract (*Helianthus annuus*) gave the paper its glossy surface. These methods are no longer used in papermaking.⁷⁷ Another old method was the impregnation with beeswax which supposedly prevented insect damage. This process, however, contributed to the paper yellowing and becoming brittle. Damage has been found in the very important royal edition of the Annals of Joseon Dynasty (Korean: *Joseon wangjoshillok* 朝鮮王朝實錄, 1392–1863).⁷⁸ Currently conservation issues regarding this problem are under examination and research is being conducted by the National Research Institute of Cultural Heritage in Korea.

77 G. Son, 'Joseon', 38, 42.

78 G. Cho, 'Joseon wangshil bong an seockeok eui janghwang gwa bojon yeongu' [A Study of the Mounting and Preservation of Royal Books in the Joseon Dynasty] (PhD thesis, Department of Language, Literature and Arts, The Graduate School of Korean Studies, Gyeonggi-do, 2006), 5.

79 The Chinese technology of making and use of ink was transmitted to Korea and Japan as well as to Tibet. Korean and Japanese ink had been in solid format (ink sticks) similar to Chinese ink, while Tibetan ink was in liquid form. Inks were traded to India, Turkey and to Europe as early as the tenth century; X. Zhan, 'Study in the Manufacture of Some Ancient Inks in Relation to Ink Corrosion Found on Sanskrit Fragments' (master's thesis, Camberwell College of Arts, 2007), 11.

Printing

1 Printing ink (Korean: *meok/muk* 墨)

Korean ink is a mixture of soot and animal glue. The chief ingredients of high-quality ink, according to Chinese classics, are lampblack made by burning vegetable oil or soot made by burning wood (usually pinewood) and animal glue.⁷⁹ Pinewood or vegetable oil (soy, camellia, rapeseed) was burnt in a fireplace supplied with a chimney where the soot was trapped. The higher the soot was trapped in the chimney, the better quality ink sticks it produced. The soot was strained through a very fine strainer and mixed with glue made from horn or animal hides. The final quality of an ink depended upon the quality of the glue, which provided a binder and a dispersion system for the particles. The mixture was repeatedly pounded and placed into a wooden mould to dry slowly under the ashes. Ink obtained from pinewood is called *songyeon muk* (松煙墨), while that made from vegetable oil is *yuyeon muk* (油煙墨). In printing with woodblocks, pine soot ink was preferred because it was distinguishably darker. It tended to congeal when applied to metal type so lampblack was used for printing with metal type. The density of the black was somewhat weaker but it adhered well to metal type. Before application the ink was ground and mixed with water, and alcohol was added for better dispersion, wetting and quick drying.

2 Woodblock (Korean: *mokpan* 木版)

Around the seventh century, a large number of Buddhist texts were published in Korea. The oldest extant Chinese dated woodblock printed book is the Diamond Sutra (Chinese: *Jingang banruo boluomiduojing* 金剛般若波羅蜜多經) from Tang China, 868. In Japan, One Million Pagodas and Dharani Prayers (*Hyakumanto darani* 百万塔陀羅尼) is the earliest woodblock printed manuscript, dated 770. In Korea, the oldest extant printed manuscript, Dharani Sutra, was made in the Unified Shilla dynasty, not later than 751. The sutra was found during the Sokka pagoda (釋迦塔 Sakyamuni pagoda) excavations in the Pulguk temple (佛國寺), erected in 751. There is no colophon in the text, but from the typography it can be assumed that the manuscript reflected a late seventh- and early eighth-century style, following type founts made during the Empress Wu Zetian period (武則天 ruled 625–705) and used for only about a century.⁸⁰

80 Cheon, *Hanguk Seojihak*, 168.

Buddhism influenced publication of a large number of books throughout the Goryeo period. Unfortunately, because of wars with Kitan, Jurchens and Mongols, many of the books made during the Goryeo dynasty have been lost. However, there remain several thousand copies of the Goryeo collection of the Buddhist tripitaka, the first edition (*Chojo daejanggyeong* 初雕大藏經, 1101–1087). The Goryeo collection of Buddhist tripitaka, the second edition (*Jaejo daejanggyeong* 再雕大藏經, 1236), printed with 80,000 woodblocks, still remains in the Haein temple (海印寺 UNESCO World Heritage) in Hapcheon. The woodblocks for this book had been made on such a large scale as a form of prayer for protecting the country from Kitan and Mongols.

The woodblock printing process began with cutting the selected wood boards into panels and polishing their surfaces. The trees selected for woodblocks were jujube (Chinese date) (*Zizyphus jujuba* var. *inermis*), Asian pear (*Pyrus pyrifolia* (Burm. f.) Nakai) or Manchurian walnut (*Juglans mandshurica*), Schmidt birch (*Betula schmidtii*), Sargent cherry (*Prunus sargentii* Rehder), Korean white birch (*Betula platyphylla* var. *japonica* (Miq.) Hara), and hubak (*Machilus thunbergii*).⁸¹ The block was repeatedly soaked in salt water (approx. 3.5%) and soft water; if salt water was not available, hard water was used. The block was then steamed. This process helped to disinfect the block and remove wood resin. Finally, the block was dried in the shade to avoid distortion.

81 Cheon, *Hanguk Seojihak*, 161.

The square outlines and vertical text lines were carved first and ink was applied onto the block. The paper was placed onto the block and printed by rubbing the surface. After printing the square outlines and text lines, the writer, selected from the best calligraphers, wrote between the lines, and then the paper was again placed onto the block, face down. All parts of the text were carved, including title, fascicle, content, date and sometimes the name of the carver. Handles on the sides of the block prevented direct contact between blocks when several were stored together. They also helped ventilation, keeping the blocks from rotting and distorting from damp (Fig. 11). The ink was applied with a brush onto the block and the manuscript was printed by rubbing with a bundle of horse or human hair (*inche* 印體) smoothed with a tiny amount of beeswax or



Fig. 11 Woodblock with handles. © Cultural Heritage Administration.

oil. Should a mistake in the woodblock print have been found, the wrong word had to be cut out and the new word inserted in an editing process called *sanggam* (象嵌). In many cases, instead of writing the main text by hand, old books printed with wooden or metal type were used to carve new blocks. This can often lead to confusion about the original date of publication.

3 Movable type (Korean: *hwalja* 活字)

In the eleventh century, before metal type was used in East Asia, Bi Sheng (畢昇, active 1041–1048) invented baked clay type in China (Chinese: *jiaoni huozi* 膠泥活字). The mass production of baked clay movable type was never developed, probably because clay type pieces were too fragile and lacked good adhesion to the printing ink.⁸²

Metal typography was invented in Korea at the beginning of the thirteenth century. There are several historical factors that might have led to the invention of metal type (Korean: *Gumsok hwalja*, 金屬活字). Printing with woodblocks was very expensive in terms of labour and time. Large fires in Korea in 1126 and in 1170 destroyed a great number of books and caused a significant shortage of wood. There had been high-quality bronze casting since the Shilla period and there had been considerable experience in minting bronze coins during the Goryeo dynasty; so the technology for the invention of movable metal type was already present.

There are several opinions regarding the time of the invention of metal type in Korea. Priest Nammyong's *Interpretation of Zen Teachings* (*Nammyeongcheon hwasang songjeongdoga*, 南明泉和尚頌證道歌, early thirteenth century), has been identified as a woodblock printed re-edition of an earlier book printed with metal type. Another source can be found in the introduction written by Yi Gyu-bo (李奎報, 1168–1241) for *Collected Writings* (*Donggook isang gookjip*, 東國李相國集, 1241) where he describes a book, namely *Goryeo Readings for Buddhist Ceremonies* (*Sangjeong gogeu yemoon*, 詳定古今禮文, 1234), printed with metal type. Unfortunately not a single copy of that book has survived.⁸³

The earliest extant book printed with metal type was published at the former Heungdeok Temple (興德寺) in Cheongju. The book, *Selected Teachings of Buddhist Sages and Zen Masters*, popularly known as 'Jikji' (Korean: *Buljo jikji shimche yogeol* 佛祖直指心體要節), printed in 1377, predates European metal type by a century.

Bronze, lead and iron were used for metal type. The structure of the type and the styles of founts changed in different periods from the fourteenth to the nineteenth centuries. The fount types were named according to the Chinese sexagenary cycle, names of

82 Shen Kuo (沈括, 1031–1095) wrote about Bi Sheng's invention of baked clay type in his book *Dream Pool Essays* (Mongxi bitan, 夢溪筆談) in 1088; J. Needham and T. Tsien, *Science and Civilisation in China*, vol.5, *Chemistry and Chemical Technology*, part 1 (Cambridge: Cambridge University Press, 1985), 201.

83 P. Sohn, 'Printing since the 8th Century in Korea', *Koreana* 7 (1993): 4–9.

publishers or calligraphers and styles of typography. Since the exact years of making metal type have been recorded, it is often possible to identify the year of printing by comparing printed characters to the style and the shape of particular type pieces.

It is possible that *Selected Teachings of Buddhist Sages and Zen Masters* had been printed using the early versions of movable type using beeswax model type or wooden type.⁸⁴ The style of characters was selected either from the printer's own writing, from a copy of a famous calligrapher's writing or from a previous printed text. The paper with new text was attached face-down to sticks of beeswax and the characters were engraved with a very sharp knife and separated, either individually or in small groups. This process produced model type pieces, known in Korean as *abija* or *eomija* (아비자 or 어미자), which would later be lost in the process of forming metal type. The model types were placed in a casting pot, filled with a dough-like mix of kaolin, clay or desalinated sand and water. The pot was heated to melt the model types and the molten metal was poured into the casting pot, producing the type pieces. After cooling, the type pieces were taken out and cut to the correct size. Because the model types were melted during the process, the shapes of characters could not always be uniform. Another casting method was to make a mould by imprinting wooden type into a clay matrix. Before the type was set in the printing plate (*inpan*, 印版), usually made of copper, a mixture of beeswax and castor oil (or sesame oil) in a proportion of 1:1 was poured into the plate to better hold the type in place (Fig. 12).⁸⁵ This printing plate was similar to the chase in western printing, but it had fixed frame, outlines and text lines. After completing the typesetting, the printing plate was heated to spread the beeswax evenly. The type pieces were levelled with a mallet or by pressing them firmly in place.

There were some changes in printing during the Joseon period. In 1403, the central government established an official foundry to produce all the metal type for its own publications in order to produce more uniform characters and to ensure durability. During printing metal type was set in printing plates with fragments of bamboo or scrap paper. It helped to speed the printing process since the typesetter did not have to wait until the beeswax had hardened. Once the type was set, ink was applied and dampened paper was placed on the printing plate. Paper was rubbed with bundles of horse or human hair treated with a little oil or beeswax. The first draft was printed and corrected. For books published by the order of the central government, severe punishments could have been inflicted upon proof readers if they overlooked too many mistakes.⁸⁶

The early beginnings of wooden type (Korean: *mok hwalja* 木活字) have not been recorded; it was used as a model for metal type or to substitute for metal type when necessary. There are only few extant examples of texts printed with wooden type, including a scroll, *Aristocratic Titles Awarded by King* (1395). The process of making wooden type was documented in *Encyclopedia of Husbandry and Crafts* (*Imwongyeongjeji*, 林園經濟志) by Seo Yoo-gu (徐有榘, 1764–1845) and discussed by Ryu Tek-il.⁸⁷ Both writers described the process where first the type fount was selected and the calligrapher wrote characters according to the required size. The preferred characteristics for the

84 M. Park, *Geumsok hwaljajang* (Daejeon: Cultural Properties Administration, 2001), 11–210.

85 The right proportions are essential for this process. Too much wax makes typesetting time too short, and too much oil takes too long to harden; K. Ra, 'The development of early printing technique in Korea' (KFJS: *Sharing experience between Korea and France in Analysis, Characteristics and Deterioration of Ancient Papers*, Korea-France Joint Seminar, October 6–9 2004, Daejeon, Korea), 114.

86 Cheon, *Hanguk Seojihak*, 266–72.

87 T. Ryu, 'Hanguk mokhwalja inse-sool e daehayeo' [Korean Wooden Type Printing], *Minjok munhwa nonui* 4 (1983): 112–25; see also Cheon, *Hanguk Seojihak*, 412.



Fig. 12 Metal type printing. © Cultural Heritage Administration.

wood were that it be soft but strong and of good absorbing quality, such as white birch, pear, jujube and walnut. Similar to woodblock preparation, the trunk of a tree was soaked in salted water or hard water to remove resin and to make it easier to carve, then left to dry in the shade. If time was pressing, the wood could be steamed instead in salt water and dried in sunlight. The text was attached face-down to the stick matrix and the characters were carved as required for the text. After carving the characters, each type piece was cut down to the right size using a wire. Finally, all the edges were slightly sanded to make a uniform height.

4 Artisans

There are not many historical accounts explaining how artisans made books. As mentioned earlier, temples played a great role in bookmaking in Korea, but there are no detailed records regarding the position of bookbinders within ancient Korean society. In the process of making books, many different artisans worked together, among them carvers cutting woodblocks for book covers, others dyeing the cover paper and thread. The binder collated and aligned the text, inserted paper twists into the book paper, cut the text block to size, lined and cut the book cover and sewed the covers to the book.⁸⁸ In the printing process every step had its own specialists, including assistants to bring the type from its boxes to the typesetters. Endsheets of books published in temples often mention the date of publication together with names of the sponsor,

⁸⁸ G. Cho, 'Joseon hoogi wangshil ui checkjanggwa jangcheck e gwanhan yeongu' [A Study of Court Bookbinders and Bookbinding in the Late Joseon Period], *Seojihakyeongu* 31 (2005): 83–4.

calligrapher, engraver and monks who made the woodblocks. These monks also worked as contractors for the local government and sometimes received commissions from private sponsors.⁸⁹ Since Joseon official philosophy was strongly dedicated to the royal version of Confucianism, with an accent put on social hierarchy, the artisan profession could not have been highly appreciated. Even though the government sponsored book publishing, most artisans making books could not expect good pay.

Modern binding in Korea

In the late nineteenth century, the 'Hermit Kingdom' faced the growing pressure of western demands for trade relations. The Joseon dynasty tried to censor western ideas and delay the spread of Catholicism by closing the borders, learning from the example of China about the danger of foreign invasion and unequal treaties. Ironically, even though the enclosure originally postponed western engagement in Korea, it left the country open to yet another threat, this time from its own neighbour.

Meiji Japan, after rapid modernisation, returned to the 300-year-old plans of invasion and first managed the opening of Korea for international, i.e. Japanese, trade, then used its territory as a battleground and eventually, after winning Sino-Japanese and Russo-Japanese wars, invaded and occupied Korea from 1910 to 1945, effectively terminating the Joseon dynasty and causing the decline of traditional Korean bookbinding.

Korean books gradually became affected by western style during the Japanese occupation years. In the late nineteenth century traditional techniques of Korean bookbinding still existed. Woodblocks and old type were still used for printing, the printed sheets contained text lines and outlines and were bound with the five-hole side-stitched binding with an embossed pattern cover. Books were not bound in a western style until 1910. In popular novels, traditional designs using symbols, characters or animals appeared on front covers. Modern iron type made using western technology imported from Japan gradually replaced the traditional type. Outlines and text lines slowly disappeared, and instead of paper twists, wire wrapped with paper was used to bind text blocks.⁹⁰

In the early twentieth century, a large number of printing and publishing companies flourished utilising new printing techniques such as two-colour printing, offset printing and the paper-folding machine. In the 1930s, western binding became intensely popular and many famous painters designed new book covers.⁹¹ Sadly, the quality of book paper was far from Goryeo and Joseon period excellence. Poor-quality newsprint became the major source of paper, which now causes serious conservation problems.

Fortunately, a few artisans have preserved the old techniques, carrying their skills into modern times, continuing the traditional bookbinding methods, taking apprentices and educating the general public. With the improvement of the economy in recent decades, their efforts are supported by central and local governments rewarding the most outstanding with the title of 'Intangible National Heritage'. Nonetheless, the process of strengthening and rebuilding the tradition is a slow one and will certainly require more effort.

⁸⁹ Cheon, *Hanguk Seojihak*, 229.

⁹⁰ S. Yoon, 'Hanguk gundae doseo jangjeong guseong e guanhan yeongu' [A Study of Korean Modern Book Cover Designs] (master's thesis, Department of Industrial Design, Bugyong University, Busan, 2005), 22–6.

⁹¹ D. Pak, *Uri chek ui jangjeonggwa jangjeonggadul* [Korean book cover designs and designers] (Seoul: Yeolhwadang, 1999), 15–19.

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Abstract

This research project presents the history and characteristics of traditional Korean books and bookbinding. The article also discusses some aspects of Chinese books and bookbinding that bear a particularly important relation to Korean books and form the origins and development of bookbinding in East Asia. The style of Korean bookbinding had developed under the influence of China, but its uniqueness can be recognised in paper, printing techniques, bookbinding materials and decoration. The Korean scroll constituted the majority of book formats until the twelfth century. Concertina binding had been used extensively for Buddhist texts since the middle of the Goryeo period. Side-stitched binding became the predominant binding style in Korea from the thirteenth century, long before it became popular in China. Paper mulberry was the dominant material for book paper. From the fourteenth century, the most distinctive feature of Korean publishing was the use of movable metal type, coexisting with the earlier woodblock printing. Yellow dyed, embossed, decorative covers and red thread add to the visual characteristics of Korean books.

Résumé

«Histoire et caractéristiques des livres et des reliures coréens traditionnels»

Ce projet de recherche a pour objet l'étude de l'histoire et des caractéristiques des livres et des reliures coréens traditionnels. On y traite également de quelques aspects des livres et reliures chinois particulièrement proches des livres coréens et qui sont à l'origine du développement de la reliure en Asie de l'Est. La reliure coréenne s'est développée sous influence chinoise mais présente des caractéristiques propres au niveau du papier, des techniques d'impression, des matériaux de reliure et du décor. Le rouleau coréen constitue le format des livres jusqu'au vingtième siècle. La reliure «concertina» ou en accordéon a été abondamment utilisée pour les textes bouddhiques depuis le milieu de la période Goryeo. La reliure brochée à fil apparent est devenue le style de reliure prépondérant en Corée à partir du treizième siècle, bien avant qu'elle devienne populaire en Chine. Le papier à base de mûrier à papier était le principal matériau pour le livre papier. A partir du quatorzième siècle, la principale particularité de l'imprimerie coréenne fut l'utilisation de caractères mobiles en métal en même temps que l'impression xylographique plus ancienne. Les couvertures en relief colorées en jaune et l'utilisation de fil rouge sont des caractéristiques supplémentaires des livres coréens.

Zusammenfassung

„Geschichte und Charakteristika traditioneller koreanischer Bücher und Buchbinderei“

Dieses Forschungsprojekt stellt den geschichtlichen Hintergrund und die Charakteristika traditioneller koreanischer Buchbinderei

und Bücher dar. Im Artikel werden auch einige Aspekte chinesischer Bücher diskutiert, die in einem besonders relevantem Verhältnis zu koreanischen Büchern stehen, und die den Herkunfts- und Entwicklungshintergrund der Buchbinderei in Ostasien darstellen. Der Stil der koreanischen Buchbinderei entwickelte sich unter dem Einfluß Chinas, aber ihre Eigenständigkeit kommt im verwendeten Papier, in den Drucktechniken, Buchbindematerialien und Dekorationselementen zum Ausdruck. Bis in das 12. Jahrhundert bildeten die koreanischen Rollenformate den Hauptteil der Buchformate; während die Leporellobindung seit der Mitte der Goryeoperiode für buddhistische Texte verwendet wurde. Die Seitstichheftung entwickelte sich seit dem 13. Jahrhundert zum dominanten Bindungsstil in Korea, lange bevor sie in China verbreitet war. Hauptmaterial für das Papier von Büchern waren Maulbeerfasern. Ab dem 14. Jahrhundert war das Hauptmerkmal koreanischer Buchproduktion der Gebrauch beweglicher Metalllettern, gleichzeitig mit dem Gebrauch des Blockdruckverfahrens. Die gelb gefärbten, geprägten, dekorativen Buchdeckel zusammen mit rotem Faden bestimmen das Erscheinungsbild koreanischer Bücher.

Resumen

“Historia y características de los libros y las encuadernaciones tradicionales de Corea”

Este proyecto de investigación presenta la historia y las características de los libros y encuadernaciones tradicionales de Corea. En este documento se analizan algunos aspectos de los libros y de la encuadernación chinos que guardan una relación particularmente importante con los libros coreanos y son los que conforman los orígenes y el desarrollo de la encuadernación en Asia Oriental. El estilo de la encuadernación coreana se desarrolló bajo la influencia de China, pero sus características propias pueden ser reconocidas en el papel, la técnica de impresión y los materiales de encuadernación y decoración. Los rollos coreanos constituyeron el formato de libro mayoritario hasta el siglo XX. La encuadernación ‘en acordeón’ fue usada, de forma extensiva, en los textos budistas desde la mitad del período Goryeo. Los cosidos laterales llegaron a ser el estilo de encuadernación predominante en Corea desde el siglo XIII, mucho antes de que llegaran a ser populares en China. El papel de la morera fue el material predominante en el papel de libros. Desde el siglo XIV, la característica más distintiva de las publicaciones coreanas fue el uso de tipos móviles en metal que coexistían con las primeras impresiones en bloques de madera. Las cubiertas decorativas, teñidas en amarillo, en relieve, y con las hebras rojas, eran características específicas de los libros coreanos.

Biography

Minah Song received her BA in sociology from Ehwa Women's University and MA in East Asian Art History from the Academy of Korean Studies in Korea. She holds an MA in Conservation from Camberwell College of Arts, London, and has completed internships at the Hammersmith & Fulham Archives, London; Tate Britain, London; Library of Congress, Washington DC; and a fellowship at the National Portrait Gallery, Washington DC. She was an Andrew W. Mellon Fellow at Worcester Art Museum. She is currently a paper conservator in the Conservation Center for Art and Historic Artifacts (CCAHA) in Philadelphia, USA.

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