

The landscape theme of Han bamboo carving art¹

Xue Gong²; Bianca de Divitiis³

Recibido: 22 de octubre de 2022 / Aceptado: 14 de abril de 2023

Abstract. This paper examines the correlation between the form and surface visual narrative of Han bamboo-carved stationery and painting, with the purpose of comprehending how bamboo carving articulates the material and cultural universe of the Han people. During the mid-Ming and Qing dynasties, the Han literati possessed a large number of exquisite bamboo-carved stationeries with landscape motifs. The relationship between bamboo carving landscape motifs and landscape painting is a manifestation of the fusion of Confucian religions in the Han literati culture. We combine a discussion of the decorative motifs in bamboo carving work together with the brushstrokes, techniques and composition of landscape painting in order to explore the expression of culture in bamboo carving. Although bamboo carving art mainly represents the interaction between bamboo carving artists and the material pursuit of literati, it also exhibits the development relationship between painting and craftsmanship. The landscape motif theme of bamboo carving is the representative of craftsmanship and innovation across materials. This is also a valid reason for investigating how Han craftsmanship gradually became professionalized and artistic. The paper argues that bamboo carvings as utensils created a new stage for Han literati culture and facilitated contact with the private market.

Keywords: bamboo carving; landscape theme; painting; literati culture; visual narrative.

[es] El tema del paisaje en el arte de tallado de bambú de la etnia Han

Resumen. Este artículo examina la correlación entre la forma y la narrativa visual de la superficie de la papelería y la pintura talladas en bambú de la dinastía Han, con el propósito de comprender cómo el tallado de bambú articula el universo cultural y material del pueblo Han. Durante las dinastías Ming y Qing, los literatos Han poseían una gran cantidad de exquisitas papelerías talladas en bambú con motivos de paisajes. La relación entre los motivos de paisajes tallados en bambú y la pintura de paisajes es una manifestación de la fusión de las religiones confucianas en la cultura literaria Han. Combinamos una discusión de los motivos decorativos en el trabajo de tallado de bambú junto con los trazos de pincel, técnicas y composición de la pintura de paisajes para explorar la expresión de la cultura en el tallado de bambú. Aunque el arte del tallado de bambú representa principalmente la interacción entre los artistas del tallado y la búsqueda material de los literatos, también exhibe la relación de desarrollo entre la pintura y la artesanía. El tema del paisaje en el tallado de bambú es el representante de la artesanía y la innovación a través de los materiales. Esto también es una razón válida para investigar cómo la artesanía Han se profesionalizó y se convirtió en artística. El artículo argumenta que los tallados en

¹ This work was supported by the China Scholarship Council (Number: 202106790003) and by the Postgraduate Research & Practice Innovation Program of Jiangsu Province (Number: KYCX22_2292).

² Jiangnan University
E-mail: gongx@stu.jiangnan.edu.cn
ORCID: <https://orcid.org/0000-0003-1573-9118>

³ Federico II University of Naples
E-mail: bianca.dedivitiis2@unina.it
ORCID: <https://orcid.org/0000-0003-0215-9755>

bambú como utensilios crearon un nuevo escenario para la cultura literaria Han y facilitaron el contacto con el mercado privado.

Palabras clave: tallado de bambú; tema del paisaje; pintura; cultura literaria; narrativa visual.

Summary: 1. Introduction, 2. The origin of landscape theme in Han bamboo carving visual narrative, 3. The connection between the landscape theme of bamboo carvings and landscape painting, 4. Motif structure comparison of carved bamboo landscape motif themes, 5. Craft technique comparison of carved bamboo landscape themes, 6. Discussion and conclusion. References.

Cómo citar: Gong, X. & de Divitiis, B. (2023). The landscape theme of Han bamboo carving art. *Arte, Individuo y Sociedad*, 35(3), 823-842. <https://dx.doi.org/10.5209/aris.84344>

1. Introduction

Bamboo carving is the process of designing and creating motifs on the surface or root of bamboo using a variety of knife techniques (Liu 2009, 1:5–10), which originated in the Jiangnan region of China and became a proprietary art genre in the middle of the Ming Dynasty (Wang and Jin 2003, 16). Bamboo carving, as a special material craft, represents a part of elite Chinese literati culture. (Jing Liu 2000).

The utensils made by the bamboo carving techniques are commonly referred to as the stationery on the desks of the ancient Han literati. Despite being functional items, the literati often composed poems to praise the exquisite visual appearance of bamboo-carved stationery and the magnificence of the decorated motifs, demonstrating the unique cultural significance of bamboo in China (Fu, 2001). The surface carvings on bamboo stationeries are the focus of this study. Surface carving encompasses numerous motif themes, among which the landscape motif theme is worth further analysis. These themes demonstrate the interactive transformation between the form and surface narrative of Han bamboo-carved stationery and painting (Guo & Huang, 2014), especially the relationship between the landscape theme on the bamboo carvings and landscape painting, which is a significant factor in the transformation of early Chinese craft forms into professional art. Narrative is the act of representing events or stories through language or imagery (Ryan, 2017). Visual narrative employs graphics and specific forms to depict a scene (Pimenta & Poovaiah, 2010). Bamboo-carved stationery, as a form of visual narrative, portrays landscape motifs within a defined spatial scope. This process embodies Han cultural and aesthetic consciousness. To this day, bamboo carving is considered a material cultural icon in Chinese arts and crafts.

Bamboo carving has attracted numerous researchers from within and outside China in decades past. Jessica Harrison-Hall (2012) and Binbin Hu and Li Zhang (2003) introduced the Chinese literati and cultural phenomenon behind bamboo carving, while Tsui-Hsing Hou Liao (1978) and Huadang Xu (2005) analysed the genre and techniques of the craft. Some studies investigated the personal characteristics of the artistic styles of some notable bamboo carving masters (Wang 1991; Li 2003; National Palace Museum 1995), providing a comprehensive introduction to the origins, techniques, or life experiences of the bamboo carving artists. However, the visual narrative of specific themes found in bamboo carvings, especially those depicting landscape themes, has been insufficiently discussed. Exploring the inter-

play between painting, visual narrative, and bamboo-carved stationery provides valuable insights into how the bamboo carving craft gradually professionalized during the mid-Ming Dynasty and subsequently declined in modern times.

Additionally, studying landscape painting greatly benefits further analysis of the relationship between landscape painting and the landscape motif theme in bamboo carvings. However, current research on landscape painting is mostly focused on the study of landscape painting itself, such as its relationship with the literati (Lee, 1966), its image narrative structure (Verschaffel, 2012), and its spatial construction (Shields & Zheng, 2022). These studies pay little attention to the transition from painting to craftsmanship, which is the new research perspective that this study aims to address. Although landscape painting is a flat, scroll-painting form, it has a unique perspective of space construction (Elkins, 2010, p. 90), and this enables a certain connection with the landscape theme of the bamboo carvings. Therefore, this paper will further investigate the carving motifs of the landscape painting theme as seen on carved bamboo brush-pots. Comparing the landscape motifs of bamboo-carved stationery, especially bamboo-carved brush-pots, with contemporaneous Chinese landscape paintings can help to identify the advantages of bamboo carving art in the popularity among Han people during the mid-Ming and Qing Dynasty (1506-1912).

Notably, the landscape painting is planar, while the bamboo carvings are three-dimensional. The transition from a two-dimensional plane to a three-dimensional space is an interesting design process. Initially, the bamboo carving developed as stationery in the studies of Chinese literati (Guo & Huang, 2014), with more ornamental value within the scope of space. The motifs were designed around the surface of the bamboo, with each rotating face bearing different engraved motifs depicting nature. Depending on the theme of the picture, there could be convex or concave surfaces of varying depths. Previous research has explored the shift from painting to visual narrative, e.g., the change of image space (Dunning, 1991), spatial narrative and the culture of murals (Lavin, 1990), and Asian painting composition and visual narrative (Green, 2013). However, despite the attention paid to visual narrative, few studies have focused on the interaction and imitation of specific object design and painting. The transition from painting to spatial narrative can expand the theme or narrative of the picture and enrich the layout and structure of the theme (Martha & Rtha, 2002). Therefore, the connection between planar painting and three-dimensional carving is also worth discussing. Bamboo carving has high research value, including its relationship with literati and artisans, its carving techniques, and how its visual narrative is constructed within the scope of space.

Focusing on the above issues, this paper investigates the relationship between landscape motifs on bamboo-carved brush-pots and landscape paintings, and investigates how landscape motifs on bamboo carvings from 1506 to 1912 imitated and innovated on carving designs and techniques. Furthermore, the paper explores the cross-media interaction of culture, society, and art presented in visual narratives of bamboo carving. First, we analyse the origin of the bamboo carving and the process of the gradual emergence of landscape themes of bamboo carvings, respectively, during 1506-1912, as the literati, bamboo carving artists and cultural factors facilitated the interaction of these two arts. Next, we further analyze the connection between the landscape motif on bamboo carvings and landscape painting. This study explains a detailed analysis of the compositional form of the landscape motif on bamboo

carvings and the imitation of the landscape brushwork through the bamboo carving knife techniques. Finally, we expounded the reasons why bamboo-carved stationery gradually declined in the early 20th century due to the loss of innovation in technology. We aim to provide new thinking from a craftsmanship perspective regarding the analysis of material cultural artefacts as this paper explores the interplay between landscape painting and bamboo carving, then introduces cultural issues and aesthetic factors to form a comprehensive perspective on the values of Han cultural heritage.

2. The origin of landscape motif in Han bamboo carving visual narrative

2.1. The origin of bamboo carving

Bamboo is an environmentally friendly natural resource, abundant in subtropical China, with an elastic surface that facilitates carving and a bending strength 3.06 times that of wood (Chen et al. 2020; Wei et al. 2019). Therefore, bamboo carving artists are able to easily source and freely carve on its surface.

Bamboo carving has a long history in China. According to archaeological findings, the three animal-footed bamboo emblem (*san shou zu zhu wen diao*) excavated from a Chu tomb during the Western Zhou Dynasty (771-1046 BCE), is the earliest extant bamboo carving craft found so far (Yucui, 1997). This bamboo carving tool exhibits rudimentary decorative patterns. Initially, bamboo was used solely for its practical function as a material for carving simple patterns or recording text. However, it gradually evolved into a specialized craft in the realm of decorative arts. In ancient China, craftsmanship and artistry in folk crafts were often discussed in the same context, as these items were typically carved by folk craftsmen and featured decorative characteristics. The exquisite decorative features of bamboo-carved stationery items gradually expanded their scope from the realm of craftsmanship to that of art. Artisans engaged in bamboo-carving crafts, possessing a wealth of creative ideas and carving techniques, evolved from the identity of artisans to that of bamboo-carving artists. Bamboo carvings were often used as stationery by the literati, and there are many types of carved bamboo stationery: brush-pots, pens, paperweights (*shu zhen*), water containers (*shui cheng*), armrests (*bi ge*), et cetera. This classification separates it from the folk craft of bamboo weaving and carries cultural significance. Bamboo carving was considered a specialized artistic genre during the mid-Ming Dynasty, created by the bamboo carving artist *Zhu He* (1506-1566), who created many bamboo carving techniques to express three-dimensional motifs that seemed painterly (Wang and Weng 1983). From the mid-Ming dynasty, the wide range of the forms and themes found in bamboo carving shows its charm. Taking the bamboo-carved stationery of the mid-Ming and early Qing literati, the carvings have the dual value of being used and admired.

The mid-Ming and Qing Dynasties witnessed the transformation of bamboo carvings from practical tools to stationery with artistic value. During this period, various genres were created, such as the *Jinling genre* in Nanjing, and *Jiading genre* in Shanghai (R. Ji, 1996). According to the Chinese National Academy of Arts (1994, 63) records, *Zhu He* was the originator of the art of bamboo carving in the *Jiading genre*, expressing his imagined three-dimensional craft motif in real space by chang-

ing knife techniques to create thematic spatial effects and imitate painting strokes. When carving the motif in bamboo, *He* not only duplicated the painting theme but used a knife to reproduce the brushstrokes. There are many types of bamboo carving techniques, which will be introduced in detail later, that creatively transform the art of flat painting into three-dimensional space sculpture. For example, the spatial shape of the carved bamboo brush-pot is typical, while the carved bamboo pen holder is elegant in shape, with a hollowed-out interior and flexible material. It requires a sophisticated knife technique in order to create delicate motifs on a three-dimensional surface.

Bamboo carving gradually evolved from a folk craft to art worthy of the attention of the Chinese royal family. As a folk craft product, it flowed from the folk to the court, and the development of bamboo carving went hand in hand with the belief in Confucian culture and the emperor's aesthetic tendencies. The senses of bamboo carving therefore require the Han culture to meet, because different cultures can bring the same senses. (Classen C, 2005, p. 152) In the first year of *Yongzheng* (1723), the emperor ordered the establishment of a workshop (*zao ban chu*) dedicated to producing utensils for his household, staffed with artisans and painters whom he deeply loved (Clunas, 1997). Bamboo carving artist *Feng Xilu* was invited to the palace to carve bamboo crafts (Jin, 1975), and this phenomenon further enhanced the artistic status of bamboo carving and enabled more frequent interactions between bamboo carving and painting.

2.2. The landscape motif in the bamboo carving decorative motif theme

The composition of bamboo-carved landscapes not only imitates the brushstrokes of traditional Chinese landscape paintings, but also enriches the spatial extension of visual narrative from a compositional perspective. The distinctiveness of bamboo carving as compared to other carving types lies in its pictorial representation of space. Stone carving typically features a single image as its decorative hallmark, while the carving decoration in bamboo takes the form of various narrative-themed carvings found around the surface of specific parts of the bamboo (Gong et al., 2022). The decorative motifs of bamboo-carved stationery differ from those of other contemporary crafts, featuring a wide range of motif themes inspired by literary works, landscape views, and stories that are favored by literati (Jun, 2005, pp. 131–139). The typical bamboo carving theme presents the scene more completely through the dimension of space, and these scenes can effectively reconstruct the total space of the decorative motif (Ronen, 1986).

Landscape paintings and landscape views are the material carriers that literati often talked about and yearned for (Murck et al., 1991, p. 86). The landscape motif of Han bamboo carvings embodies the concept of space in two ways: the image of landscape scenery; and the imitation of landscape painting on the surface of the bamboo using carving technique so that the landscape theme on the carving shows the characteristics of the story in terms of space. For example, in the bamboo stone cold spring brush-pot (*zhu shi han quan tu bi tong*; Fig.1), the composition is a loose and orderly design with landscapes and pine trees, carved with a technique called leave green technique (*liu qing*), with the picture slightly recessed in the surface, a technique that provides an effective spatial representation of the landscape's fluidity.

Confucian culture promotes inner spiritual pursuit (*yong xin yu nei*), which is the inner peace of the flowing idea-image. Therefore, the value of bamboo carving decorative motifs is largely composed of Confucian culture, which affects the decorative motifs of bamboo carvings and even the spiritual expression of the pursuers.



Figure 1. Bamboo stone cold spring brush-pot(*zhu shi han quan tu bi tong*).
(Carved by Anonymous bamboo carving artist (Chinese), Qing
dynasty(1644-1911), bamboo carvings. ShangHai museum)

3. The connection between the landscape motif of bamboo carvings and landscape painting

3.1. Bamboo carving landscape motifs imitate landscape painting

Landscape painting has a long history in Han nationality. *Dong Qichang's* book *Hua Zhi* said, 'The literati landscape painting began with Wang Youcheng, and then Dong Yuan, Ju Ran, Li Cheng... and all from Dong Ju' (Miyagawa et al., 1948). Landscape painting reached its peak in the Northern Song Dynasty (960-1127), and saw new developments in technique during the Yuan Dynasty(1271-1368). In the Ming and Qing dynasties (1368-1912), the literati participation further advanced the development of landscape painting, propelling it into a mature stage (Jiang, 2007), and integrating new aesthetic interests as an art form (Jianhua, 2000). The landscape paintings during this period reached a mature stage in terms of manifestation and technique, and this was when bamboo carving became a specialized art genre.

In terms of painting techniques of expression, there are two major categories of landscape painting (Lee, 1966). In the Ming dynasty, Chinese landscape painting was divided into the *Bei zong genre* and *Nan zong genre*. The *Nan zong genre* belonged to the category of fine brushwork (*gong bi*) and the southern to freehand brushwork (*xie yi*). They expressed different brushstrokes for landscapes, stones and other scenes. The visual narrative of bamboo carving imitates the different forms of these two genres of painting through various knife techniques within the spatial

scope. For example, motifs by bamboo carving artist *Zhu He* expertly imitate the *Nan zong genre* forms (Sun & Sun, 2007, p. 5769). The bamboo carving theme is serious and rigorous, with deep and clear marks. In the Qing Dynasty, another famous bamboo carving artist, *Zhou Hao*, was skilled in combining the techniques and compositions of both the *Nan zong genre* and *Bei zong genre* into a new carving style (Ji 1999), characterized by smooth and soft lines.

Landscape paintings reflect both the natural aesthetic style of the ancient literati and the regional styles. The closer relationship between the landscape motifs in bamboo and paintings is largely due to the participation of the literati as suggested by the carved bamboo stationery's classical and elegant aesthetic interest. The rising status of the literati during 1506-1912 became an important link in the cultural cycle connecting carving, poetry, and painting.

3.2. The influence of literati and cultural factors

The literati's spiritual pursuit of idea-image is reflected in the landscape motif of bamboo carvings. In 18th century, the social structure changed and the economic focus shifted to the south (Twitchett et al., 1978, p. 11). Many artisans, painters and literati that gathered in the Jiangnan area began to interact frequently (Shan et al., 1997, p. 382), influencing the transition from painting to craft. The spiritual pursuit of the literati is the link between the paintings and the carving tools during this period. In the early Ming Dynasty (1368-1435), literati painters searched for Taoism in nature, and later painters turned to idea-image to express Confucianism (Wang and Weng 1983). There is an old saying: 'The wise man enjoys water, and the benevolent man enjoys mountains (*Zhi zhe le shan, ren zhe le shui*)'. The literati began to want to escape from reality and pursue the idea-imagery. This was the beginning of the individual will of the literati and the painter becoming embodied, as the free individual consciousness ranged from landscape painting to the landscape motif in bamboo carving. The aesthetic perception of landscape space is an expression of the literati's complex spatial ideology.

The changing identity of the literati has accelerated the economic value of bamboo-carved stationery. The political upheaval of China in the mid-Ming dynasty was full of social change and complexity (Spence & Wills, 1979), when the literati were not only suppressed by the imperial powers but suffered a change in status as the line between literati, merchants and craftsmen began to blur. To escape from reality, the literati during this period began to fanatically collect artifacts, while increasingly often comparing themselves to the bamboo culture. Bamboo enjoyed special spiritual significance in ancient China (Meyer, 2011), and was described in *Shuowen Jiezi* as 'a winter-born grass... All the characters with bamboo belong to the scope of bamboo' (Dao, 2019). Bamboo is frequently used as a radical (*bu shou*) in Chinese characters, and literati wrote many poems in praise of bamboo, comparing it to a gentleman (*Junzi*; Wang 1989, 22). *Bai Juyi* (a Chinese poet) wrote in his poem 'The Story of Raising Bamboo (*Yang zhu ji*)', 'Bamboo is like a virtuous person, why is it? Bamboo is strong, and it is built on virtue, and a gentleman sees its roots... and then he will cultivate his reputation. (*Zhu si xian. He zai? Zhu ben gu, gu yi shu de. Jun zi jian qi ben, ze si shan jian.*)' (xingren, 2002, p. 329). During the Ming and Qing dynasties, bamboo gradually became a popular writing instrument among literati and

was referred to as bamboo-carved stationery. Although literati also used writing tools made of other materials, during the Ming and Qing dynasties, there were more than a dozen types of writing instrument made exclusively from bamboo. Today, there are thousands of bamboo-carved stationeries that have been preserved, reflecting the popularity and widespread use of this material among literati during this period. These material and spiritual qualities can explain why bamboo-carved stationery was widely welcomed by bamboo carving artists and literati in the mid-Ming and Qing dynasties. Therefore, bamboo-carved stationery, especially the brush-pot, was considered to have ‘literary spiritual symbolic meaning’ in China and became material sustenance for the literati.

The communication between literati and bamboo carving artists is a key factor in the rapid development of bamboo carving. During the Ming Dynasty (1368-1644), the emergence of the cultural commodity market resulted in the literati occupying multiple roles such as officials, poets, painters, and artist. The incongruity between these roles prompted the literati to express diverse needs and perspectives, and subsequently, their interests shifted towards an aesthetic inclination involving bamboo crafts and paintings. The literati became a strong link between landscape painting and the motifs of carved bamboo landscape painting, and bamboo carving artists were also closely related to the literati and landscape-painting masters.

At the same time, bamboo carving artists began to achieve design aesthetic literacy and cultural accomplishment, rather than simply carving motifs: for example, bamboo carvers *Zhou Hao* and *Cai Zhao*. *Zhou Hao* studied with the master of landscape painting *Wang Hui* (Xiya 1980) and expertly grafted the painting effects and techniques of the *Nan zong genre* and *Bei zong genre* landscape motif onto carvings (see the next section). Moreover, the bamboo carvers and literati began to cooperate. A classic case was the interaction between the painter *Ren Xiong* and the bamboo carving artist *Cai Zhao*. *Ren Xiong*, a native of *Xiaoshan* Province, was an expert in landscape and figure painting, with an elegant and charming style. Meanwhile, *Cai Zhao* was proficient in carving bamboo, able to carve seals, and proficient in identifying ancient gold and stone inscriptions. His expertise in the art domain included carving bamboo and wood (Qiuhi & Jia, 2006). *Zhao* and *Xiong* spared no effort in creating work through mutual cooperation, with the former carving the painting drawn by *Xiong* on the bamboo. They used a technique called embossed technique (*fu diao*) for bamboo carving on the stationery, which meant the picture appeared unrestrained, and *Cai Zhao*’s knifework is both gentle and vigorous, with no extraneous trace of the blade on the surface. This artifact demonstrates the social as well as cultural interaction between literati, painters and bamboo carving artists during this period.

Therefore, the literati wanted to pursue their spiritual yearning for landscape scenery and the symbolic meaning of Han bamboo culture, two aspects that fostered the imitation of landscape painting in bamboo carving motif. There is a strikingly similar spiritual pursuit shared by both the landscape motifs of bamboo carving and landscape painting.

4. Visual structure comparison of landscape motif themes in bamboo carving

Based on the intersectionality of material cultural development, this paper synthesizes all the collected information in order to analyse the relationship between the landscape motifs in bamboo carving art and Chinese landscape painting during the period 1506-1912. By examining the craftsmanship and similarities between them, we can explore the cultural interaction between landscape painting and bamboo carving of landscape motifs. In the previous section, we analysed the relationship between the landscape motif in bamboo carving and landscape painting from the perspective of the spiritual idea-image, the decorative motif of bamboo carvings, and literati cultural factors. In this section, further verification and analysis will be carried out by visually comparing the landscape motifs in bamboo carving with the landscape painting images.

In order to demonstrate the inseparable relationship between landscape painting and the landscape motif in bamboo carving, we conduct a visual comparison of image structure and narrative to observe the similarities between the painted and carved landscape images. By selecting two groups of representative bamboo carving artists and landscape painting masters, both with landscape as the thematic content, our aim is to reveal the connections between carved bamboo artifacts and landscape painting.

Firstly, the *Qiu Ying* painting called *Tianlai Pavilion Imitates the Song Dynasty Painting* (*tian lai ge mu song ren hua*; Fig. 2A) and *Zhang Xihuan's Pavilion Landscape Brush-pot* (*lou ge shan shui bi tong*; Fig. 2B) were selected. It can be seen that the similarity in this group between the two artifacts is relatively great, both in terms of composition and picture organization. It is noteworthy that Fig. 2A is a two-dimensional painting on silk (*juan*), while Fig. 2B is a three-dimensional carving on a bamboo-carved brush-pot. The composition of the flat painting is imitated on the cylindrical bamboo-carved brush-pot, which demonstrates the artistic exchange and influence between the two forms. Using the image comparison method combined with the analysis of social and cultural factors in this paper, it is found that the landscape motifs of landscape painting and bamboo carving share significant similarities in composition form and image narrative. This transfer of painting onto craftsmanship and aesthetic vision meant bamboo utensils became an art commodity collected and purchased by literati during 1506-1912 (Zhu, 2011), which indirectly made literati more interested in participating in the art of carving bamboo. Therefore, by imitating the literati landscape painting with carved bamboo, the literati group began to change from cooperating with bamboo carving artists to the carving bamboo themselves, and this phenomenon prompted a change in the professionalization of craft.

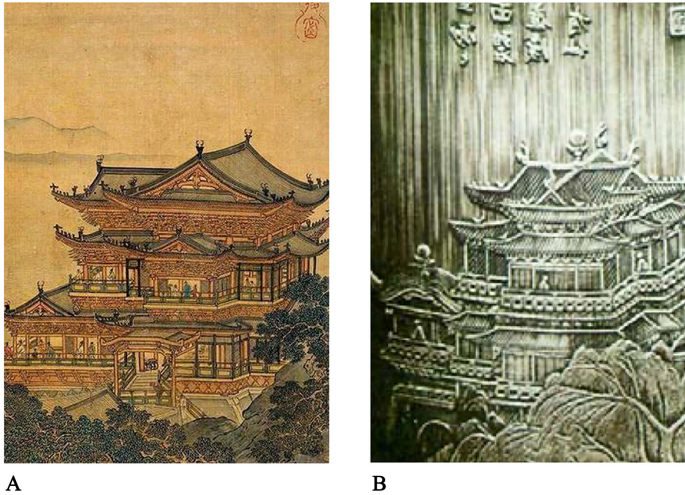


Figure 2. Comparison between *Qiu ying*'s painting and *Zhang Xihuan*'s bamboo carving. Tianlai Pavilion Imitates Song dynasty Painting (*tian lai ge mu song ren hua*), painted by *Qiu ying* (Chinese, 1498-1552), Ming dynasty (1368-1644), silk (*juan*), 27.2 x 25.5cm. Shanghai museum; B. Part of Pavilion Landscape Brush-pot (*lou ge shan shui bi tong*), carved by *Zhang Xihuan* (Chinese), Qing dynasty (1644-1911), bamboo carvings, 10.3x5.9cm. Museum of Fine Arts Boston)

Next, we analyzed the similarity of the artifacts (*Zhou Hao*'s bamboo carving and the *Ni Zan*'s landscape painting). As mentioned above, *Zhou Hao* (1685-1773) was a bamboo carving artist and a landscape painter during the Qing dynasty, while *Ni Zan* (1301-1374) is a representative figure of Chinese landscape painting during the Yuan dynasty (Gu, 2016). The peak period of development for Chinese landscape painting occurred in the Song and Yuan dynasties, during which a large number of master painters and techniques emerged. During the Song Dynasty, the emphasis in landscape painting was on the realistic depiction of the scene, marking an innovative period for the genre. In the Yuan Dynasty, landscape painting shifted towards a focus on expressive brushstrokes, reaching a new pinnacle for the art form. In the Ming and Qing dynasties, as the social status of literati changed, literati landscape painting began to develop in new ways. Particularly in the Qing dynasty, the Four Masters of the Qing Dynasty (*qing si wang*) represented by painter *Wang Shimin*, initiated a trend of emulating the ancient Yuan dynasty style in landscape painting. Therefore, this artistic trend had an impact on the aesthetic and compositional forms of bamboo carving artists. Their representative works are considered suitable for similarity comparison. Specifically, we selected *Zhou Hao*'s Bamboo-carved Brush-pot of Small Scenery in Cloud Forest (*Yun lin xiao jing tu bi tong* ; Fig. 3C) for comparison with Autumn Weather in the Fishing Village Painting (*Yu qiu ji tu*; Fig. 3D), which was painted by *Ni Zan*. It can be seen that the bamboo carving motif in *Zhou Hao*'s work has a high degree of similarity to *Ni Zan*'s work. In terms of composition, the works of the bamboo carving artist not only include the spatial idea-image of the *Nan zong* genre, but also the characteristics of the *Bei zong* genre expression of vast space (X. Gong, 2022). This graft from painting to bamboo carving demonstrates that

Zhou Hao was proficient in both painting and bamboo carving. Therefore, different from other types of carving, *Zhou Ha*’s bamboo carving works imitate and innovate both the narrative structure and thematic content of landscape paintings at a deeper level. The landscape painting image is placed in a three-dimensional carrier – the bamboo carvings – expressing the artistic conception of landscape brush and ink from the *Jiangnan* region in the motif on the bamboo-carved brush-pot. This phenomenon reveals that the bamboo-carved landscape motifs demonstrate strong ties to landscape painting. They integrate the aesthetic concepts of the literati and bamboo carving artists in the Ming and Qing Dynasties (seventeenth century) and expand the visual extension of scroll landscape paintings within the space, thereby allowing the viewer more room for imagination.

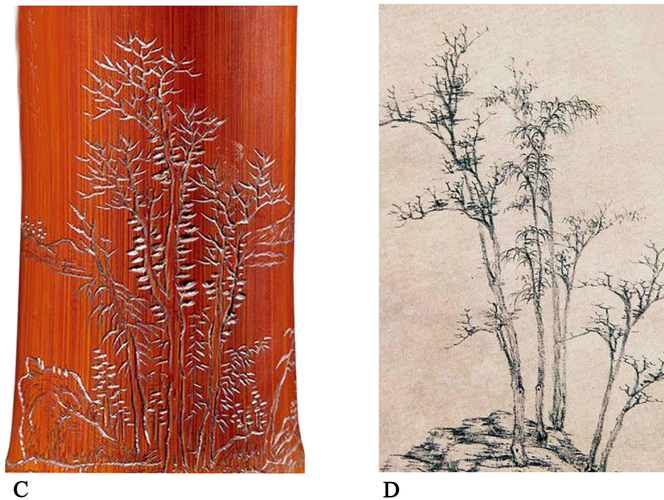


Figure 3. Comparison between *Ni Zan*’s painting and *Zhou Hao*’s bamboo-carved brush-pot. (C. Part of Bamboo-carved Brush-pot of Small Scenery in Cloud Forest(*yun lin xiao jing tu bi tong*), carved by *Zhou Hao* (Chinese, 1685-1773), Qing dynasty(1644-1911), bamboo carvings, 12x5.6cm. ShangHai museum; D. Autumn Weather in the Fisherman Village Painting(*yu qiu ji tu*), painted by *Ni Zan* (Chinese, 1301-1374), ink on paper, 96.1x 46.1cm. ShangHai museum)

The comparison of the two groups shows that the landscape motifs in bamboo carvings and landscape painting effectively embodies the transition from painting to craftsmanship. According to (Gao, n.d.), the exchanges between famous bamboo carving artists and literati in the mid-Ming and Qing dynasty transformed the bamboo carving artists’ consciousness. In ancient China, artisans had low status and were mostly ordinary people. However, due to cultural changes, the function of artisans’ carvings was no longer limited to practical purposes, but began to exhibit aesthetic qualities of craftsmanship. This transformation gradually elevated Han Chinese artisans to the status of artists, thus reflecting an awakening of individual aesthetic consciousness.

The similarity of the pictorial structure between the landscape motif of bamboo carvings and landscape paintings is an effective way to understand the transfer and

development of Han paintings to craftsmanship. This is a new art form and new concept dissemination caused by the change in the Han people's interpersonal network during this period. During the period 1506-1912, bamboo carving artists and literati of the Han nationality began to promote bamboo-carved stationery and endow it with the spirit of elitism, proclaiming that 'a gentleman compares with bamboo (*jun zi yi zhu bi de*)'. Bamboo-carved stationery has gradually become a carrier between culture and art. And its landscape motif is closely related to the spiritual sense of landscape painting. This method of comparing similarities between the landscape motif of bamboo carving and landscape painting enables more comprehensive comparisons so that the composition, technical connections and differences between the carved landscape motif and landscape painting can be analysed. It should be noted that the materials and techniques used in bamboo carving and Chinese landscape painting are very different; this is also an important factor in the gradual decline of bamboo carving in the 20th century. The decline of bamboo-carved stationery was also influenced by social politics, and the level of craftsmanship declined sharply.

5. Craft technique comparison of carved bamboo landscape motifs

5.1. Bamboo carving knife and painting brushstrokes

Different from the colouring of paper in landscape painting, bamboo carving uses a knife instead of brush strokes (Shixiang & Wango H. C., 1983) and bamboo instead of paper, requiring fine carving techniques for small bamboo utensils. Beginning in the mid-Ming Dynasty (1400-1580), bamboo carvings began to incorporate the creative method of ink painting (Liu 2009, 1:8) which has won the love of literati (Liu 2009, 1:4-6). After the literati intervened in the creation of bamboo carvings, they created a new bamboo carving aesthetics and continuously developed new techniques using bamboo knives. These techniques (Fig. 4) include high-relief (*gao fu diao*), low-relief (*di fu diao*), openwork (*tou diao*), round carving (*yuan diao*), and leaving green (*liu qing*). High-relief (*gao fu diao*) is the most commonly used technique by bamboo carving artists in the Ming Dynasty and also the earliest bamboo carving technique, invented by *Zhu He*, the founder of the *Jiading genre* (Guozhen 2020). The *Jiading genre* of bamboo carving tends to combine these techniques to create a strong visual effect of visual narrative, and it is more inclined to carve with slight ups and downs within the range of space representation. These techniques can be used together so that the bamboo carving can produce rich visual effects of different heights in space according to the needs of the motif. With the development of bamboo carving, bamboo carving artists have further improved their skills, resulting in new bamboo carving techniques, such as the embossed technique (*bao di yang wen*), stick bamboo spring (*tie huang*), and plane intaglio technique (*ping mian qian ke*; Jun 200).

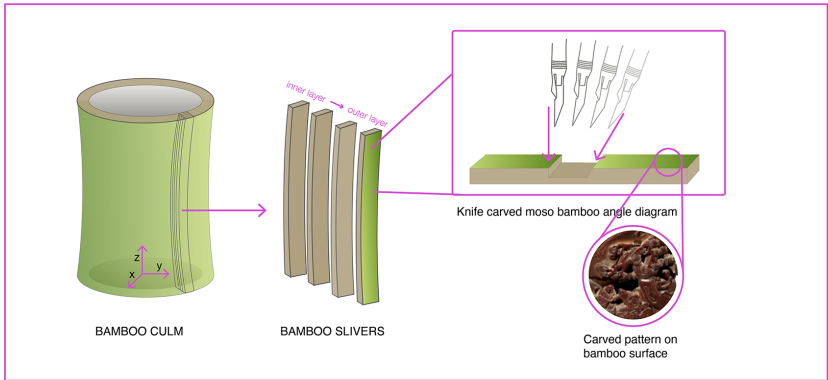


Figure 4. Bamboo carving technique.(Author made)

The landscape motif of carved bamboo simulates the transition effects of ink and wash between landscapes by carving bamboo with knives within the space. When bamboo carving technology space is presented, the type of knife used is very special, as it is used as a brush. Each genre also differs in its approach to space carving for bamboo, using a variety of carving knives (Fig.5E) including flat-bore, oblique-bore, round-headed, and bottom-taking knives. The knife, essentially, is the efficacious method an artificer can use to form carved bamboo images. Different carving knives and different methods can produce different bamboo surface effects, and cutting marks vary according to the needs of the screening. This carving method has inspired rich new approaches to the carving space.

In terms of technique, landscape paintings specialize in texture strokes to represent mountains, stones, and water. Similarly, bamboo carvings also depict scenery using a knife, achieving a similar ink wash effect as in landscape painting. For example, *Zhou Hao*'s techniques to depict strange mountains and rocks are similar to brush texturing techniques called texture strokes (*cun fa*). Texture strokes (*cun fa*) are indispensable in landscape painting (Ruzhen, 1984) and there are many kinds of texture strokes (*cun fa*) in landscape painting (He, 2015), which we will also compare with bamboo carving techniques (Fig.5F). The landscape brush method pays attention to 'dense, light, broken, splashed, stained, burnt, and sheltered (*nong, dan, jiao, shi, po, ji, po*)' (Jisheng & Jason C, 2004) while the method of accumulating ink in landscape painting emphasizes the meaning of brushwork with rich layers. We can find that variations in the thickness of the strokes are imitated by variation of the knife's hard and light carving. Plane intaglio technique (*Ping mian qian ke*) is used to carve the shape of a rock through the effect of carving depressions into the three-dimensional surface of bamboo. For example, *Zhou Hao* (Fig.6G) imitated *Nan zong genre*'s depiction (Fig.6H) of three-dimensional scenery in bamboo and used shallow and thin concave lines to depict the slender, clear, and smooth lines of the willow. The presentation of the three-dimensional motif of bamboo carving integrates the scenery, the text, the meaning, and the object through the etched technique, narrating the landscape interest through the bamboo carving arts, while integrating the literati style.

E. Knife and Carving Bamboo



F. Bamboo carvings imitate texture strokes(*cun fa*)

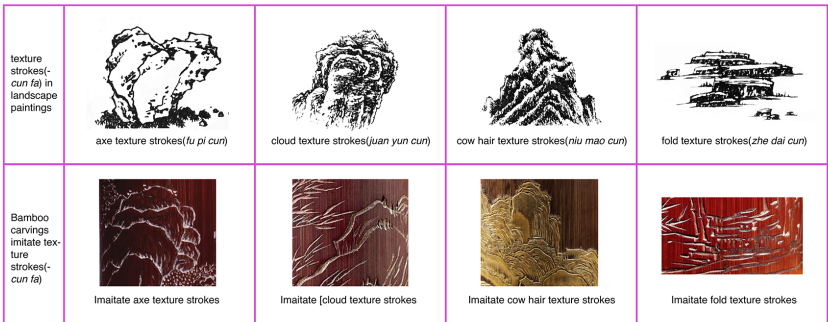


Figure 5. Bamboo carving knife techniques and comparisons with texture strokes.
(E. Knife and Carving Bamboo, Author made; F. Bamboo carvings imitate texture strokes (*cun fa*), Author made)

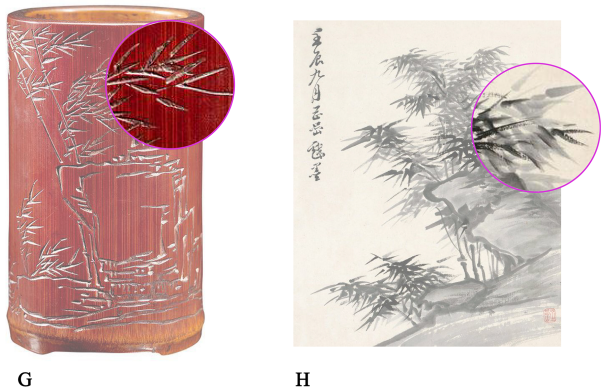


Figure 6. Comparison of Zhou Ha's bamboo carving work and landscape painting.
(G:Bamboo carved bamboo stone picture brush-pot(*zhu shi tu bi tong*), carved by Zhou Hao (Chinese, 1685- 1773), 17th century, bamboo carvings, 14.8x8.9cm. Shanghai Museum; H: Landscape Characters Book(*shan shui ren wu ce*), painted by Zhou Hao (Chinese, 1685-1773), 17th century, ink on paper. Nanjing Museum)

Bamboo carving is a fine example of Han craftsmanship that brings together landscape painting, craftsmanship, motifs, and composition in tiny objects. One of the keys to the successful grafting of bamboo carving techniques is that the techniques must be diversified to effectively model the so-called painting techniques of the *Bei zong genre* and *Nan zong genre*. The influence of spirit depiction through shapes (*xing shen jian bei*) creates a similarity between the landscape motifs of bamboo carving and landscape paintings. From a spatial perspective, the landscaping trend is revealed through knife technique changes, and the two arts reflect the taste and scenery of literati between 1506 and 1912 through different techniques.

5.2. Bamboo carving composition and decline

In composition, the landscape motif in bamboo carving expands the spatial expression of landscape painting from the spatial perspective. As a landscape painter during the Northern Song Dynasty (1000-1090CE), *Guo Xi* proposed a theory called Three Distances Method (*san yuan fa*) that divided landscape painting into three perspectives, including level distance (*ping yuan*), deep distance (*shen yuan*), and high distance (*gao yuan*) (Maria Cheng, 2018). Alexandra Green (2013, 248) found that Asian paintings have many scroll-like compositions, with scenes extending horizontally from both sides of the paper. However, the visual effect of the subject of the painting is limited by the paper size. The spatial expression of the bamboo-carved stationery makes up for the lack of limited painting space.

It can be seen from Fig.7 that bamboo carving can shape the space of landscape motifs. *Zhang Xihuang* was an expert in bamboo carving and is skilled in using the leaving green technique (*liu qing*) to depict landscape motifs. This involves removing, leaving less, leaving more, or preserving certain parts of the bamboo surface to create a well-organized layout for the content of the bamboo motif and to establish a hierarchy of objects. The bamboo surface produces the effect of natural staining with this technique. From the composition point of view, the landscape motif on this carved bamboo brush-pot is composed of level distance (*ping yuan*). According to the analysis, *Zhang Xihuang's* bamboo carving reproduces the composition of landscape painting, as the *Zhang Xihuang* bamboo carving not only adopts the similar level distance as the painting by landscape painter but also has the same meticulous style.

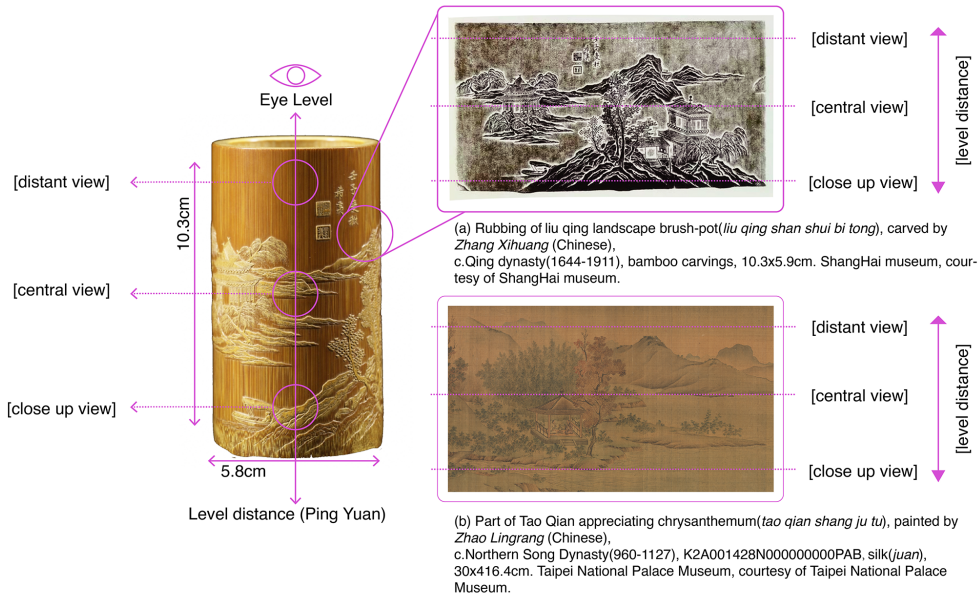


Figure 7. Composition comparison between Zhang Xihuang's bamboo carving works and landscape paintings

Zong Baihua (2005) recorded, 'The method of Chinese landscape painting is basically to take a big view of the small, and not to describe the space from a fixed angle'. The combination of writing and imagery in this sincere style is mainly motivated by Han regional culture, in response to the attempts of the literati of a certain era to express their inner self and describe their living environments. Bamboo-carved stationery enhances the visual continuity of the motif. The extension from painting to visual narrative can more intuitively affect the viewer's perception of content boundaries and convey specific social and cultural concepts, and the impact of this shift comes from a sense of two-dimensional and three-dimensional boundaries. The landscape motifs in the bamboo carvings of the Ming and Qing dynasties imitated the pictorial form of landscape paintings, and this phenomenon reflects a new path of expression and craftsmanship different from other material works. Therefore, bamboo carving art reached its peak in the period 1506-1912.

Since the 20th century, the identity of bamboo carvings has undergone tremendous changes under the influence of Chinese social and political culture. It has changed from practical stationery to intangible cultural heritage. On the one hand, this change of identity makes bamboo carving unable to meet the aesthetic needs of mass marketization. On the other hand, the techniques of bamboo carving are becoming more and more shoddy in order to meet the market model of mass production. This phenomenon led to the disjointness of bamboo carving in the 20th century. Indeed, the pictorial carving technique of bamboo carving is considered part of the Han literati culture. Although the visual experience of ancient bamboo carving is mostly created by literati, it has been gradually accepted and used by the public in the wave of society as a form of material cultural artwork. Therefore, as intangible cultural heritage, bamboo carving art should maintain its own unique spiritual and

cultural heritage, constantly innovate and change bamboo carving techniques, and reproduce the revival of bamboo carving art.

6. Discussion and conclusion

Considering the cultural significance of cross-material arts and crafts from the perspective of small objects, can help discover the significance of enhancing the aesthetic awareness in craft design. In our study, we found that the innovation and progress of bamboo carving knife techniques are often related to the imitation of the brush and ink effects of Chinese landscape paintings. Inspiration drawn from landscape paintings can also be frequently observed in the visual narratives of bamboo carvings. It can be seen that the design and creation of carved bamboo landscape paintings largely stem from imitation of and innovation from the composition of Chinese landscape paintings. In the period 1506-1912, landscape painting and landscape motifs on carved bamboo brush-pot not only shared many similarities in appearance but a similar cultural background as well. Under the influence of literati taste, the content of painting was grafted onto carving, reflecting the space for interaction between materials and art culture. Explore the evolutionary characteristics between painting and craft, in order to analyse the process of the gradual specialization of Han craft, a process involving discussing the interactions between literati and bamboo carving artists. This study reveals that as the social status of literati changed, they began to transform into artists, leading to a clear aesthetic awareness emerging in China during this period. The boundaries of social classes began to blur, and craftsmen started to transform into designers or artists.

Bamboo carving, especially bamboo-carved brush-pots, are analyzed in terms of their material and spiritual processes of carving, revealing the cultural space controlled by literati of that period. This form of arts and crafts emerged in regions outside of the imperial court and was created by both folk bamboo carving artists and literati groups, some of whom were formerly artisan. The landscape drawings of carved bamboo artefacts underwent a transition from plane to space and the continuous shaping of the shape and structure of space during that period. The bamboo carving techniques of using a knife instead of brushstrokes embody the aesthetic quality of traditional Han craftsmanship. The landscape painting imagery on bamboo carvings has a humanistic charm. Although the space for carving landscape motifs on bamboo is limited, the carved bamboo landscape motifs can draw the viewer's gaze into the distance, employing a spatial shaping of the distant image of landscape painting. This interaction between the visual design of bamboo carvings and the distant imagery of landscape painting creates a powerful spatial visual effect. This interaction between the material culture design of bamboo carvings and landscape painting is a powerful testament to the rising status of arts and crafts in the Han nationality.

The development of Han nationality bamboo carving art from peak to decline reflects the cultural connotation of bamboo carving art and the change of bamboo carving techniques. When bamboo carving techniques began to imitate the characteristics of landscape painting, the landscape motif of bamboo carving became a subversive representative decorative motif for the development of bamboo carving

art. This means the spiritual embodiment of Han literati culture. However, when the bamboo carving technique began to lose its innovative power gradually and repeatedly imitated some motif elements, the technique became an important factor preventing bamboo carving art from entering the mass market. For bamboo carving artists, the marketization process in the 20th century requires them to be like artists, transforming the visual effects and usage of bamboo carvings into high-quality, innovative works of art. The exquisite techniques of bamboo carving have become part of the intangible cultural heritage of the Han nationality.

References

- Baihua, Z. (2005). *Aesthetic Walk* (美學散步). Shanghai People's Publishing House.
- Chen, M., Ye, L., Li, H., Wang, G., Chen, Q. & Fang, C. (2020). Flexural Strength and Ductility of Moso Bamboo Department of Wood Science, Faculty of Forestry, The University of British Columbia, Vancouver, V6T1Z4, Canada; b Key Laboratory of Bamboo and Rattan Science and Technology of the State Forestry Adminis. 1–22.
- Chinese national academy of arts. (1994). *Art History Series* (美術史論丛刊). Culture and Art Press.
- Classen C. (2005). McLuhan in the rainforest: The sensory world of oral cultures. In *Empire of the Senses: The Sensual Culture Reader*. BERG. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003230700-15/mcluhan-rainforest-constance-classen>
- Clunas, C. (1997). *Art in China*. Oxford University Press, USA.
- Dao, Z. (2019). *History of Chinese Folk Crafts*. DeepLogic.
- Dunning, W. V. (1991). *Changing images of pictorial space: A history of spatial illusion in painting*. Syracuse University Press.
- Elkins, J. (2010). *Chinese Landscape Painting as Western Art History*. Hong Kong University Press.
- Fu, J. (2001). Chinese moso bamboo: Its importance. *Bamboo*, 22(5), 5–7.
- Gao, L. (n.d.). *Zunsheng Bajian* (遵生八箋), Volume 14.
- Green, A. (2013). *Rethinking Visual Narratives from Asia: Intercultural and Comparative Perspectives*. Hong Kong University Press.
- Gong, X., Guo, Z. & Xie, Z. (2022). Using Kansei Engineering for the Design Thinking Framework: Bamboo Pen Holder Product Design. *Sustainability*, 14(17). <https://doi.org/10.3390/su141710556>
- Gong, X. (2022). Exploratory quantitative analysis of the relationship between bamboo carving and landscape painting via SSIM. *2022 15th International Symposium on Computational Intelligence and Design (ISCID)*, 290–293. <https://doi.org/10.1109/IS-CID56505.2022.00071>
- Harrison-Hall, J. B. T.-A. (2012). *Carved with ease: Carved bamboo objects have traditionally been associated with Chinese scholar-artists*. 176(603), 50.
- Hu, B. & Zhang, L. (2003). The phenomenon of Confucianism in Baoqing bamboo carvings and its causes. *Collectors*, 11, 17–22.
- Ji, R. (1996). On the relationship between the court and folk craftsmanship in the early Qing Dynasty—From the two collections in the 'National Palace Museum'. *Forbidden City Academic Quarterly*, 1, 94.
- Jianhua, Y. (2000). *Editor of Ancient Chinese Painting Theory* (中國古代繪畫理論). People's Fine Arts Publishing House.

- Jing, L. (2000). The literati are elegant and dry bamboo becomes precious—On the art of bamboo carving in the late Ming and early Qing dynasties. *Forbidden City Publishing House*, 02, 11-16.
- Jinji, S., & Hai, S. (2007). *Collection of Chinese Archaeology: Song, Yuan, Ming and Qing Dynasties* (中國考古集成: 宋元明清). Zhongzhou Ancient Books Publishing House.
- Jisheng, G. & Jason C, K. (2004). *Transforming traditions in modern Chinese painting: Huang Pin-hung's late work*. Peter Lang.
- Jun, L. (2005). *Ming and Qing Bamboo Carvings* (明清竹刻). Ningbo Publishing House, 4-10.
- Ke, H. (2015). *Research on Chinese Painting Techniques* (中國畫技法研究). Beijing Book Co. Inc.
- Lavin, M. A. (1990). *The Place of Narrative: Mural Decoration in Italian Churches, 431-1600*. University of Chicago Press.
- Lee, S. E. (1966). Literati and Professionals: Four Ming Painters. *The Bulletin of the Cleveland Museum of Art*, 53(1), 2-25.
- Li, J. (2003). Zhou Hao, a famous bamboo carving master in Qing Dynasty and his artistic style. *Collectors*, 08, 38-41.
- Liao, T.-H. H. (1978). *Southeast Asian Bamboo Art: Contemporary Handwoven and Classical Carved*. Oklahoma State University.
- Limin, G. (2016). *All in One: A Study of Traditional Chinese Landscape Painting* (全神盡相: 中國傳統山水畫研究). Beijing Book Co. Inc.
- Lin, G. & Huang, Q. (2014). Perspective on the spatial expression in the carving of liuqing bamboo. *Decorate*, 08, 131-132. <https://doi.org/10.16272/j.cnki.cn11-1392/j.2014.08.037>
- Maria Cheng, W. H. T. (2018). *Essential Terms of Chinese Painting*. City University of Hong Kong Press.
- Martha, H., & Rtha, H. (2002). *An Entrance for the Eyes: Space and Meaning in Seventeenth-Century Dutch Art*. University of California Press.
- Meyer, D. (2011). *Philosophy on bamboo: Text and the production of meaning in early China* (Vol. 2). Brill.
- Murck, A., Fong, W. C. & Fong, W. (1991). *Words and Images: Chinese Poetry, Calligraphy, and Painting*. Metropolitan Museum of Art.
- National Palace Museum. (1995). *Gu gong wen wu yue kan*. Guo li gu gong bo wu yuan.
- Pimenta, S. & Poovaiah, R. (2010). On defining visual narratives. *Design Thoughts*, 3, 25-46.
- Qiuhi, G. & Jia, H. (2006). *Chinese Arts & Crafts*. China Intercontinental Press.
- Ronen, R. (1986). Space in fiction. *Poetics Today*, 7(3), 421-438.
- Ruoxin, J. (1999). *Ming and Qing Bamboo Carving Techniques* (明清竹刻藝術). National Palace Museum
- Ruzhen, Z. (1984). *Antique Guide*. (古董指南). Beijing China Bookstore.
- Ryan, M. (2017). Narrative. *A Companion to Critical and Cultural Theory*, 517-530.
- Shan, Sh, Yu, Zh. & Zhu, Ch. (1997). *Proceedings of the Forbidden City Society of China* (中國紫禁城學會論文集). Forbidden City Press.
- Shields, R. & Zheng, G. (2022). Ink wash virtualities in Qing landscape painting. *Landscape Research*, 47(8), 1039-1051. <https://doi.org/10.1080/01426397.2022.2121809>
- Shixiang, W. & Wango H. C., W. (1983). *Bamboo Carving of China*. China Institute in America.
- Shiwiang, W. & Xiya, J. (2003). *Carved Bamboo Words* (刻竹小言). China Renmin University Press.
- Spence, J. D. & Wills, J. E. (1979). *From Ming to Ch'ing: Conquest, Region, and Continuity in Seventeenth-Century China*. Yale University Press.

- Twitchett, D. C., Fairbank, J. K. & Feuerwerker, A. (1978). *The Cambridge History of China*. Cambridge University Press.
- Verschaffel, B. (2012). The world of the landscape. *CLCWeb: Comparative Literature and Culture*, 14(3), 2.
- Wang, S. (1991). Three historical materials about Zhu Xiaosong(in Chinese). *Journal of the Palace Museum*, 04, 17–19. <https://doi.org/10.16319/j.cnki.0452-7402.1991.04.002>
- Wang, S., Weng, W. H. C., Gallery, C. H., Art, N.-A. M. of, & Francisco, A. A. M. of S. (1983). *Bamboo Carving of China* (Issue 18056). China House Gallery, China Institute in America.
- Wei, X., Zhou, H., Chen, F. & Wang, G. (2019). Bending flexibility of moso bamboo (*Phyllostachys edulis*) with functionally graded structure. *Materials*, 12(12), 2007.
- Xingren, W. (2002). History of Chinese Essays (中國雜文史). Shanghai People's Publishing House.
- Xiubi, J. (2007). On Chinese Landscape Culture and Landscape Spirit. *Qinghai Social Sciences*, 05, 22–25. <https://doi.org/10.14154/j.cnki.qss.2007.05.010>
- Xu, H. (2005). Bamboo carving art in Ming and Qing Dynasties. *World Bamboo and Rattan Communication*, 02, 44–46.
- Yuanming, W. (1989). *Collection of Liu Yuxi's Poems and Essays* (劉禹錫詩文賞析集). Bashu Bookshelf.
- Yuanyu, J. (1975). *The Bamboo Man* (竹人錄): Vol. Art Series 2 Vol.5. Art and Literature.
- Yucai, D. (1997). *Shuo Wen Jie Zi* (說文解字). Jiangsu Guangling Ancient Book Engraving and Printing Society.
- Yue, L. (2009). *The Complete Collection of Chinese Bamboo and Wood Angler* (中國竹木牙角器全集) (Vol. 1). Heritage Press.
- Zhu, T. (2011). Indians: From Craftsmen to Literati: A Preliminary Study on the Changes of Indians' Identity in the Late Ming and Early Qing Dynasties and Its Background(in Chinese). *Social Science Forum*, 05, 35–46. <https://doi.org/10.14185/j.cnki.issn1008-2026.2011.05.008>