Matters and Makers to Embellish: Lobed Ornamentation in Silver, Ceramics, and Lacquer in Northern Song China (960 – 1127)

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Abstract

This thesis investigates the shared lobed ornamentation across diverse crafts during the Northern Song period (960 – 1127), from silver prototypes to their subsequent transmedial interpretation in ceramics and lacquerware. I attend to each medium's production process to understand the role of materials, technological innovation and maker's agency in the nuanced interpretations of the lobed shape. I posit that ceramics and lacquerware employ unique approaches in emulating lobed ornamentation. While Ding white ceramics largely reference the silverware tradition in both its form and materiality, lacquerware exploits its unique properties to imbue the lobes with organic qualities and tactile elements, suggesting a departure from metal prototypes. Considering the maker's role, Ding ceramics exhibit apparent traces of the maker's hands from a standardized production chain. In contrast, lacquerware from individual workshops eliminates human traces to evoke the impression of a "blooming" flower. In short, this project highlights the artistic dialogue between silverware, ceramics, and lacquerware in the Northern Song period through the interplay between form, materiality, and craftsmanship.

Cette thèse étudie l'ornementation lobée commune à divers objets artisanaux pendant la période des Song du Nord (960 - 1127), depuis les prototypes en argent jusqu'à leur interprétation transmédiale ultérieure dans les céramiques et les laques. Je m'intéresse au processus de production de chaque médium pour comprendre le rôle des matériaux, de l'innovation technologique et du rôle du créateur dans les interprétations nuancées de la forme lobée. Je postule que les céramiques et les laques utilisent des approches distinctes pour imiter l'ornementation lobée. Alors que les céramiques blanches Ding font largement référence à la tradition de l'argenterie, tant dans leur forme que dans leur matérialité, les objets en laque sont

imprégnés de qualités organiques et d'éléments tactiles, ce qui suggère une divergence par rapport aux prototypes en métal. En ce qui concerne le rôle du créateur, les céramiques Ding présentent des traces apparentes des mains du créateur issues d'une chaîne de production standardisée. En revanche, les laques provenant d'ateliers individuels éliminent les traces humaines pour évoquer l'impression d'une fleur "épanouie". En résumé, ce projet met en lumière le dialogue artistique entre l'argenterie, la céramique et la laque à l'époque des Song du Nord, à travers l'interaction entre la forme, la matérialité et l'artisanat.

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Introduction

Refined in forms and glazes, ceramics from the Song period (960 – 1279 CE) have long been regarded as some of the finest in Chinese history, which has captivated the interest of both contemporaneous collectors and modern scholars. Current scholarship often focuses on the shape, glazes, and decoration on a given ceramic piece, identifying its type, and contextualizing it within a group of objects originating from the same kiln site or in comparison with other types of ceramics. However, this methodological approach often neglects a broader consideration of the concurrent development of other craft industries during the Song period, as well as the potential interconnection of ceramics with the diverse crafts that share the same temporal and geographical context.[1]

In the context of my project, I define crafts as objects with functionality, yet they do not exclusively serve utilitarian purposes. Indeed, there was a flourishing development of various crafts at the same time as the advances of ceramics industry in the Song period. The imperial court took interest in collecting not only ceramics, but also lacquers, textiles, and other luxury goods.[2] Craft products were bought up by the state at fixed prices in so-called *hemai* 和買 system (acquisition by [mutual] agreement). Alternatively, the provinces delivered a fixed quota of manufactured and other commercial goods to the state as 'tribute.'[3]

The symbiotic relationship between state patronage and craft production fostered a more flexible labour market within the Song period. Overtime, guilds developed from instruments of state control to influential bodies of self-organization.[4] Consequently, the boundaries between

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[1] Qin Dashu 秦大树, "窑系概念的形成、 意义及其局限性." *Wenwu* 文物 (2007): 60 – 67.

[2] Christine Moll-Murata, *State and Crafts in the Qing Dynasty (1644-1911)* (Amsterdam: Amsterdam University Press, 2018), 50.

[3] Christine Moll-Murata, *State and Crafts in the Qing Dynasty (1644-1911),* 50.

[4] Christine Moll-Murata, *State and Crafts in the Qing Dynasty (1644-1911),* 50.

the public and private sectors were not made impermeable by laws or regulations.[5] This relationship was key in fostering an open environment for mutual inspiration between various crafts.

Notably, there was a series of developments of crafts utilizing a single shape – a lobed ornamentation – in the Northern Song period (960 – 1127). The lobed form originated in gold and silverware in the Tang period (618 – 907) under Sassanid influence. Subsequently, it became a source of inspiration for other crafts in the Northern Song period, such as ceramics and lacquerware. Ding-type ceramics, renowned for its production in the province of Hebei 河北 and distinguished by a white body and transparent glaze, widely incorporated the lobed configuration in the design of objects. Concurrently, monochrome or bi-coloured lacquerware from workshops in southern China equally embraced and innovated the lobed form. This integration of the lobed shape into these various mediums demonstrates a shared ornamentation and artistic dialogue between metalware, ceramics, and lacquerware. In other words, this shared design suggests interconnected evolution of craftsmanship across different regions and materials during this period.

The phenomenon of various mediums taking on the same easily recognizable shape was also a practice in the antiquarian movement in the Northern Song period. These archaistic objects were also known as *fanggu qi* 仿古器, or objects imitating antiquity.[6] Many of them were ceramic reproductions of ritual vessels made of bronze or jade, intended for both the imperial

[5] Christine Moll-Murata, *State and Crafts in the Qing Dynasty (1644-1911),* 54
[6] Yunchiahn C. Sena, *Bronze and Stone: The Cult of Antiquity in Song Dynasty China* (Seattle: University of Washington Press, 2019), 65.

court and the high elite market. Some objects closely follow the ancient prototypes in terms of both formal features and ritual functions to revive and preserve lost traditions.[7]

Although the reproduction of the lobed design in various mediums also play into the idea of emulation and translation of form, it does not align with the context of antiquarianism. Many of the objects that attracted the interest of antiquarians' date from the Shang (c.1600 BCE – c. 1046 BCE) and the Zhou (c. 1046 BCE – c. 256 BCE) periods.[8] In the context of lobed wares, the short temporal gap between the Tang and the Northern Song period does not allow it to be qualified as a "distant" past. The makers and viewers would not have classified these objects as ancient. I therefore propose to study the sharing of lobed shape under a new lens, as a cultural practice distinct from antiquarianism.

Previous scholarly works illuminate the striking formal similarities between metalware, ceramics, and lacquerware in the Song period. For example, Yuan and Lovell highlighted the pronounced resemblance between ceramics and lacquerware in the Song period,[9] suggesting the possibility that one is the direct derivation from the other.[10] Rawson equally explored the relationship of ceramics with vessels in different materials, such as metalware, to elucidate the rationale behind the preference for thin foliate shapes and smooth surfaces.[11] Her argument

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[7] Lothar Von Falkenhausen, "Antiquarianism in East Asia," essay, in *World Antiquarianism : Comparative Perspectives* (Los Angeles: Getty Research Institute, 2014), 35–66, 44.
[8] Yunchiahn C. Sena, *Bronze and Stone: The Cult of Antiquity in Song Dynasty China,* 77.
[9] Yuan Quan 袁泉, "Lüelun Songyuan shiqi shougongye de jiaoliu yu hudong xianxiang 略論宋元時期手工業的交流與互動現象----以漆器為中心," 文物 *Wenwu* 11 (2013): 63–73, 64.
[10] Hin-Cheung Lovell, "Sung and Yüan Monochrome Lacquers in the Freer Gallery," *Ars Orientalis* 9 (1973): 121-130, 128.
[11] Jessica Rawson. "Sets or Singletons? Uses of Chinese Ceramics: 10th-14th Centuries." *Journal of Song-Yuan Studies*, no. 23 (1993): 71–94. http://www.jstor.org/stable/23495797, 72.

posited that one such emulation represents an endeavor to elevate ceramics to a status akin to that of metal objects.[12]

While building upon existing scholarly discourse, I do not wish to delineate a clear hierarchy among materials, nor do I wish to subscribe to a strictly unidirectional relationship among various crafts regarding the issue of imitation. Instead, my goal is to explore the concept of shared lobed ornamentation as a transmedial phenomenon. This entails examining the roles of materials, innovative production methods, and artistic agency in the context of ceramics and lacquerware during the Northern Song period. While acknowledging the significance of objects' circulation and social roles, this thesis primarily concentrates on the production process and the agents involved, whether material or human. I define transmedial as non-media specific phenomena that highlight the processes of transferring certain aspects between the mediations, and consequently, not others.[13] I thus read the transmedial adaptation of the lobed form as specific to the distinct materials and artistic tradition of ceramics and lacquer, respectively.

I use the concept of ornament to characterize the lobed shape, as it has the capacity to extend beyond individual mediums and cultural exchanges to understand the interconnectedness of diverse artistic traditions. As early as the 19th century, Owen Jones argued in *The Grammar of Ornament* (1856) that one of the universal qualities among humankind is the desire for ornament.[14] In *The Mediation of Ornament* (1995), Oleg Grabar contends that ornament's crucial function is in mediating between object and viewer. Attending to Islamic art, he argues that

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[12] Jessica Rawson. "Sets or Singletons? Uses of Chinese Ceramics: 10th-14th Centuries," 84.
[13] Jørgen Bruhn, *The Intermediality of Narrative Literature: Medialities Matter* (London: Palgrave Macmillan, 2016), 26.
[14] Owen Jones, *The Grammar of Ornament: A Visual Reference of Form and Colour in Architecture and the Decorative Arts* (Princeton, New Jersey: Princeton University Press, 2016), 31.

ornament is a powerful and privileged means of communication.[15] Echoing Grabar's thinking, Alfred Gell conceives ornament as a social agent capable of mediating social relations.[16]

Building upon Grabar and Gell's theoretical framework, I consider the generative nature of ornament as a mediator between the objects and their viewers. In addition, I attend to the materiality of the object in contributing to the communicative power of ornament by treating ornament not as separable from the material surface, but integral to it. Jonathan Hay terms such three-dimensional, sculptural presence as object-body.[17] I also leverage the material depth of objects to think of ornament three-dimensionally as it interacts with its surroundings.

When I refer to "materiality," I adopt the current definition as that which constitutes the 'matter' of something, as opposed to formality.[18] Emphasizing the materiality of objects foregrounds the materials as they contribute to the creation and meaning of the objects, akin to the role of the maker. Methodologically, the "material turn" demands that art historians consider the role, agency, potentiality, and constraints materials have on makers and objects.[19] To provide a historicized discussion of materiality, I foreground direct sensory perception of the objects and the matter of which they are constituted. I utilize contemporaneous poetry and literary sources to contextualize the materiality of objects within historical narratives. Moreover, I incorporate my

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[15] Oleg Grabar, *The Mediation of Ornament* (New Haven: Yale University Press, 1992), 45.
[16] Alfred Gell, *Art and Agency : An Anthropological Theory* (Oxford: Clarendon Press, 1998), 22.
[17] Jonathan Hay, *Sensuous Surfaces: The Decorative Object in Early Modern China* (London: Reaktion Books, 2010), 68.
[18] Jeehee Hong, "Material, Materiality," Material, materiality, 2003, https://csmt.uchicago.edu/glossary2004/material.htm.
[19] Orianna Cacchione and Wei-Cheng Lin, *The Allure of Matter: Materiality across Chinese Art* (Chicago: Published by the University of Chicago's Center for the Art of East Asia and Smart Museum of Art, 2021), 19.

own sensory experiences of objects and their surroundings into my analysis, attending to what Jules Prown terms "creative imagining."[20]

The pursuit of sensory knowledge was also a significant aspect of the intellectual discourse during the Northern Song period. Philosopher Shen Kuo 沈括 (1032 – 1096) emphasized the auditory and visual aspects of learning as direct pathways to understanding, which laid the groundwork for higher forms of knowledge.[21] The concept of "knowing from hearing and seeing", or *wenjian zhizhi* 聞見之知, was a popular term in the Song times.[22] While Shen Kuo's epistemological perspective might not have been mainstream in his time, it nonetheless demonstrates the intellectual richness of the Northern Song period and its receptiveness to diverse perspectives.

In chapter one, I employ silver prototypes of lobed shape from the Tang period, describing not only their form, but also their manufacture and materiality. This serves as a point of reference for subsequent comparison with the ceramic and lacquer counterparts. I also delve into the more faithful emulation of the silver lobed form in ceramics and lacquer, which highlights the craftsman's capability in achieving such resemblance. This stands in stark contrast to each material's transmedial interpretation of the lobed ornamentation in the following chapters.

In chapter two and three, I compare ceramics and lacquer in a parallel manner. Each chapter starts with an exploration of the production process, as it provides a solid foundation in

[20] Jules David Prown, "Mind in Matter: An Introduction to Material Culture Theory and Method," *Winterthur Portfolio* 17, no. 1 (1982): 1–19, https://doi.org/10.1086/496065, 2.
[21] Ya Zuo, *Shen Gua's Empiricism* (Cambridge, MA: Harvard University Asia Center, 2018), 45.
[22] Ya Zuo, *Shen Gua's Empiricism*, 45.

understanding the role of materials, technological innovation, and human agency in the nuanced interpretations of the lobed shape. Following this, I present a meticulous formal analysis of both ceramics and lacquer to emphasize their respective focus on simulating the lobes. Thinking of translation not only in shape, but also the objects' materiality, I employ scientific analysis and contemporaneous accounts to portray the conception of Ding-type ceramics and lacquerware in relation to the silver prototype. Lastly, I attend to the tactile dimension of the objects in conjunction to maker's role in the production process to evaluate the larger socio-economic significance of lobed ceramics and lacquerware in the Northern Song.

Considering both lobed ornamentation and materiality, I argue that the two mediums articulate distinctive approaches towards emulation – whereas ceramics largely follow the silver tradition, lacquerware's interpretation exploits the unique material properties to create an organic flower-like form. Ding ceramics retain functional form after throwing, keeping the lobes as two-dimensional simulation but largely follow the silver materiality in terms of light reflectivity and whiteness. Lacquerware attends to shaping sculptural lobes three-dimensionally, imbuing the form with organic qualities and exhibiting a departure from a uniform and glossy surface, adopting warmer tones instead.

Ding white ceramics produced from a standardized process displays apparent traces of maker's hands on the tactile surface, suggesting limited scope of artistic attention. For lacquerware, however, the workshop-centric production unit not only permits but mandates, as detailed in literary sources, an elevated level of craftsmanship that erases both materials and human traces. Coupled with the inscription tradition, the attention to detail attests to both the enduring quality of lacquer and a desire to situate the final product in a natural state devoid of manual intervention. This approach downplays the functional aspect of the dish and elevates

aesthetic considerations by evoking the lasting impression of a "blooming" flower in dialogue with architectural practices.

1.1 Tang metal tradition and foreign influence

The label "Golden Age" is often used in reference to the Tang period (618 – 907) to evoke a sense of the splendor of the period.[23] Indeed, the term is particularly fitting from the perspective of material culture because gold and silver had been widely used and appreciated in the Tang period. Despite its popularity, however, metalwork was not native to Chinese traditions. Foreign metal objects imported in the fifth and sixth centuries stimulated a new industry in China – manufacture of gold and silver wine cups, ewers, and dishes with derived style from pre-Tang foreign influence.[24] By Tang times, the use of silver and gold were more widespread, often employed at court and by high-ranking families. Metalware was valued for its material rarity and preciousness. The value encoded in the materiality also attributes social function to gold and silver objects. There is a great amount of archaeological evidence showing that silver plates were being commissioned and sent to the court as tributes.[25] Consequently, metalware was widely circulated as tribute and gifts during the Tang period, participating in political and diplomatic exchanges.[26]

In the examination of the Tang metal tradition, my attention is directed towards silver cups and plates, notable for their extensive circulation and frequent manifestation in lobed

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[23] Annette Kieser, "A 'Golden Age' Just for the Living? Silver Vessels in Tang Dynasty Tombs," *Tang Studies* 33, no. 1 (2015): 62–90, https://doi.org/10.1353/tan.2015.0002, 63.
[24] Jessica Rawson, "Central Asian Silver and Its Influence on Chinese Ceramics," *Bulletin of the Asia Institute* 5 (1991): 139–51, https://doi.org/https://www.jstor.org/stable/24048292, 139.
[25] Qi Dongfang 齐东方, *Research on Tang Gold and Silver* 唐代金银器研究, Di 1 ban ed. Tang Yan Jiu Ji Jin Hui Cong Shu. (Beijing: Zhongguo she hui ke xue chu ban she, 1999), 264.
[26] Qi Dongfang 齐东方, *Research on Tang Gold and Silver* 唐代金银器研究, 261.

forms.[27] Though made of precious material, most silverware during the Tang period were objects with functionality. Tang hoards provides insight into the household goods of the aristocracy; hoards from Hejiacun 何家村 in Xi'an 西安, and Dingmaoqiao 丁卯橋 in Jiangsu 江蘇 province contained a variety of silver vessel shapes, many of which were suitable for feasting. This indicates their use in wine-drinking competitions.[28]

In addition to archaeological evidence, Tang period tomb murals also attest to the functionality of silverware. There are multiple instances of attendants carrying a lobed plate as part of ceremony. In the tomb of Princess Fangling 房陵 (619 – 673) – the sixth daughter of Emperor Gaozu 高祖 of Tang – at Shuangbao 雙寶 village in Shaanxi 陝西 province, there is a mural depicting the domestic life of the princess.[29] Female servants holding dishes and wine bottles constitute a continuous narrative of meal preparation. On the east wall of the front chamber, a female servant is depicted holding a multi-lobed long cup in one hand and wine bottle in the other (Figure 1). A similar lobed cup is found in Li Shou's 李壽 (300 – 343) tomb; it has eight distinctive lobes (Figure 2).[30] Though these objects might not have been used daily, these visual representations demonstrate their functionality.

Among the visual representation of silver cups, it is critical to notice their vertical lobes extending all the way from the rim to the bottom (Figure 1 and Figure 2), as it stands in stark contrast to the Central Asian type of lobes. For example, a Sassanid oval cup from the late

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[27] See section "Kuihua xing pan 葵花形盘", p. 58 – 61 in *Research on Tang Gold and Silver* 唐代金银器研究, where Qi details occurrence of lobed-shaped silver plates from the late 7th century to the late 9th century.
[28] Jessica Rawson, "Central Asian Silver and Its Influence on Chinese Ceramics," 144.
[29] Li Xingming 李星明, *Tangdai Mushi Bihua Yanjiu* 唐代墓室壁画研究. Di 1 baned. (Xi'an: Shanxi ren min mei shu chu ban she, 2005), 245.
[30] Sun Ji 孙机, "Some Remarks on Paintings Engraved on the Stone Coffin of Li Shou 唐李寿石椁线刻《侍女图》《乐舞图》散记（上）," *Wenwu* 文物 , no. 05 (1996): 33–49, https://doi.org/10.13619/j.cnki.cn11-1532/k.1996.05.005, 44.

seventh century exhibits bilateral curvatures (Figure 3). In other words, some of the "half circles" do not extend fully to the cup's base. Transitioning into the early ninth century, in the late Tang period, the Chinese tradition had innovated upon the Sassanid tradition. An interpretation of the lobed structure emerged, with vertical curves stemming from the bottom of the cup (Figure 4).[31] During the mid to late Tang period, silver products predominantly embraced the lobed shape.[32]

1.2 Silver technology and materiality

The lobed shape finds its form in various vessels during the late Tang period. Most of the bowls, plates, dishes and cups of the Tang period were produced through sheet metal technology.[33] A lobed plate uncovered from Famen Temple 法門寺 exemplifies the technical finesse of working with sheet metal (Figure 5).[34] Weighing only 115 grams, the plate features a lobed mouth, a shallow belly, a flat bottom, and a ringed foot. The interior wall is partitioned into five distinct lobes; each lobe is decorated with a cluster of flowers. The center of the bottom is also decorated with a flower cluster. In a parallel historical context, Rawson describes the physical attributes of an eighth to ninth century silver bowl discovered in a hoard from Shapocun, Xi'an in Shannxi province. This silver bowl exhibits features indicative of its origin as a sheet metal product. Notably, its thin sides, everted lip, and sharp indentation are all typical of a vessel worked from a sheet of metal (Figure 6).[35]

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[31] Qi Dongfang 齐东方, *Research on Tang Gold and Silver* 唐代金银器研究, 52.
[32] Qi Dongfang 齐东方, *Research on Tang Gold and Silver* 唐代金银器研究, 191.
[33] Qi Dongfang 齐东方, *Research on Tang Gold and Silver* 唐代金银器研究, 179.
[34] Archaeology Team of Famen Temple of Shan'xi Province 陕西省法门寺考古队, "Fufeng famen sita tangdai digong fajue jianbao 扶风法门寺塔唐代地宫发掘简报," *Wenwu* 文物, no. 10 (1988): 1–28, https://doi.org/10.13619/j.cnki.cn11－1532/k.1988.10.00, 14.
[35] Jessica Rawson, "Central Asian Silver and Its Influence on Chinese Ceramics," 144.

In contrast to less articulated bronze vessels made from casting, sheet-metal working brought new vessel types and features into the visual repertoire. The new features take full advantage of the supple and ductile nature of the metal sheets. By tapping on the material, the sheet expands and becomes the desired shape. In primary accounts, the technique is referred to as *dazuo* 打作.[36] As articulated in Northern Song writing *Guitian lu* 歸田錄 by scholar Ouyang Xiu 歐陽修 (1007 – 1072), the verb *da* 打, literally to hit or to strike, is defined in the context of metal making:

> 其義本謂'考擊'，故人相歐、以物相擊，皆謂之打，而工造金銀器亦謂之打可矣，蓋有槌(一作撾)擊之義也.[37]
>
> When people clash with each other or things collide with each other, it is all called *da* 打 (strike/hit). In the context of crafting gold and silver objects, it is also referred to as *da* 打 (strike/hit), which may involve the use of a hammer, thus implying the sense of striking or hitting.

The production process of shaping silver lobes entails a forceful treatment of a singular material to achieve the desired shape. This stands in contrast to the more intricate processes observed in ceramics and lacquer production, where a diverse array of materials necessitates distinct treatments for the core and the surface, tailored to their respective material qualities.

The luminosity inherent to the materiality of silver captivated poets of the Tang and Song times. As early as the Tang period, a metaphorical relationship was established between the shiny silver plate (*lan yinpan* 爛銀盤) and the moon (*yue* 月). In this context, *lan* 爛 is an adjective that means bright or radiant. For instance, Lu Tong's 盧仝 (790 – 835) poem "Yuezhu

[36] Qi Dongfang 齐东方, *Research on Tang Gold and Silver* 唐代金银器研究, 179.
[37] Ou Yangxiu 歐陽修, 1007-1072. *Guitian Lu* 歸田錄 : 2 卷. (Beijing: Beijing Ai ru sheng shu zi hua ji shu yan jiu zhong xin, 2009), https://www.gutenberg.org/ebooks/25431.

shi” 月蝕詩 on lunar eclipse vividly utilizes this metaphor: “a shiny silver plate emerges from the bottom of the sea, shining upon the east side of my thatched hut” 爛銀盤從海底出，出來照我草屋東.[38] This imagery, which permeates Tang poetry, emphasizes the reflective property intrinsic to silver plates; the moon is not only seen as a transmitter of light, but also a light emitting source itself.

Such sensory reception endured into the Song period, while acquiring more nuanced attributes: silver surface is not merely reflective, but also carries a palpable cold sensation. In “Xie wangjun baohui juhua” 謝王君寶惠菊花, Song poet Liu Caishao 劉才邵 (1086 – 1158) writes: “The silver plate, how lustrous it is, carrying dew with its green and blue hues. Beneath the moon, even more extraordinary, fragmented shadows, cold air pressing in” 銀盤何爛爛，承露帶青碧。月下更奇絕，碎影寒氣逼.[39] Here, the initial depiction of the silver plate’s shininess is heightened under moonlight, with the poet choosing to indirectly characterize the materiality of silver by emphasizing the atmospheric consequences engendered by its shadows. The shadows render the air (*qi* 氣) around the silver plate sharp and cold. The description of the silver plate’s chilly surroundings allows one to infer the cold sensorial experience with the silver itself.

Silver was valued for its physical qualities like shininess; more specifically, the luminous surface distinguished by the cold ambiance it imparts to its surroundings. These characteristics are critical for comparison with its ceramics and lacquer counterparts. Whereas Ding ware

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[38] Peng Dingqiu 彭定求, *Quan Tang Shi* 全唐詩 vol. 387, 900 vols. (Taibei: Zhonghua Shuju 中華書局, 1960), 4364.

[39] Lui Caishao 劉才邵, *Shanxi Jushi Lu* 樧溪居士錄. 四庫善本叢書. 初編. 集部 (Taipei: Siku Shanben Yinshuguan 四庫善本叢書館, 1959), 4.

focuses on emulating a highly reflective surface, lacquerware's surface displays a lustre of warmer tones.

1.3 Emulation of silver prototypes

Both mediums of ceramic and lacquer demonstrate instances of faithful imitation of the silver lobed shape, with attention to the metal-sheet technology in the making of individual lobes. Certain Ding ware plates stand out as exemplars of a meticulous replication of the materiality and technology conventional to silver objects. The plate at British Museum adeptly captures the intricacies of late Tang and Song silverware lobed forms (Figure 7). It is a dish with flat base, broad six-lobed rim, and sharp, well-defined contours. Each of these lobes curves upwards, joining another lobe at an angular ridge that seamlessly connect to the base of the dish. Eleventh-century Ding ware, renowned for its exceptional lightness among Chinese ceramics, resonates with the tactile qualities of a thin sheet of silver.[40] The thin clay sheet would have been beaten over the mould for a complete re-pressing and edge-cutting.[41] The resulting lobes evoke parallels with the silver pieces discovered at Famen Temple (Figure 5). Viewed in a comparative lens, this moulding process mirrors what the Chinese character *da* 打, or "to beat," suggests in metal-making techniques.

Similar lobed forms are found in lacquerware uncovered from two tombs in the vicinity of Wuxi 無錫 in Jiangsu 江蘇 province. The two lobed lacquer vessels are open-mouthed and present a ten-lobed form with a curved belly and a flat bottom (Figure 8). The interior is lacquered in a crimson colour, while the exterior is coated in black lacquer. On the base, the

[40] S.J Vainker, *Chinese Pottery and Porcelain: From Prehistory to the Present* (British Museum Press, 1997), 95.
[41] Joseph Needham and Ling Wang, *Science and Civilisation in China: Chemistry and Chemical Technology*, vol. 5 (Cambridge: Cambridge University Press, 1956), 434.

inscription reads “Made by Chen in the year of Guichou” 癸丑陈伯修置. The ten-lobed design aligns with many white wares in Northern Song China (Figure 9 and Figure 10). Despite not being strictly categorized as Ding ware, these white wares share common features such as a white, thin, and glossy appearance. The shared ten-lobed design hints at a potential interconnection between ceramics and lacquer. While the lacquered plate increases the number of lobes compared to its silver counterparts, the approach to individual lobes mirrors the pronounced curvature found in silverware.

Despite similarity in form, a visible departure from both silver and white ceramics lies in the use of disparate colours on the interior and exterior surfaces of lacquerware. The bi-colour scheme, rooted in the lacquer tradition from the Han period, suggests a departure from a consistently shiny surface. It is a shift I will elaborate on later in connection with other aspects of lacquer’s materiality.

Examples of ceramics and lacquerware presented above demonstrate a level of craftsmanship capable of closely adhering to the silver tradition. The Ding ceramics align largely to silver, both in terms of formal and tactile characteristics. Conversely, lacquerware, while visually reminiscent of individual lobes, concurrently exhibits features stemming from ancient lacquer ideals in its choice of colours. A more nuanced understanding of the distinct attitudes towards lobed ornamentation in these two materials will be articulated in the subsequent examination of their interpretations of lobed ware.

2.1 Ding ware of the Northern Song period

During the Song period, the ceramic industry made unprecedented progress. Kilns and workshops were found in many areas and were favored by both the imperial court and people of

lower social classes. Archaeologists discovered kiln sites of Ding ware in many villages, such as Jianci 澗磁 village and Yanshan 燕山 village, in present day Quyang 曲陽 county in the province of Hebei, with a total area of more than a million square meters (Figure 11).[42] Ding ware acquired its name because Quyang county was part of jurisdiction of Dingzhou in the Tang and Five Dynasties (907 – 960) period.[43]

Ding ceramics, renowned for their white clay body and ivory toned glaze, are characterized by the extreme whiteness and hardness of the body, and the glassy, transparent glaze. Ding white wares were produced over a vast period of time – from the tenth to the thirteenth century.[44] During the Five Dynasties and early Northern Song, Ding ware was the finest porcelain produced, available mainly to the imperial family and those of high status.[45] Throughout the centuries, Ding kilns mainly specialized in the production of bowls, basins, dishes, and plates, as evidenced by the immense waste heaps in the vicinity of the excavated kilns. Ding ware's initial production in the Five Dynasties constituted mostly of plain, translucent vessels (Figure 12). As the production reached its zenith during the Northern Song period, the range of kiln firing expanded continuously. Towards the second half of the eleventh century, the production was concentrated on the manufacture of open and flat wares with carved and incised decoration of floral scrolls and sprays, ducks and geese among reeds, dragons, and fish (Figure 13).[46] In the Yuan period (1279 – 1368), Ding ware started falling out of fashion.

In this chapter, I compare lobed Northern Song Ding ware to silver plates of the Tang period, attending to their relationship not just in the lobed shape, but also their materiality and

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[42] Feng, Xianming et al*., Zhongguo taoci shi* 中国陶瓷史. (Beijing: Wen wu chu ban she, 1982), 232.
[43] S.J Vainker, *Chinese Pottery and Porcelain: From Prehistory to the Present*, 93.
[44] Margaret Medley, *The Chinese Potter: A Practical History of Chinese Ceramics* (London: Phaidon, 2006), 106.
[45] Ya-hwei Hsu, "Antiquities, Ritual Reform, and the Shaping of New State at Huizong's Court." *Artibus Asiae* 73, no. 1 (2013): 137–80, 169.
[46] Margaret Medley, *The Chinese Potter: A Practical History of Chinese Ceramics*, 108.

manufacturing process. I argue that Ding ceramics simplify some elements of lobed wares to a two-dimensional design, while retaining features echoing the materiality of silver.

2.2 Ding ware production process

As early as the Tang period, the government began to appoint some private workshops as tribute-kilns (*gongyao* 貢窯) to manufacture ceramics for the court.[47] The Northern Song period largely followed this practice. In the early Northern Song, the court used to send buying commissions to the kilns to select the best for imperial use, through the traditional *gongci* 貢瓷 system and taxation.[48] A considerable number of unearthed sherds carved with *shangshiju* 尚食局 (Imperial Food Bureau), *shangyaoju* 尚药局 (Imperial Medicine Bureau), and *donggong* 东宫 (Palace of the Prince) indicates they were made for court or governmental use. In other words, they were tribute offerings from the tribute-kilns to the imperial palace at that time. Nonetheless, even when the imperial court ordered kilns to produce specific types of wares, these kilns were never monopolized by the court. There were other kind of wares being produced at the given kiln simultaneously. This distinction suggests that there might be potential stylistic communication between wares produced for the court and wares for popular use.

The simplified lobed shape was in part informed by the production process in the making of Ding ware. It comprises of three basic stages in ceramics making – throwing, glazing, and firing. Earlier Ding ware (up until mid-Norther Song), which are the objects of interest of this project, added free-hand carving or shaping of ornament on the clay surface when the object

[47] Ya-hwei Hsu, "Reshaping Chinese Material Culture: Antiquities Revival in the Era of Print, 960-1279." (PhD diss., Yale University, 2010), 104.
[48] Wang Guangyao 王光尧, “Songdai guanyao zhidu chutan 宋代官窑制度初探,” Wenwu 文物 (2005): 74 – 79, 74.

attained a leather-hard state, before glazing. These additional steps, such as cutting rim notches and making lines to simulate lobes on either inner or outer wall, contribute to the innovation upon the lobed shape. Further, the creation of "flip-over" firing technique contributed to the production efficiency and standardization of vessel shapes and sizes.

The Palace Museum piece has straight, slanting walls (Figure 14), which is characteristic of pieces thrown on the wheel, and is without further intervention such as moulding employed in the more faithful imitation of silver lobes. Conventionally, vessels produced through wheel-throwing are expected to possess a uniformly straight rim. The notches present on the Palace Museum piece would not have been natural in clay, as the indented sides are liable to fracture.[49] The presence of these indents, evenly distributed along the rim, suggest these would have been cut by hand when it was in a leather-hard state.[50]

To complete the simulation of lobes, the rims are paired with either raised ridges or incised lines, spanning from the notches all the way to the bottom along the slanting wall. The Palace Museum example was given slight vertical indents on the inner wall while still soft after throwing, allowing potters to hint at lobed silver forms without copying exactly (Figure 14).[51] Alternatively, some are equipped with incised lines, such as the Met example (Figure 15). The incising process was executed using a pointed tool – either a piece of bamboo or metal with a pointed end – to create narrow indentations.[52]

In both variations of lobed-shaped Ding ware, a uniform white glaze is applied to both the inner and outer walls to ensure a consistent glaze surface. The rim, however, is intentionally

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[49] Jessica Rawson. "Sets or Singletons? Uses of Chinese Ceramics: 10th-14th Centuries," *Journal of Song-Yuan Studies*, no. 23 (1993): 71–94. http://www.jstor.org/stable/23495797, 79.
[50] Margaret Medley, *Metalwork and Chinese Ceramics* (London: Percival David Foundation of Chinese Art, 1972), 10.
[51] Joseph Needham and Ling Wang, *Science and Civilisation in China: Chemistry and Chemical Technology*, 434.
[52] Hin-cheung Lovell, *Illustrated Catalogue of Ting Yao and Related White Wares in the Percival David Foundation of Chinese Art* (London: School of Oriental and African Studies, 1964), Xxvi.

left unglazed to serve as a support for the vessel during the firing process. In fact, the Ding kilns were the first in the Song period to invent the method of firing round vessels such as plates and bowls upside down.[53] The flip-over technique greatly improved the production efficiency, allowing more vessels to be fired at a given kiln in the same firing period. There were various configurations to stack the upside-down bowls or plates. Nonetheless, all involved support rings to separate glazed vessel from one another before placing the stack inside an open-bottomed cylindrical or box-shaped container (Figure 16). The containers enclosing the vertical stack were then placed inside the kiln to be fired. Support rings serve as an extra foot ring tool to protect glazed clay from one another, providing structural support. Containers, on the other hand, play the role of chemical protection, shielding the ware from direct exposure to bright burning flames and smoke.[54]

However, with increased efficiency came the standardization of production. The flip-over technique is also a process that demanded great consistency and precision of form of the thrown ware.[55] First, two or more clay bodies of different diameters were placed on top of one another inside the circular support ring. Another support ring was placed on top of the circular support ring, with the ring mouth holding another vessel. Alternating between one support ring and one glazed vessel until a certain height was reached, the stack was then placed inside the container to be fired in the kiln (Figure 16).[56] With the exception of a few plates of increasing diameter at the bottom of the stack, the majority of vessels produced from a particular container exhibited a uniform diameter and form. The efficient process naturally lends itself to standardized products.

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[53] Feng, Xianming et al., *Zhongguo taoci shi* 中国陶瓷史, 234.
[54] Li Huibing 李辉柄, "Lun Dingyao shaoci gongyi de fazhan yu lishi fenqi 论定窑烧瓷工艺的发展与历史分期," *Wenwu* 文物, no. 12 (1987): 1119–39, 1123.
[55] Nigel Wood, *Chinese Glazes* (London: Herbert Press, 2022), 101.
[56] Li Huibing 李辉柄, "Lun Dingyao shaoci gongyi de fazhan yu lishi fenqi 论定窑烧瓷工艺的发展与历史分期," 1122.

2.3 Innovation of lobed form – planar design

Ding ceramics' lobed sides follow a planar design, which prioritizes the functional shape of a dish with flat bottom and straight, slanting wall. I focus on the effect of the "mutant fraction," or prime trait, as termed by Kubler, as dynamic in provoking change.[57] I argue that the objective of replicating lobed forms has shifted its focus from the imitation of sheet metal technology to a nuanced exploration of clay's inherent malleability through evoking lobed forms as surface treatments.

At first glance, this Palace Museum plate (Figure 14) largely resembles the British Museum example (Figure 7). This plate can be characterized as embodying the shape of six lobes, with an open mouth, shallow belly, slanting walls, and a flat bottom, a description also suitable for the British Museum example. However, a closer examination reveals nuances in the treatment of the lobes. The lobes of the Palace Museum plate are not shaped by moulding, instead, they are achieved through a combination of ornamental features after wheel-throwing. The presence of obtuse-angled indents along the rim serves as the demarcation between individual lobes. These lobes are accentuated by six raised lines on the inner wall. These lines originate at the indents and extend towards the dish's central axis. Importantly, these raised lines remain exclusively on the slanting wall and cease at the point where the wall meets the base, meaning they do not reach the central circular area. The circle also does not overlap with the entirety of the plate base. Rather, it is incised much smaller than the flat bottom (Figure 17). While there has been no scientific analysis specifically conducted on this object, excavation reports detailing structurally comparable pieces indicate that the central circle was likely

[57] George Kubler, *The Shape of Time: Remarks on the History of Things* (New Haven: Yale University Press, 2008), 36.

traced.[58] This alteration in the vessel's anatomy affords a larger surface area for the expression of lobes. The combination of raised lines and traced circles, however, point to the lobed ornamentation as surface treatment.

Structurally speaking, the Ding dish is no longer lobed in a three-dimensional sense. The side view demonstrates that the walls are smooth apart from the indents at the mouth, slanting outwards and without any external modeling (Figure 18). The so-called lobes, instead of being a substantial element of the dish's anatomy, become part of the surface treatment. The lobe-like features are only visible from a top-down view, presenting itself as a flat design. The unique angle required to replicate the silver resemblance speaks to a shift in focus. It no longer adheres to a holistic, integrated viewpoint; rather, it selectively synthesizes critical elements from the structural design of silver prototypes and transform them into ornamental motifs with the malleability of clay.

A dish with scalloped rim at the Met (Figure 19) exemplifies the ornamental features' focus on surface. It has a diameter of 16.8 cm, which is slightly larger than the Palace Museum example. It has similar focus on the simulated lobe from a top-down view – the curves are represented by shallow notches on the rim. Nonetheless, the allusion to the lobed configuration is simplified to a greater extent: thin, shallow lines replace the elevated ridges. Different from the deliberately incised inner circle in the Palace Museum example, the Met example's circular shape occupies the same area as the thrown bottom, making them superimposable. There are no raised ridges acting as a continuation of the rim notches on the inner wall. Alternatively, the sole indication remains the manually incised thin lines on the outer wall, projecting from the flat base

[58] "Hebei Quyangzhen Dingyao yizhi fajue jianbao 河北曲阳北镇定窑遗址发掘简报," *Wenwu* 文物, no. 01 (2021): 27–45, https://doi.org/10.13619/j.cnki.cn11-1532/k.2021.01.002, 39.

towards the notches without necessarily reaching the edges (Figure 15). The absence of ridges erases the tactile suggestion, accentuating the two-dimensionality. The delicate lines are shallow and prone to smoothen out under the glaze's surface. Covered, the fine lines' texture remains concealed under the transparent glaze. The visual effect is stinkingly subtle and can easily escape the unaided eye.

Comparing and contrasting both examples of Ding ware's adaptation of silver lobed form, they distill the characteristics of silver form into ornamental representation. Not imitating the vessel shape directly with moulding techniques, they pair the rim notches with the treatment of either inner or outer wall, simplifying the three-dimensional lobes to a planar design.

Examples of Ding ware with complex incised ornamentation further strengthens the point of lobed shape being a two-dimensional design. In this case, it serves the function of compartmentalizing. The National Palace Museum example (Figure 13) maintains the concept of lobes by interrupting the smooth inner wall with lines, creating artificial compartments filled with floral elements. Corresponding to these inner lines, the outer wall features six subtle traces. The notches, however, are nearly imperceptible due to the copper rim concealing the unglazed edge. Many of the incised lines and floral patterns are moulded (Figure 20). This configuration accentuates the lobed form as a surface-level design, serving to complement the incised patterns by dividing them.

In contemporaneous descriptions of Ding ware, the incised floral ornamentation takes precedence over the lobed shape. It was often characterized by *huaci* 花瓷, or floral-patterned ceramics. *Gegu Yaolun* 格古要論, an early Ming period (1368 – 1644) treatise on collecting and

assessing antiques, categorizes Ding ware with incised designs as the most highly desirable ones: "the best have incised designs; the second best are plain; and of third quality are those with impressed patterns" 劃花者最佳,素者亦好,繡花者次.[59] This categorization makes no explicit reference to the simulated lobed shape. Instead, it prioritizes the importance of floral patterns without mentioning the lines and notches. This perspective reinforces the argument that a two-dimensional design approach takes precedence over any endeavor to treat lobes as three-dimensional sculptural elements.

2.4 Materiality of Ding ceramics: shininess and whiteness

The examination and comparison of various interpretations of lobed shapes in Ding ceramics reveal a nuanced translation of form into ornamental language. However, the materiality of Ding ware largely references the metal prototype through its reflective surface and whiteness.

As previously discussed, silver's materiality in contemporaneous imagination was intricately connected to its ability to reflect light. Likewise, the materiality of glaze inherent to Ding ware accentuates the light-reflective properties akin to metals such as gold and silver. Ding ware is renowned for its ivory-white body and transparent layer of glaze. In contrast to contemporaneous Ru and Guan ware with unctuous thick glaze completely obscuring the underlying clay's colour (Figure 21), Ding ware's transparent glaze layer fully preserves the ivory colour of the fine clay body. However, the function of glaze extends beyond showcasing its fine tone. It wraps the clay body with a transparent, yet shiny coating. The Palace Museum

[59] Cao Zhao 曹昭, "Juan 7 卷 7," in *Xin Zeng Ge Gu Yao Lun: 13 Juan* 新增格古要論:13 卷 (Shanghai: Shanghai gu ji chu ban she, 2002), 23.

example exemplifies the effect of light on Ding glaze with a few highlights of sparkles (Figure 14). While some online catalogue images, such as the Met example (Figure 19), may not fully capture its reflective surface, an in-person experience reveals the glossy nature of the glaze (Figure 22). The affective response is substantiated by instrumental analysis, where conservation scientists investigate how the glaze's composition facilitates the reflection of light. Physically speaking, Ding ware has relatively thin glaze layer of around 0.15 mm, which facilitates the reflection of light.[60] Chemically, Ding glaze was of the magnesia-lime type. It was an unusual approach to glaze-design due to its relatively high magnesium oxide (MgO) content in relation to calcium oxide (CaO).[61] The high MgO content in the glaze is conducive to the formation of the body–glaze interaction layer. Such layer reduces cracking and makes the surface of the glaze smoother and glossier, substantially improving its whiteness.[62]

Contemporaneous records also focus on the white colour of Ding ware in evaluating its fineness and value. As recorded in Jin writing: "Dingzhou flower-patterned ceramics bowl, with a white colour surpassing all under heaven" 定州花磁瓯，颜色天下白.[63] Likewise, Ming writing *Yanxian qingshang jian* 燕閒清賞箋 praises both white colour and thin body as desirable qualities for Ding ware:

> During the Xuanhe and Zhenghe eras, those produced officially were very high in value. Its colour was white and material thin. The clay colour resembled that of jade. The ones with purple and black patterns were rare, with only one or two types seen. The yellow ones with thicker texture were considered of lower quality.
> 如宣和政和年者，時為官造，色白質薄，土色如玉，物價甚高。其紫黑者亦少，餘見僅一二種。色黃質厚者，下品也。[64]

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[60] Juan Wu et al., "A Technical Comparison of Three Chinese White Porcelains: Ding, Shufu, and Dehua," *Studies in Conservation* 59, no. 5 (2014): 341–49, https://doi.org/10.1179/2047058413y.0000000121, 347.
[61] Jianfeng Cui et al., "Chemical Analysis of White Porcelains from the Ding Kiln Site, Hebei Province, China," *Journal of Archaeological Science* 39, no. 4 (2012): 818–27, https://doi.org/10.1016/j.jas.2011.07.026, 819.
[62] Juan Wu et al., "A Technical Comparison of Three Chinese White Porcelains: Ding, Shufu, and Dehua," 346.
[63] Liu Qi 劉祁, 1203-1250, *Gui Qian Zhi* 歸潛志, (Taibei: Zhonghua Shuju 中華書局, 1983), 91.
[64] Gao Lian 高濂, *Yan Xian Qing Shang Jian* 燕閒清賞箋 (Chengdu: Ba shu shu she 巴蜀書社, 1985), 37.

The colour white has long been associated with the west since the ancient times. *Shuowen Jiezi* 說文解字, a Chinese dictionary compiled during the Eastern Han (25 – 206 CE), has defined the colour white (*bai* 白) as 西方色也,[65] meaning it is a colour with western origin. In the same dictionary, silver has been defined as *baijin* 白金,[66] literally "white gold". In Northern Song poetry, *bai* 白 was also used to characterize the colour of the silver cup: "green jade flutes before each pair of lamps, not refusing white silver cups under the flowers" 每對燈前青玉笛, 不辭花下白銀杯.[67] Characterizing both Ding ceramics and silver with the colour white also suggests a potential connection between their materiality.

Considering the two crucial aspects – light reflection and whiteness – I draw a parallel between the materiality of silver and Ding ceramics. Archaeological evidence further provides insights into this parallel with coexistence of Ding ware and silverware within the same archaeological contexts. The sharing of space suggests an acknowledgement of Ding ware's capacity to mimic the material characteristics of silver. Notably, two pagodas excavated at Dingxian 定縣 have revealed deposits dated to 977 and 995 containing large numbers of Ding ware and silverware.[68] The very fine quality of the Ding wares and their use for Buddhist ritual suggest that they were highly regarded, perhaps standing just below the gold, silver, and precious stones in value. In short, both textual records and archaeological findings allude to the

[65] Xu Shen 許慎, *Shuo Wen Jie Zi: Dian Xiao Ben* 説文解字點校本 (Beijing: Zhong hua shu ju 中華書局, 2020), 247.
[66] Xu Shen 許慎, *Shuo Wen Jie Zi: Dian Xiao Ben,* 460.
[67] Chao Buzhi 晁补之, *Ji Lei Ji: 70 Juan* 雞肋集 70 卷, vol. 16, 70 vols. (Taipei: Shang wu yin shu guan 商務印書館, 1983), 4.
[68] "Hebei Dingxian faxian liangzhuo Songdai taji 河北定县发现两座宋代塔基," *Wenwu* 文物, no. 8 (1972): 39–48, 40.

sharing of physical attributes between Ding ware and silverware in the perception of Song viewers.

2.5 Tactility and maker's marks

The standardized making process also has consequences on the tactile dimension of Ding ware: the surface constitutes a combination of coarse rim and roughly added ornamental features that expose maker's marks. The lack of meticulous care casts the impression that the lobed plates are everyday objects consumable in nature.

For Ding ceramics, one of the most noticeable traits in term of tactility is the coarse rim, which is the result of missing glaze. This has been noticed by contemporary writers, and was often viewed through a negative lens. Song scholar Lu You 陸游 writes in *Laoxuean biji* 老學庵筆記: "The imperial court deemed Ding white vessels not proper for court use; only Ru ware was used because Ding ware possessed an unglazed rim" 故都時定器不入禁中，惟用汝器，以定器有芒也.[69] The National Palace Museum example (Figure 18) demonstrates the practical challenge posed by the unglazed rim, which would have made it difficult for users to handle the plate. The edges would have felt rough, almost as if touching a cracked piece of ceramic sherd. It would have required extra caution to behold the objects, making this tactile element noticeable.

Attention to detail is further compromised in some often-overlooked details, such as the incised lines used to delineate borders between lobes. These lines did not consistently align with notches for precise rendering of lobes, and the execution retained traces of the maker's hand. In the case of plain wares, such as the Met example (Figure 15), the incised lines originate from the

[69] Lu You 陸游, *Lao Xue an Bi Ji* 老學庵筆記, vol. 2, 10 vols. (Taibei: Zhonghua Shuju 中華書局, 1979), 23.

bottom and, in following the natural direction of the carving, gradually diminish in intensity as they extend towards the notches. No attempt is made to ensure uniformity of force along the lines. Imagining where the line would have reached, it becomes evident that not all of them are directed precisely to the centre of the notch. Likewise, the National Palace Museum example (Figure 23) with carved patterns on the inside also presents carved lines skewing from the central heart of the notches. Traces of hand movement are unapologetically present.

The division of labour likely contributes to the lack of care in rendering lobed elements. By subdividing the processes of forming, decorating, glazing, and firing, many individual artisans probably contributed to the making of any one single piece.[70] The kiln worked similar to a production chain, where each skilled maker concentrated their work on only a small fraction of the process. The objective of simulating lobes is pre-established and seems to be pursued with the sole aim of completion, without consideration for precision. The lack of coordination and collaboration among artisans handling different components would have made it all the more challenging to achieve a detailed execution.

By using thin lines and shallow notches, the standardized manufacturing allowed the simplified two-dimensional allusion of the lobed form to be produced in large quantities and therefore accessible to a broader market. However, the serialized approach also resulted in limited individual attention in shaping the form. This characteristic suggests the feeling that the lobed plates are everyday objects that are to be used and disposed of, which stands in contrast to the long-lasting quality of lacquerware made with invested care.

[70] Jessica Rawson. “Sets or Singletons? Uses of Chinese Ceramics: 10th-14th Centuries,” 76.

3.1 Development of lacquer in the Northern Song

Like contemporaneous ceramics such as Ding ware, Northern Song lacquerware also adopted lobed ornamentation in its construction of objects. This phenomenon extended beyond imperial contexts, as seen in the abundance of lacquer products in hoards and funerary contexts. Examining lobed-shape lacquerware in the Northern Song period alongside Ding ware and silver prototypes reveals a distinct attitude towards lobed ornamentation. Instead of a two-dimensional allusion to lobes, a sculptural approach is used to impart a flower-like shape to the objects. More care is attributed to individual objects in the multi-step manufacturing process, which attests to the durability of lacquerware.

Since the beginning of the Northern Song period, the south of China – region of present-day Jiangsu and Zhejiang 浙江 provinces – had been a centre for lacquerware production (Figure 24).[71] The Northern Song text *Dongjing menghua lu* 東京夢華錄 offers invaluable insights into the social life and events in the city of Bianliang 汴梁 (now Kaifeng 開封 in Henan 河南 Province). It vividly describes financial activities of the capital city: "To the east of South Gate Street, to the south are Tang's gold and silver shop, Wenzhou miscellaneous lacquerware store, Daxiangguo temple, all the way to thirteen-story building, and the old Song gate" 南門大街以東，南則唐家金銀舖、溫州漆器什物舖、大相國寺，直至十三間樓、舊宋門.[72] This account specifies that the shop selling miscellaneous lacquerware had products from Wenzhou 溫州, a coastal city situated at the southeast of Zhejiang province.

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[71] Zhongguo qiqi quanji bianji weiyuanhui 中国漆器全集编辑委员会, *Zhongguo Qiqi Quanji 4, San Guo-Yuan* 中国漆器全集 (Fu zhou: Fu jian mei shu chu ban she, 1998), 5.

[72] Meng Yuanlao 孟元老, *Dongjing Menghua Lu* 東京夢華錄 (Shanghai: Han fen lou, 1922), http://catalog.hathitrust.org/api/volumes/oclc/41188508.html.

Archaeological investigations conducted on tombs within the Jiangsu and Zhejiang provinces, dating back to the Song period, have yielded a total of 213 pieces or sets of lacquerware from 48 tombs.[73] Notably, inscriptions found on unearthed Northern Song objects revealed three cities as centres of production: Hangzhou 杭州, Wenzhou and Huzhou 湖州.[74]

In contrast to the wealth of excavated material featuring inscription of southern cities, references to workshops in other regions are limited. In *History of the Song Dynasty* (*Songshi* 宋史), under the section "Geographical Records," there is mention of two cities' annual tribute of lacquerware, the first being Huzhou in Zhejiang province and the second being Xiangyang 襄阳 prefecture in Hubei 湖北 province. The record in official writing reflects the abundant production of lacquerware in Xiangzhou 襄州, and its exquisite craftsmanship has been designated as "tribute" since the Tang and Song Dynasties.[75] In terms of material evidence, however, there is one instance of a lobed-shaped lacquer bowl found in the Northern Song tomb at Shilipu 十里鋪 in Wuhan 武漢 (Figure 25).[76] The outer rim of the plate flares out in six parts and the bottom is flat. Both the inside and outside of the plate are coated with brown lacquer.[77] It bears an inscription that reads 己丑襄州邢家造真上牢, indicating that it was a product made in Xiangzhou at that time.[78] In addition to Xiangzhou, Dingzhou 定州, the region where Ding ceramics were produced, had also been suggested to be a city with many skilled lacquer

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[73] Xu Caiyun 许彩云, "Research on Zhejiang Lacquer in Song Dynasty – Unearthed Materials as the Research Center 宋代浙江漆器研究—以出土材料为中心考察" (Master's thesis, Zhejiang University, 2012), 24.
[74] For a comprehensive classification of excavated lacquerware, consult Han Qian 韩倩, "Lacquerware in Song Dynasty 宋代漆器" , p.40 – 43.
[75] Wu Yingyue 吴映月, "Research on the Lacquer Ware for Practical Use of Song Dynasty 宋代实用漆器研究" (Master's thesis, Tsinghua University, 2006), 46.
[76] Han Qian 韩倩, "Lacquerware in Song Dynasty 宋代漆器" (Master's thesis, Tsinghua University, 2006), 37.
[77] Wenjing Li 李文靜, *Tianran Daqi* 天然大漆 : 漆器文化與藝術特色 (Taiwan: Song ye wen hua, 2019), 35.
[78] Xiangzhou 襄州 is a district of Xiangyang 襄阳.

craftsmen.[79] However, due to Dingzhou's colder climate, Garner suggests that there is no compelling reason that lacquerware were produced there, despite similarity in form between lacquerware and Ding white ceramic wares.[80]

Among the excavated plain lacquered objects from Northern Song sites in the Zhejiang and Jiangsu regions, curved lobed shapes with even-number, such as six- and ten-lobed forms, predominate.[81] Although the significance of these numerical configurations remains elusive, they are consistent with lobed ceramics plates of the same period.

The colour palette characteristic of the Northern Song period is monochrome black lacquer.[82] For instance, at Yangmiao zhen 楊廟鎮 in Huai'an 淮安, the majority of the 70 objects are lacquered black, with some displaying red or bi-coloured lacquering.[83] In the case of bi-coloured plain objects, they are oftentimes painted with a red interior and black exterior. This follows the colour tradition dating back to the Warring States 戰國 (475–221 BCE), one of the most flourishing times for lacquerware development in the ancient period. The incorporation of inscriptions, often located on the bottom of the plate, serves to maintain this colour scheme, because the inscription is always red and requires a black background. Interestingly, in instances of bi-coloured lacquerware, a uniform layer of monochrome lacquer first covers the entire surface, with the second colour solely applied as a finishing touch.

In short, the coexistence of six- and ten-lobed, and monochrome and bi-coloured lacquer products at a single site complicates the identification of regional specificity. The scarcity of

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[79] Ming text *Xiushi Lu* 髹飾錄 mentioned that Dingzhou was also populated with lacquer craftsmen.
[80] Harry Garner, *Chinese Lacquer* (London: Faber, 1979), 50.
[81] Zhan Zhen-Peng, "Zhu xiu zeng hua 朱髹增華：明初(1368-1435) 官用剔紅器及其相關意涵," *National Palace Museum Research Quarterly* 34, no. 2 (2016): 1–71, https://doi.org/periodicals.npmonline.net/npm/detail/459b5646fe0c74062c3b817ccf7705cc/, 7.
[82] See site-specific summary in Patricia Frick and Annette Kieser, *Production, Distribution and Appreciation: New Aspects of East Asian Lacquer Ware* (Leiden: Brill, 2019), p.86.
[83] Han Qian 韩倩, "Lacquerware in Song Dynasty 宋代漆器", 50.

materials attributed to workshops beyond Zhejiang and Jiangsu provinces further obscures stylistic differences of lacquerware production between Central and Southern regions. What one can extract from existing evidence, however, was that the Shilipu example avoided three-dimensional shaping of lobes. Southern products, on the other hand, exhibited greater diversity and incorporated a broader range of variations.

3.2 Lacquer production process

3.2.1 Interpretation of primary sources

The lobed plates at Nanjing Museum are characterized by their wood core covered in textiles and lacquer.[84] Indeed, the construction method and craftsmanship are typical of practical lacquerware featuring lobed rims from the Song period.[85] Each step of this meticulous process has its own role to not only enhance the vessel's durability but also to provide space for innovation upon the lobed shape.

I will begin by providing a succinct overview of the production process: an appropriate type of wood is selected first, then, the wood is cut into regular slender strips. The strips are softened and bent with a water bath, then dried to allow the desired shape to be achieved. The strips are then layered; the craftsman avoided stacking the ends together, however, to disperse the force of the wood. After gluing the wood together, the piece is laminated with a cloth permeated with lacquer. It is then polished and covered in a ground made from raw lacquer, glue,

[84] Luo Zongzhen 罗宗真,"Huai'an Songmu chutu de qiqi 淮安宋墓出土的漆器," *Wenwu* 文物, no. 5 (1963): 45–56, https://doi.org/10.13619/j.cnki.cn11-1532/k.1963.05.005, 51.
[85] Cai Jianming 蔡剑鸣, "Jiangsu Wuxi Xingzhu Songmu 江苏无锡兴竹宋墓," *Wenwu* 文物, no. 3 (1990): 19–24, 10.13619/j.cnki.cn11-1532/k.1990.03.017, 20.

and ground-up clay sherds, also known as "lacquer ash," or *hui* 灰.[86] After multiple applications and polishings of lacquer ash, a final lacquer coating is applied.

The three fundamental stages in making lobed wares – making the wood base, textile-wrapping and layering of lacquer ash, and surface finishing – are detailed in contemporaneous writings. I read these steps as largely analogues and comparable to throwing, shaping, and glazing in ceramic production. To demonstrate this point, I will undertake an in-depth examination of each step through a comparative analysis of the Yuan text *Nancun chuogeng lu* 南村辍耕录 and the Ming text *Xiushi lu* 髹飾錄. *Nancun chuogeng lu* primarily records miscellaneous anecdotes, focusing on the Yuan and the Song periods, and stands as one of the earliest recorded accounts of lacquerware craftsmanship. Written by lacquer craftsman Huang Cheng 黄成 in the Longqing period (1567-1572) of the Ming dynasty*, Xiushi lu* is the only existing specialized book on lacquerware techniques that has survived. To enrich the understanding of primary sources, I utilize archaeological findings and scientific analysis to confirm the intricacies of crafting lobed lacquerware.

Wooden core: the foundation

The construction of wooden core involves stacking thin sheets of wood rings to make a light base. This method of base construction is well-suited for creating objects with large curvatures, rounded bodies, and complex, varied designs in the vessel walls.[87] This step is called *juansu* 捲素, or "coiling the raw material," in Tao's writing:

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[86] Patricia Frick and Annette Kieser, *Production, Distribution and Appreciation: New Aspects of East Asian Lacquer Ware* (Leiden: Brill, 2019), 96.

[87] Guo Hengfeng 郭恒枫, "Qianxi Songdai minjian riyong qiqi 浅析宋代民间日用漆器," *Journal of Chinese Lacquer* 中国生漆 34, no. 2 (2015): 19–22, https://doi.org/10;3969/j.issn.1000-7067.2015.02.004, 22.

凡造椀楪盤盂之屬，其胎骨則梓人以脆松劈成薄片，於旋牀上膠粘而成，名曰捲素[88]

For making vessels such as bowls, dishes and plates, their core is made of thin sheets of pine wood by carpenters. The wood is split into thin slices and glued together on a turning lathe to form a solid structure. This process is known as *juansu* or "coiling the raw material."

This passage describes the specificity of the technique for making anything circular – bowls, plates, and dishes. It also emphasizes the use of *xuanchuang* 旋牀, literally "turning bed." The passage in *Xiushi lu* echoes the practice of bending wood or treating it on turning wheels:

捲榡，一名坯胎，一名器骨。方器有旋題者、合題者，圓器有屈木者、車旋者，皆要平、正、薄、輕，否則佈灰不厚。佈灰不厚，則其器易敗，且有露脈之病。[89]

Louzha is also known as *pitai* "untreated foetus" or *qigu* "vessel bones." For square-shaped objects, they could be made from turning and joining. For round objects, they could be made from wood-bending and wheel-turning. The wood should be even, regular, thin, and lightweight. Otherwise, the application of lacquer ash will not be thick enough. If the lacquer ash is not sufficiently thick, the object is prone to damage and may cause the problem of exposing the strips underneath.

The act of *chexuan* 車旋 is similar in purpose to *xuanchang* 旋牀, where *xuan* 旋 describes a spinning motion in an orbit or a circle. This step is reminiscent of wheel-throwing technique in ceramics production.

The described manufacturing process of lobe-shaped ware was widespread during the Northern Song period, and material evidence suggests that this technique's origin can be traced back to the Tang and Five Dynasties period. The earliest documented instance of circle-bodied lacquerware is from the Tang tomb in Hubei's Jianli 監利 County, which confirmed that the technology existed since the Tang period (Figure 26).[90] Perhaps what is more telling is the

[88] Tao Zongyi 陶宗儀, active 1360-1368. *Nancun Chuogeng Lu* 南村輟耕錄. Di 1 baned. Yuan Ming Shi Liao Bi Ji Cong Kan, 1. (Beijing: Zhonghua shu ju, 1959), 375.
[89] Huang Cheng 黃成; 楊明註. *Xiushi Lu* 髹飾錄 : [2 卷]. Xu Xiu Si Ku Quan Shu ; Zi Bu Pu Lu Lei, 1115. (Shanghai: Shanghai gu ji chu ban she, 1995), 210.
[90] Li Wenjing 李文靜, *Tianran Daqi* 天然大漆 : 漆器文化與藝術特色, 35.

excavated material at Changzhou Museum with a broken lacquer layer reveals the wooden core underneath (Figure 27). The damaged five-lobed bowl aligns with the description in primary accounts, attesting to the *juansu* method in bowl-type wares.[91] Instrumental analysis also demonstrates the thinness of the core – some as little as 0.5 mm at the mouth – which resonates with the description of an ideal lacquer core as "even, regular, thin, and lightweight" 平、正、薄、輕. Even though the core is lighter and thinner, it is extremely strenuous. By offsetting the joints between each ring and dispersing the tension in the wood, the plate is less susceptible to distortion.[92]

The practicality of employing a thin core in lacquerware can be inferred from an examination of current curatorial practices. When the excavated lacquerware is thin – in the case of bowls and plates, as well as boxes – there were no signs of distortion after being displayed on shelves for a couple of months.[93] Its adaptability to temperature and especially, humidity changes, are evidenced by its relatively unaltered appearance from the state of being buried, to being displayed in a museum environment.[94] With the versatility and strength inherent to the base, it is reasonable to assume that the transportation of lacquerware from southern to northern regions would have a negligible impact on the shape of the wares themselves, due to their resilience to temperature and humidity changes. The wood-stacking method serves to harness the inherent qualities of wood and ensure the longevity of these objects.

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[91] Chen Jing 陳晶, "Wudai shiguo qiqi qianshi 五代十國漆器淺識," *National Palace Museum Research Quarterly* 故宮文物月刊, no. 337 (2011): 99–107, 100.
[92] Zhongguo qiqi quanji bianji weiyuanhui 中国漆器全集编辑委员会, *Zhongguo Qiqi Quanji*, 15.
[93] Jiang Zaichu 蔣缵初, "Tan Hangzhou laoheshan song mu chutu de qiqi 谈杭州老和山宋墓出土的漆器," *Wenwu* 文物, no. 2 (1981): 23–31, https://doi.org/10.13619/j.cnki.cn11-1532/k.1957.07.010, 31.
[94] Jiang Zaichu 蔣缵初, "Tan Hangzhou laoheshan song mu chutu de qiqi 谈杭州老和山宋墓出土的漆器," 31.

Adding textile: strengthening and smoothing

The next step is consolidating the wooden base with lacquer and textile. Both texts describe the process as *shaodang* 梢當, or "bringing the gaps together":

髹工買來，刀刳膠縫，乾淨平正。夏月無膠汎之患，卻煬牛皮膠，和生漆，微嵌縫中，名曰梢當。然後膠漆布之，方加鼇灰。[95]

After being purchased by a lacquer craftsman, the items are carefully carved and the joints are seamlessly glued, clean and right. During the summer months, there is no risk of the glue swelling. Instead, melting ox-hide glue and raw lacquer to apply thinly to the fine seams is a process called *shaodang* or "bringing the gaps together." After, lacquered cloth is applied. Then, a thick layer of ash is added.

The first sentence of the passage suggests the entire process of wooden core making takes place outside of the workshop setting. It was undertaken by *xinren* 梓人, or carpenters, as described in the previous step. The fact that the basic material was bought from a separate group of artisans suggests a division of labour distinct from the complete production chain of ceramics in a kiln setting. From the first step on, all the work carried out on lacquer plates is done by *xiugong* 髹工, which ensures some level of consistency, in contrast to the various types of workers involved in ceramics-making. The coherent process potentially allows more care to be invested in lacquer making. *Xiugong*, or basecoat-lacquer artisan, refers to people who apply mixed ingredients to consolidate the carved wooden base and to embellish the surface.[96] These steps required a comparatively large group of artisans who not only were familiar with the properties of lacquer paint, but also had already been hyposensitized to the toxic effects of the fluid.

[95] Tao Zongyi 陶宗儀, *Nancun Chuogeng Lu* 南村輟耕錄, 375.
[96] Anthony J. Barbieri-Low, *Artisans in Early Imperial China* (Seattle: University of Washington Press, 2021), 225.

捎當，凡器物，先到剄縫會之處，而法漆嵌之，及通體生漆刷之，候乾，胎骨始固，而加布漆。 布漆，捎當後，用法漆衣麻布，以令匏面無露脈，且棱角縫合之處不易解脫，而加垸漆。[97]

Shaodang refers to a technique in which lacquer is applied to the joints or seams of an object. For any object, the process begins by examining and identifying the various seams. *Faqi* lacquer is then applied to these areas, followed by applying raw lacquer to the entire surface. After allowing it to dry, the core structure starts to solidify. Finally, a layer of cloth-coated lacquer, known as *buqi*, is added. *Buqi* is a layer of cloth coated with lacquer, and is used to ensure that the surface of the object has no exposed strips. Additionally, it helps to secure the joints and corners, preventing them from coming apart too easily. Finally, a layer of *yuanqi* is applied.

These two passages describe filling in the gap on the wooden core and coating it with lacquer-soaked textile. This step with the textile is critical because it serves a two-fold function. First, it eliminates *lumai* 露脈, or exposed strips. By getting rid of the marks intrinsic to the material, the makers hide any potential indication of the nature of wood and prime the foundation for a sculptural process. The second function is to consolidate the joints – the fabric is an indispensable part in lacquering process to not only smoothen the surface, but also strengthen the vessel.

Surface treatment

After covering the vessel with cloth, layers of lacquer ash are added, polished, and covered in black lacquer to finish up the surface. The process could take as long as few months:

灰乃磚瓦搗屑篩過，分麄、中、細是也。膠漆調和，令稀稠得所。如髹工自家造賣低歹之物，不用膠漆，止用豬血厚餬之類，而以麻筋代布，所以易壞也。麄灰過，停令日久堅實，砂皮擦磨，卻加中灰，再加細灰。並如前。又停日久，磚石車磨，去灰漿。潔淨停一二日，候乾燥，方漆之，謂之糙漆。再停數月，車磨糙漆，絹帛挑。去漿跡，纔用黑光。[98]

Ashes, bricks, and tile rubble are sifted to sort into coarse, medium, and fine. Blend glue and paint to achieve the desired thickness. For lacquer artisans who produce and sell inferior goods,

[97] Huang Cheng 黃成; 楊明註. *Xiushi Lu* 髹飾錄, 210.
[98] Tao Zongyi 陶宗儀, *Nancun Chuogeng Lu* 南村輟耕錄, 375.

they avoid the use of lacquer and opt for substances like thickened pig blood, substituting linen fibers for cloth. This likely leads to a susceptibility to damage. After applying a coarse layer of ash and letting it settle, the item becomes firm and solid over time. Then, sandpaper is used to smooth the surface, followed by the addition of a layer of medium-grade ash and another layer of fine ash, repeating the previous steps. After another few days of settling, the excess ash paste is removed by polishing the item with a brick or stone on a lathe, eliminating the traces of the lacquer ash. After waiting for a day or two for it to dry, the item is finally lacquered, resulting in what is called *caoqi*, or "rough lacquer". After several more months of settling, the rough lacquer is smoothed. Then, a silk is carefully chosen. Any residue or traces of the paste are removed (with the silk). Only then is the black lacquer applied, giving it a glossy black finish.

黑光者，用漆斤兩若干，煎成膏。再用漆，如上一半，加雞子清打勻，入在內，日中晒翻三五度，如栗殼色，入前項所煎漆中和勻。試簡看緊慢，若緊，再曬；若慢，加生漆。多入觸藥。觸藥卽鐵漿沫。用隔年米醋煎此物，乾為末，入漆中，名曰黑光。用刷蘸漆，漆器物上，不要見刷痕。停三五日，待漆內外俱乾，置陰處晾之，然後用楷光石磨去漆中類。[99]

To create a black sheen, take about two catties of lacquer, and simmer it into a paste. Then take about half of the previous quantity and mix it thoroughly with beaten egg whites. Pour this mixture into the previous lacquer paste, and let it sit in the sun, turning it three to five times a day until it reaches a chestnut shell colour. Test its consistency; if it is too thick, sun-dry it more, and if it is too thin, add more raw lacquer. Add a significant amount of *chuyao* (a kind of iron slag foam) into the mixture. Boil it in vinegar made from rice of the previous year and grind it into a powder, then mix it into the lacquer. This mixture is called *heiguang*, or "black sheen". Dip a brush into the lacquer and apply it to lacquerware, ensuring that brush marks are not visible. Let it sit for three to five days until both the inside and outside of the lacquer are completely dry. Place it in a shaded area to air-dry, and then use fine abrasive stones to remove any foreign particles from the lacquer.

Tao focuses on black lacquer in his explanation. However, the making and application of red lacquer, or *zhuhong* 朱紅, follow the same steps: "the treatment of adding textile and lacquer ash are the same as before" 修治布灰，一一如前.[100]

As Tao suggests, there is a gradual and sequential application of lacquer ash of decreasing coarseness. This approach slowly sets up the surface to be more refined. After eliminating the evident materiality of wood in the previous step *shaodang*, more polishing

[99] Tao Zongyi 陶宗儀, *Nancun Chuogeng Lu* 南村輟耕錄, 375.
[100] Tao Zongyi 陶宗儀, *Nancun Chuogeng Lu* 南村輟耕錄, 375.

technologies are employed between every application of lacquer ash: sandpaper (*shapi* 砂皮), brick-stone (*zhuanshi* 磚石), polishing stone (*kaiguang shi* 楷光石). These tools decrease in strength to treat the surface more gently as one approaches the outermost coating to build up a flawless, lustrous surface. As suggested by secondary sources, polishing lacquer was one of the most fundamental technologies used quite expertly to make popular lacquer ware in the Song period.[101]

Notably, the quest for a perfectly smooth surface extends beyond the mere elimination of inherent material impurities. Extra caution is taken to erase any traces of the artisan's hand that may have been left behind during the successive layers of lacquer application. Richard Sennett terms "material consciousness" the way in which materials arouse the mind and suggests that, over time, this thinking has taken shape in three important ways: as metamorphosis, presence, and anthropomorphosis.[102] The concept of "presence," which is how human presence is registered onto the materials, carries particular significance in the context of lobed lacquerwares. I read specific expressions – such as "to get rid of traces of the paste" 去漿跡 and "no brush marks to be seen" 不要見刷痕 – as emphasizing the importance of obscuring any signs of the maker's touch. A perfectly smooth surface, free of brush movement and lacquer droplets, is highly desirable. In contrast to the more standardized processes in ceramics production, which affords little room for individual care, lacquer makers' attention to detail is crucial. As I will elaborate later in relation to the maker's inscription, attention paid to suppressing any kind of

[101] Feng, Lisheng, and Jueming Hua, *Thirty Great Inventions of China: From Millet Agriculture to Artemisinin* (Singapore: Springer, 2020), 325.
[102] Catherine Stuer, "To Have Temperature: Material and Metamorphosis in Nineteenth-Century China," in *The Allure of Matter: Materiality Across Chinese Art,* eds. Wei-Cheng Lin and Orianna Cacchione (University of Chicago's Center for the Art of East Asia and Smart Museum of Art, 2021), 117.

working traces contributes to preserving the integrity of the organic ornamentations, making the lobed plate more life-like.

In short, the consecutive layering of the lacquer mixture can be perceived as analogous to an additive sculptural process. This approach allows meticulous shaping of ornamental features in a manner that seamlessly integrates them with the structural body of the plate.

3.2.2 Lacquer as mediator between materials

The in-depth description of the three steps in lacquer making details the multitude of mediums involved in the construction of lobed plates. In addition to essential ingredients such as wood and lacquer, textile and lacquer ash are employed as refining technologies. The complex making process mediates many mediums at once; and the fluidity of lacquer is the indispensable ingredient in negotiating the tension between organic and inorganic compounds. The interplay of these compounds creates a dialogue between lacquer ash – a blend of inorganic substances used to sculpt lobes – and wood, an organic material whose qualities are harnessed in the process.

The main ingredients for the base are organic materials. Wood, sourced from trees, is organic in nature and susceptible to environmental changes. Textile, another organic element, constitutes the second step to consolidate the wooden foundation. Proteins are often added to ground layers of Asian lacquer as a binder, such as the ox-hide glue in Tao's writing.[103] The addition of proteins to lacquer greatly increases the durability of the ground.[104] Whereas animal glue had been identified in ground layer samples from many lacquered objects, none has been found on the surface layer.[105]

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[103] Arlen Heginbotham et al., "Some Observations on the Composition of Chinese Lacquer," *Studies in Conservation* 61, no. 3 (2016): 28–37, https://doi.org/10.1080/00393630.2016.1230979, 33.
[104] Arlen Heginbotham et al., "Some Observations on the Composition of Chinese Lacquer," 33.
[105] Arlen Heginbotham et al., "Some Observations on the Composition of Chinese Lacquer," 33.

However, it is with inorganic materials that the volume of the lobe is built up, rendering the plate more life-like. Lacquer ash, a mixture of inorganic materials, is used to stabilize the state of both wood and textile. Studies confirm that powdered porcelain, horn powder, bone ashes, shell, and stone powder were used as stucco layer materials in lacquering techniques.[106] Research using various instruments to distinguish the inorganic components of lacquer shows a Southern Song plate used powder from brick or clay as key ingredient in the stucco layer, confirming the presence of inorganic materials.[107]

Lacquer assumes an intermediary role in the construction of multi-layer plates. It serves essential functions in solidifying the wooden core, adhering textile to stacked wood strips, and ensuring a seamless surface. The lacquer sap in its liquid state is organic, but when it dries, by an irreversible chemical reaction, it becomes inorganic by producing a hardened film through the polymerization and evaporation of the solvent. The fluidity of lacquer in various states facilitates its mediation of diverse materials and innovation in lobed forms.

3.3 Innovation of lobed shape – volume

Adapting similar technology and methods of construction applied to the creation of ten-lobed plates, a more fluid interpretation of lobed shape emerged in the Northern Song. This interpretation is distinguished by its attention to the simulation of volume and soft contours. Such innovative interpretations evoke organic qualities in natural forms, as I will expand upon in the next section.

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[106] Xinying Hao et al., "Identification of Minerals and Mineral Pigments in Lacquer by the Comprehensive Comparative Analysis of Spectroscopy Information," *Spectroscopy Letters* 54, no. 6 (2021): 446–57, https://doi.org/10.1080/00387010.2021.1940208, 454.
[107] Xinying Hao et al., "Identification of Minerals and Mineral Pigments in Lacquer by the Comprehensive Comparative Analysis of Spectroscopy Information," 453.

The Nanjing Museum participated in the excavation and cleaning of five Northern Song tombs and discovered 75 relatively complete pieces or sets of lacquerware.[108] An exemplar showcases a six-lobed outwardly flared mouth, with round and flat bottom supported by a ring foot (Figure 28).[109] It is 16.5 cm in diameter and 3.7 cm in height. The lobed edges seamlessly join the base with no visible seams. The lacquer applied over the surface is meticulously and compactly done, creating a smooth surface. The wall is segmented with constructed ridges on the inside, and carved out sections echoing the ridges on the outside. Whereas the interior ridges extend from the bottom to the rim, the exterior concave parts stem from the bottom and only reach half-way through the wall. This plate, although shaped in six lobes in an attempt to imitate silver shapes, presents a tactile dimension drastically different from the angular lobed type.

The divergence between the ceramic and lacquer adaptations of the silver form encompasses two key aspects: the arrangement of the ridges and the curvature of the wall. The ridges on Ding ware maintain an even appearance throughout. On lacquerware, however, a given ridge has a higher and more pronounced profile in the middle, gradually thinning and becoming narrower towards both extremities. The wall's curvature also stands out as a crucial element in the variation of lobed shape. Unlike ceramics' straight slanting wall, lacquerware exhibits an inward and then outward curvature, all in a continuous and smooth contour. Such characteristics engage the ornamental features with the three-dimensional space, and I will argue later, imbue the lobes with an organic quality. The Suzhou Museum plate – excavated in Suzhou and dated to the end of the Northern Song – exemplifies the effect in the Nanjing Museum example (Figure

[108] Luo Zongzhen 罗宗真,"Huai'an Songmu chutu de qiqi 淮安宋墓出土的漆器", 45.
[109] Luo Zongzhen 罗宗真,"Huai'an Songmu chutu de qiqi 淮安宋墓出土的漆器", 45.

29).[110] The plate is slightly smaller, measuring 12.5 cm in diameter, 3.3 cm in height, and has a bottom diameter of 6.5 cm. The inside is lacquered red and the outside, black. The side view accurately reveals the intricate craftsmanship involved in the ridges and the wall curvatures (Figure 30).

The particularity of the lobed form in lacquer seems to evolve toward the shape of a delicate flower. As previously suggested, Ding ware was often characterized by its flower patterns, such as the case in *Gegu yaolun*, despite having a minimized lobed shape. Lacquerware's voluminous lobed shape, however, renders it more life-like. Present-day museums and art historians often characterize the lobed rim as *huakou* 花口, or "flower-mouth." The key question remains, were lobed plates ever recognized as possessing a natural form by people of the Song period? I adopt Grabar's approach to understand modern viewers' perception of these objects in historicized terms: "What did they see or mean to represent? Would the transformation of the mimetic sign be important, instead of the sign itself?"[111]

In *Yunxian zaji* 雲仙雜記, a compilation of writings from the Tang and the Song periods, desirable utensils for inviting guests to dine at home are described: "向範待客 有漆花盤 科斗筯 魚尾匙."[112] This passage describes that Xiangfan welcomes guests with lacquered flower plates, tadpole-type chopsticks and fish-tail spoons. Because both *kedou* (tadpole) and *yuwei* (fish tail) describe the shape of their respective utensil, I interpret *qihua* 漆花 as flower-shaped lacquer used to characterize the plate. Ding wares deviate from the silver prototypes, simplifying

[110] Yao Chenchen 姚晨辰, "Songdai Suzhou chutu qiqi guankui 宋代苏州出土漆器管窥," *Zhongguo shengqi* 中国生漆, vol. 3 (2018), 12–16, https://doi.org/10.19334/j.cnki.issn.1000-7067.2018.03. 003, 15.
[111] Oleg Grabar, *The Mediation of Ornament*, 19.
[112] Feng Zhi 馮贄, *Yunxian Zaji* 雲仙雜記, vol. 3, 10 vols. (Shanghai: Shangwu yinshu guan 商務印書館, 1934), 76.

elements to prioritize the functional form. In contrast, the lobed form in lacquerware seems to be enlivened and imbued with organic qualities, which offers potential for contemporaneous viewers to perceive it as a representation of a flower.

I adopt Grabar's proposal in regarding ornament as an intermediary between viewers and users of art, the makers, and the object itself. [113] His discussion on the theory of intermediaries on natural forms is especially pertinent to understand the role of simulated flower-like forms in lacquerware. Though it is difficult to identify the edges or boundaries of the presence of natural features in artistic creativity, the attribute particular to natural form is that it suggests or evokes life.[114]

Considering the features individually – interior ridges, exterior concave carvings, and lobed rims – none represent any part of a flower in immediately recognizable visual forms. When the ornamental components are viewed as an integrated whole, an intermediary zone between user or viewer and work of art, in Grabar's words, is created. Building upon this, I argue that the intermediary zone is to be understood three-dimensionally, through organic interaction between the curvatures, convex ridges, and concave carve-outs.

Whereas both silver and white ceramics have rectilinear walls, lacquer's curvilinear sides are marked by its changing directions of curvatures, occupying the three-dimensional space. The sides curve up in an exponential manner, reaching an inflection point midway and expanding outwardly. This movement imbues the foliate rim with a sense of growth. In fact, the shape of these sides is best described by means of radial coordinates in Thompson's theory of transformation.[115] Radial coordinates are especially applicable in cases where the growing

[113] Oleg Grabar, *The Mediation of Ornament*, 45
[114] Oleg Grabar, *The Mediation of Ornament*, 224
[115] D'Arcy Wentworth Thompson, *On Growth and Form* (Cambridge: Cambridge Univ. Press, 1952), 278.

structure includes a "node," or point where growth is absent or at a minimum.[116] He proposes that the shape of a leaf can be understood accordingly, taking the stem as the node and increasing angles between radii resulting in various configurations (Figure 31).[117] Even though Thompson's leaf diagram is two-dimensional, radial coordinates appropriately capture the changing curvatures in lobed plates. I read the plate bottom as the node, and sloping sides of the lobe as radial projection from the bottom. The Suzhou Museum example (Figure 30) displays a gradual transition like lanceolate leaf with relatively small radii (Figure 31). Coordinates best describing growing structure is suitable to the characterization of lobed shape, which alludes to the organic nature of the lobed form.

Resonating with the construction of sloping sides, the ridges' changing width allow it to burst out of the plane, speaking to the users/viewers three-dimensionally. This nuance stands in stark contrast to the planar design in ceramic counterparts. The broadening of the ridges appears to evoke the notion of overlapping of petals, where the intersection of two lobes results in a thicker section in the middle. On the back, the concave carve-outs echo the changing width of the raised ridges, broad in the middle and narrower towards the ends. Moreover, the individual ridges each exhibit slight variations, because the additive process depends on the precision of the makers' manual work. These small differences call to mind the nuanced irregularities often found in nature's creations. In short, the intermediary zone foregrounds the three-dimensionality of the ornamental features while encapsulating their growing, organic quality to animate the static surface of the lacquerware.

[116] D'Arcy Wentworth Thompson, *On Growth and For,* 278.
[117] D'Arcy Wentworth Thompson, *On Growth and For,* 279.

In addition to the sensory reception of the flower-like lobes, Song architectural conception of flowers as detailed in *Yingzao fashi* 營造法式 (YZFS), a technical treatise on architecture and craftsmanship written by Li Jie 李誡 (1065 – 1110), also places significant importance on the act of growing. More specifically, the stage of blossoming is foregrounded. In the earliest Chinese dictionaries, *Erya* 爾雅 and *Shuowen jiezi* 說文解字, the character *hua* 華 has two basic meanings: "flowers" or "to burst into flower."[118] Throughout literary records, *hua* with these two meanings is very common. *Hua* as "flowers" is frequently used in all sections of the *YZFS*, as in *xieshenghua* 寫生華 (life-like flowers), *juanyehua* 卷葉華 (scrolled-leaf flowers), and so on.[119] Since flower shapes in the architectural context was not concerned with any detailed construction of a single flower, the craftsmen geared their focus towards the visual effect of a flower coming into bloom. Such effect is created by adding protruding arms one by one, thus acquiring the name *hua*, "flower" or "flowering" (Figure 32).[120] Similarly, the act of blossoming can be viewed as a critical aspect of lacquer objects, especially in the treatment of wall curvature in "growing" radii coordinates. It potentially carries an equivalent level of significance as in the architectural context.

3.4 Lacquer materiality: warmth of lacquer

The surfaces of both silver and Ding ceramics are distinguished by their capacity to reflect light. The lustrous quality of a silver plate exudes a cold sensibility, while Ding ware's

[118] Jiren Feng, *Chinese Architecture and Metaphor: Song Culture in the Yingzao Fashi Building Manual* (Honolulu: University of Hawai'i Press, 2012), 142.
[119] Jiren Feng, *Chinese Architecture and Metaphor*, 142.
[120] Jiren Feng, *Chinese Architecture and* Metaphor, 146.

highly reflective surface may adopt a more yellowish tint due to the influence of smoke within the kiln environment. In contrast, lacquer's tactility does not prioritize glossiness; the surface is instead characterized by the "warmth" of lacquer. Related to the expression "to have temperature" or *you wendu* 有溫度, it refers to a "warm, human touch" in things and actions.[121]

From the perspective of the maker, lacquer does not identify with a stable, essential property as it is made. Rather, it extends across changing states and sensory dimensions, transitioning from a liquid sap to a solidified and hardened material of great strength.[122] The craftsmen evoke a sense of "warmth" in lacquer, which is, to some extent, connected to the soft tactility of the partially dried surfaces where successive layers are applied.[123]

The warmth of lacquer extends beyond the production phase, however. The finished product accentuates a subtly reflective surface after meticulous polishing steps detailed in *Chuogeng lu*. Diverging from the luminous surface one often finds on Ding ceramics (Figure 22), the reflective areas on lacquerware are less conspicuous, adopting instead a subdued matte finish (Figure 29). Additionally, the colouration of the surface contributes to a warmer tactile experience. In both cases of monochrome lacquer and bi-coloured lacquer with red interior, the plate emanates a warmer tonality softened by its choice of colour. It evidences a departure from the imitation of a consistently cold, lustrous exterior of silver or the reflective glaze of Ding ceramics.

[121] Catherine Stuer. "To Have Temperature: Material and Metamorphosis in Nineteenth-Century China", 115.
[122] Harry Garner, *Chinese Lacquer*, 84.
[123] Catherine Stuer,"To Have Temperature: Material and Metamorphosis in Nineteenth-Century China", 115.

3.5 Inscription and tactility

The technology of standardization in Ding ceramics' production minimizes individual attention, resulting in coarse rims and discernible traces of the makers' hands. In contrast, every step of lacquerware production attends to the elimination of any potential traces, whether it be the material's or artisan's. On one hand, suppressing marks of working hands are of critical concern in ideal lacquer craftsmanship. On the other hand, artisans explicitly inscribe and declare their presence on the bottom or inside the foot ring of the lacquered plates. The two elements form a seemingly paradoxical relationship. I contend, however, that the strategic placement of inscriptions not only preserves ornamental integrity but also serves the dual purpose of ensuring enduring lacquer quality.

The practice of inscribing lacquerware has a rich historical lineage, with its origins tracing back to the Warring States period (475–221 BCE). High-quality lacquer objects had been furnished with inner and outer inscriptions, oftentimes varying widely in terms of length and content over the different epochs.[124] Similar inscriptions have been found from the Han period (206 BCE – 220 CE), which indicate a flourishing government-controlled lacquer industry.[125] The stamped characters *su* 素, *bao* 包, *shang* 上, *zao* 造, *bao* 饱, and *cao* 草 are imprints made by artisans such as plain worker, wrapping worker, upper worker, and manufacturing worker during the production process.[126] This reflects that the early Western Han lacquerware production involved multiple stages and a system of product responsibility with stamped marks denoting the workers involved. The inscriptions allow one to draw conclusions about the division

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[124] Patricia Frick and Annette Kieser, *Production, Distribution and Appreciation: New Aspects of East Asian Lacquer Ware*, 99.
[125] Lothar Ledderose, *Ten Thousand Things: Module and Mass Production in Chinese Art* (Princeton: Princeton University Press, 2000), 79
[126] Li Wenjing 李文靜, *Tianran Daqi* 天然大漆 : 漆器文化與藝術特色, 71.

of labour in lacquer production, the organization of the workforce, and the bureaucracy in the state factories.[127]

In contrast to the ancient times, the unit of manufacture for lacquerware in the Song period was termed *zuo* 作, or workshop. Southern Song writing *Mengliang lu* 夢粱錄 mentioned *qizuo* 漆作 when describing all kinds of manual labour workers: "其他工役之人，或名为作分者."[128] The famous shops in the marketplaces are generally named after the surname of the shop owner or the origin of the goods they sell. Compared to the Han tradition, the division of labor during the Song period was simplified and more centralized around the unit *zuo*. As described in *Chuogeng lu*, *xiugong* purchases the wooden base from a carpenter and oversees the subsequent steps, including lobe sculpting and surface finishing.

Resonating with the type of manufacturing environment, the inscription practice was also simplified for Song lacquerware. 19 of the 72 pieces are inscribed from the excavation of five tombs at Yang Miao Zhen, a town near Huai'an; and the inscription is always written in red.[129] The degree of completeness also varies from one object to another. Some consist of a place name and a surname, such as the case with *Hangzhou Hu* 杭州胡, literally "the Hu workshop in Hangzhou."[130] The fullest ones follow the formula employed in the Han period, such as "戊申溫州[ ]三叔上牢," literally "in the year of Wushen, Sanshu secured [the lacquered object] in Wenzhou."[131] What remains different, is that only the last name of the workshop is inscribed, in

[127] Lothar Ledderose, *Ten Thousand Things,* 79.
[128] Wu Zimu 吳自牧, *Mengliang Lu* 夢粱錄, vol. 13, 20 vols. (Shanghai: Gu shu liu tong chu, 1921), 175.
[129] Hin-Cheung Lovell, "Sung and Yüan Monochrome Lacquers in the Freer Gallery", 122.
[130] Luo Zongzhen 罗宗真,"Huai'an Songmu chutu de qiqi 淮安宋墓出土的漆器", 48.
[131] Luo Zongzhen 罗宗真,"Huai'an Songmu chutu de qiqi 淮安宋墓出土的漆器", 49.

contrast to all workers involved at different steps of the production. This shift points to the emphasis on workshop as the unit of responsibility for the products.

This tradition distinguishes authorship in lacquer production from that of ceramics, and the characters employed deserve special attention. The character *lao* 牢 – which has the primary meaning of being "to arrest," "to grab and confine" – is often observed at the end of the inscription. This practice stemmed from the Han period.[132] The recurring phrase *shanglao* 上牢 may, in the lacquer context, refers to the process of making layers of lacquer adhere securely to the base and to each other.[133] The forcefulness embodied in the character *lao* attests to lacquer artisans' concern, as detailed in Tao's writings, in taming potential volatile interaction between a multitude of organic and inorganic materials. Indeed, in comparison to the roughly finished surface in Ding ware, the well-wrapped lacquered plate is made to last.

This inscription tradition is not only significant for the characters used but also its strategic placement, typically at the bottom or foot ring of the plate. This discreet location avoids disrupting the integral body with organic ornamentations and ensures that the inscription remains hidden from viewer/user's immediate sight. Analogous to the deliberate omission of artisans' hand movements, the inscription's placement is carefully chosen to prioritize ornamental features, while confirming the longevity of lacquered plates.

In addition to ensuring the quality of the lacquerware with the character *lao*, lacquer makers also asserted their individuality with the use of *huaya* 花押, literally "flower-signature". The use of *huaya* first attracted the literati's attention during the Song period. Ye Mengde 葉夢

[132] Anthony J. Barbieri-Low, *Artisans in Early Imperial China*, 77.
[133] Hin-Cheung Lovell, "Sung and Yüan Monochrome Lacquers in the Freer Gallery," 123.

得 (1077 – 1148) attributes the origin of *huaya* to Tang calligraphic signatures.[134] *Huaya* in literati writing system had gradually gone out of fashion starting the mid-Northern Song period, but the practice in official documents was never interrupted.

Beyond serving as a signature, *huaya* held other attributes favoured by the literati. Guo Ruoxu designates in *Tuhua jianwen zhi* 圖畫見聞誌 that the source of inspiration for *huaya* remains the "heart-mind" of a person,[135] where each unique signature corresponds to the inner essence of a person. Consequently, *huaya* was not merely a replacement for a signature with legal implications, but it also intimately relates to one's inner sentiments and serves as a tangible representation of the heart-mind. By including *huaya* as part of the inscription, lacquer makers extended their efforts beyond the assurance of product quality. They imbued the flower-shaped plates with their personal dedication, potentially elevating these objects from mere items with functionality to artistic expressions laden with care and intention.

Conclusion

The primary objective of this research project is to explicate the transmedial interpretation of lobed ornamentation in ceramics and lacquer during the Northern Song period. In chapter one, I attend to the production environment and making process of Ding white ceramics, and their contribution to render the lobed ornamentation as a planar design. I suggest the parallels between materiality of Ding ceramics and silverware, first drawing upon

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[134] He Yanquan 何炎泉, "Ya wei xinyin – Beisong wenren chidu zhong de huaya 押為心印—北宋文人尺牘中的花押," in *Kai Chuang Dian Fan: Bei Song De Yi Shu Yu Wen Hua Yan Tao Hui Lun Wen Ji* 開創典範：北宋的藝術與文化研討會論文集, ed. Wang Yaoting (Taipei: Guo li gu gong bo wu yuan, 2008), 619–30, 619.

[135] He Yanquan 何炎泉, "Ya wei xinyin – Beisong wenren chidu zhong de huaya 押為心印—北宋文人尺牘中的花押," 626.

contemporaneous literary accounts and poetry to identify desirable features of silver, then employ a combination of sensory perception and chemical analysis of Ding ceramics. As well, I relate the material manifestation of standardized production at kiln sites – coarse rim and presence of working traces – to the question of a maker's care and argue for limited artistic attention attributed to the production of Ding lobed ware.

In chapter two, I undertake a meticulous reading of two seminal, yet understudied texts on lacquer manufacture in the middle period – *Zhuogeng lu* and *Xiushi lu* – to unlock what the potential textual sources provide to understanding of the making of lobed-shaped lacquerware. The intricate steps evidence a heightened level of craftsmanship that eliminates both material and human imprints, rendering three-dimensional lobes with organic qualities. Despite these innovations, the finished objects retain traditional elements of lacquer craftsmanship, such as warmer tones and a matte finish, distinguishing it from the conventional uniform and glossy surfaces observed in silver and ceramics. Likewise, the inscription tradition serves as a testament to the enduring nature of lacquer. The fusion of traditional craftsmanship with the innovation of the lobed form situates the final product in a natural state, analogous to a "blooming" flower, especially when examined in the context of architectural practices.

Nonetheless, unsolved questions persist regarding the social and cultural background that propelled the widespread adoption of lobed ornamentation across diverse mediums. While not strictly adhering to antiquarian traditions, the adaptation of the lobed form capitalizing on the material potentialities of ceramics and lacquer opens avenues for the creation of unique aesthetic experiences. It is worthwhile to compare Ding ceramics of the Northern Song to ceramics, also adorned with lobed rims, in the Liao period (907 – 1125). The Liao period was formed by nomadic Khitan and was profoundly influenced by the artistic heritage – the techniques and

cultural elements – of the Tang period.[136] Therefore, conducting a survey of excavated lobed ceramics and visual representation of these from the Liao period will provide valuable insights into the comparative aesthetic sensibilities of these cultures regarding lobed ornamentation.

An additional avenue of inquiry involves situating the flower-like lobed ornamentation within the aesthetics framework of the Northern Song period by examining the connection between painting and crafts. In the painting tradition, there was the trend of appreciating formal-likeness in flower-and-bird paintings. The *Xuanhe huapu* 宣和畫譜, an imperial painting catalogue of the Northern Song period, records that ideal paintings have the "ability to inspire men's minds, to contend with Creation and transform men's souls, like the experience one would get by approaching close and viewing the real thing."[137] Featuring organic qualities, lobed lacquerware was also perceived as having the shape of a flower by contemporary viewers, which seem to align with the desirable qualities in paintings of the Song period. This potential convergence of aesthetic ideals prompts inquiries into the status of lacquer as a "craft" in the Northern Song period and the implications for craftsmen's creative agency and social positioning.

[136] Margaret Medley, *Metalwork and Chinese Ceramics*, 9.
[137] Amy McNair, *Xuanhe Catalogue of Paintings: An Annotated Translation with Introduction* (Ithaca (New York): East Asia program, Cornell University, 2019), 316.

Figures

Figure 1: Mural of a servant holding a lobed plate, 7th century. Tomb of Tang princess Fangling, Shuangbao village, in Shanxi province. In Li Xingming, *Tangdai Mushi Bihua Yanjiu* (Xi'an: Shanxi renmin meishu chubanshe, 2005), p. 245.

Figure 2. Stone carving of servants, 7th century. Tomb of Li Shou of the Tang. In Sun Ji, "Some Remarks on Paintings Engraved on the Stone Coffin of Li Shou," *Wenwu* , no. 05 (1996): 33–49, https://doi.org/10.13619/j.cnki.cn11-1532/k.1996.05.005, p. 44.

Figure 3. Cup with figures in a landscape, 9th century, silver with parcel gilding, H. 7.3 cm; W. 13.3 cm; D.7.6 cm. The Metropolitan Museum of Art, New York.

Figure 4. Wine cup with two ducks, 8 – 9th century, silver with parcel gilding, H. 3.2 cm; W. 14.3 cm; D.7.6 cm. The Metropolitan Museum of Art, New York.

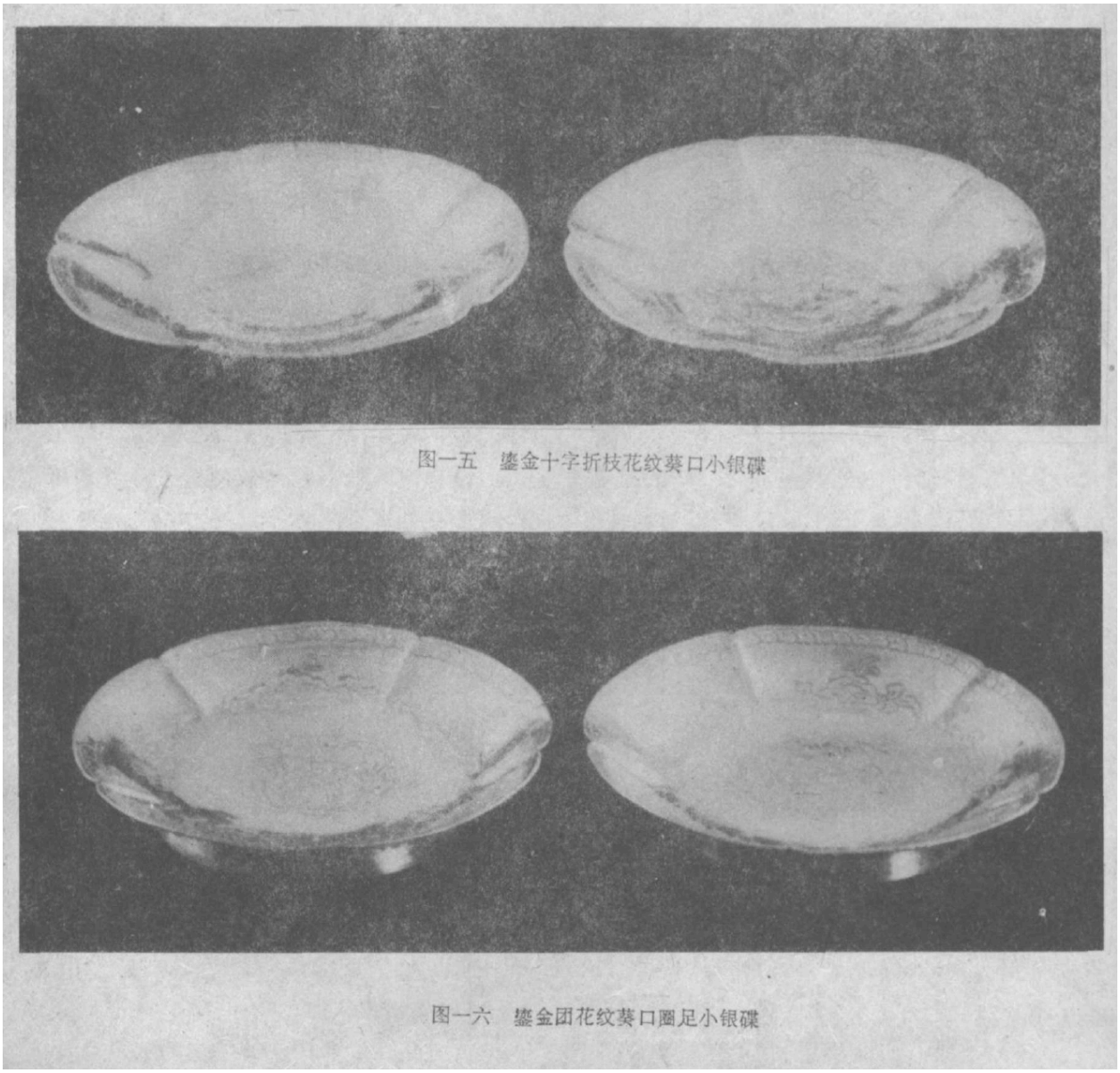


Figure 5. Lobed plates, Tang period, silver with gilding, H. 13.5 cm, mouth diameter 11.5 cm. Famen Temple, Fufeng county, in Shanxi province. In “Fufeng famen sita tangdai digong fajue jianbao,” *Wenwu*, no. 10 (1988): 1–28, https://doi.org/10.13619/j.cnki.cn11－1532/k.1988.10.00, p. 14.

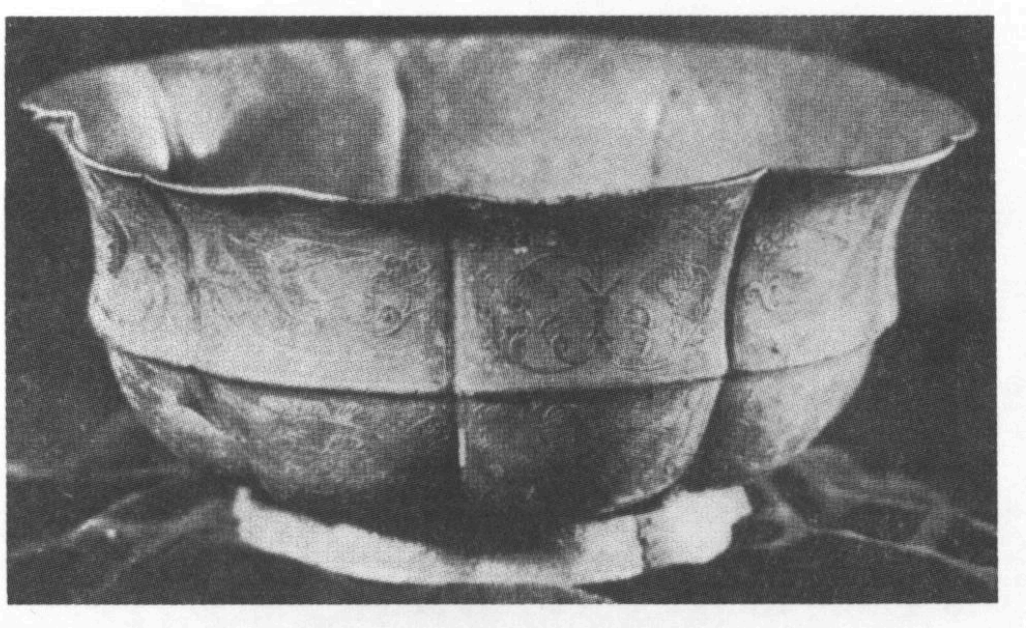


Figure 6. Silver bowl, 8th – 9th century, diameter 18 cm. Xi'an, in Shaanxi province. In Jessica Rawson, "Central Asian Silver and Its Influence on Chinese Ceramics," *Bulletin of the Asia Institute* 5 (1991): 139–51, https://doi.org/https://www.jstor.org/stable/24048292, p. 144.

Figure 7. Dish with six lobes, 11th century, Ding ware, H. 3.2 cm; diameter 15.5 cm. British Museum, London.

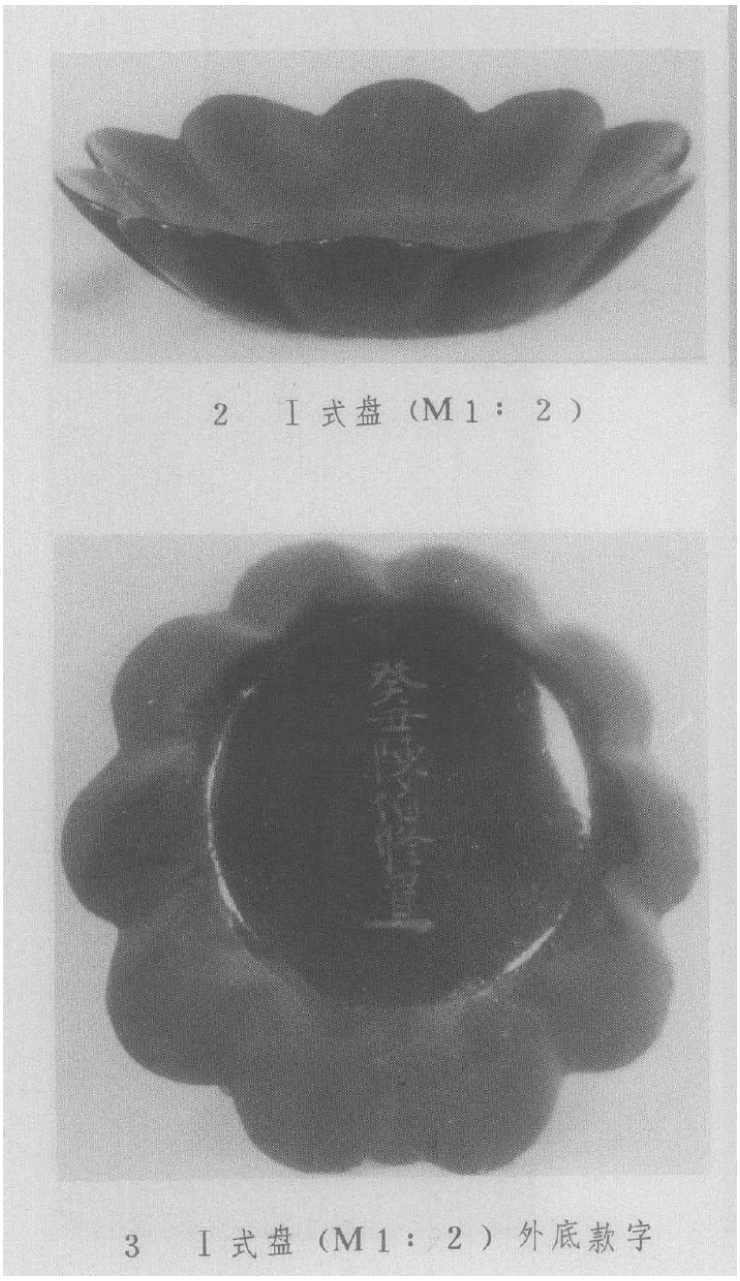


Figure 8. Plate with ten lobes, Northern Song, wood and lacquer, H. 3.6 cm; bottom diameter 15.8 cm; mouth diameter 15.8 cm, in "Jiangsu Wuxi Xingzhu Songmu," *Wenwu*, no. 3 (1990): 19–24, 10.13619/j.cnki.cn11-1532/k.1990.03.017, p. 24.

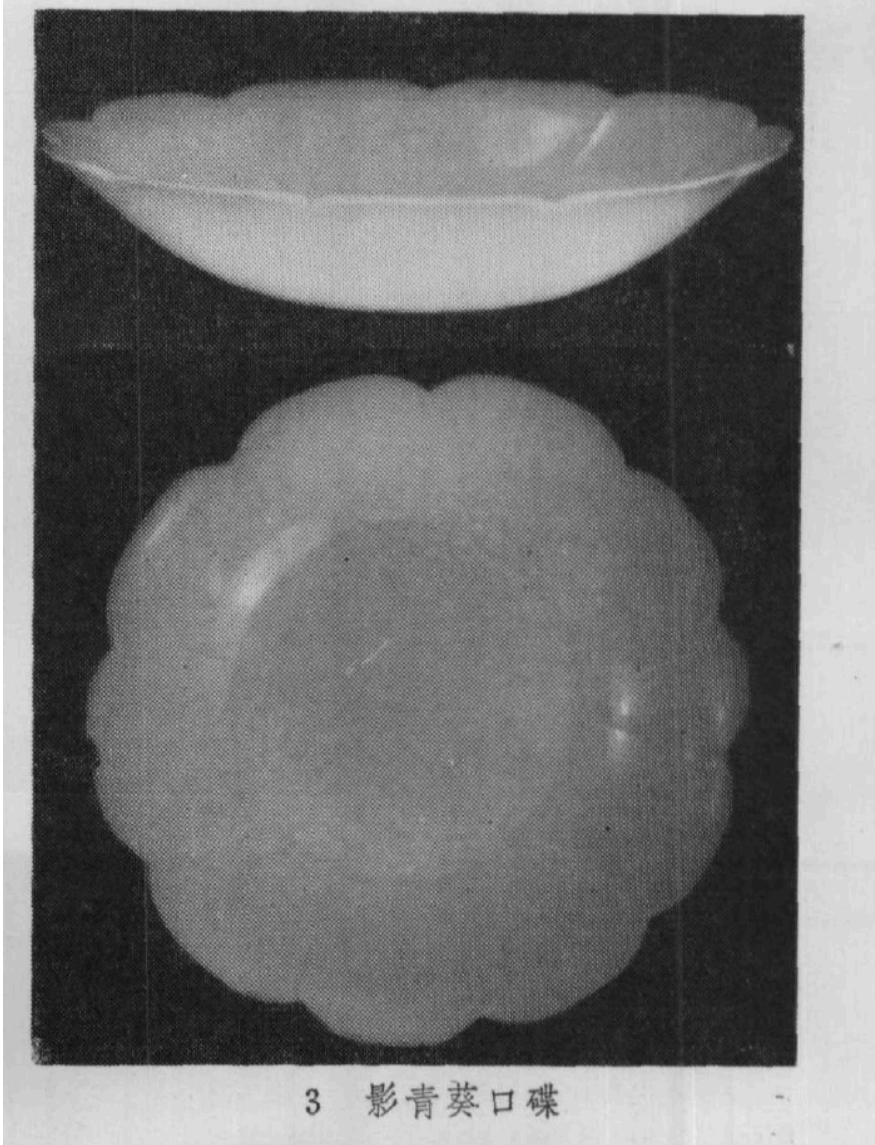


Figure 9. White lobed plate. Northern Song, H. 2 cm; bottom diameter 3.6 cm; mouth diameter 11 cm, in “Jiangxi Faxian Jizuo Beisong Jinianmu”, *Wenwu*, no. 10 (1980): 28–34, 10.13619/j.cnki.cn11-1532/k.1980.05.003, p. 34.

Figure 10. White lobed plate. Northern Song, H. 2.6 cm; base diameter 5.6 cm; mouth diameter 10.8 cm, in "Shandong Jinan Changqing Guyun Songmu fajue jianbao", *Wenwu*, no. 2 (2016): 21–40, DOI:10.13619/j.cnki.cn11-1532/k.2016.02.002, p. 30.

Figure 11. Map of Ding-type kilns sites. In Lü Chenglong, "Dingzhou huaci tianxia bai", The Palace Museum, https://www.dpm.org.cn/ceramics/talk/252560.html.

Figure 12. Stoneware with incised inscription and transparent glaze, 10th – 11th century, Xing or Ding ware, H. 2.9cm; diameter 13.4 cm, Lincheng or Quyang county, Hebei province. The British Museum, London.

Figure 13. Hollyhock-shaped dish with incised lotus pond and mandarin ducks decoration in white glaze, Song period, H. 4.3 cm; diameter 20.4 cm. National Palace Museum, Taipei.

Figure 14. Lobed Ding white plate, Northern Song, H. 1.9cm height; bottom diameter 7.3 cm; mouth diameter 11.3 cm. Palace Museum, Beijing.

Figure 15. Bottom view of dish with scalloped rim, 11th century, Ding ware, diameter 16.8 cm. The Metropolitan Museum of Art, New York.

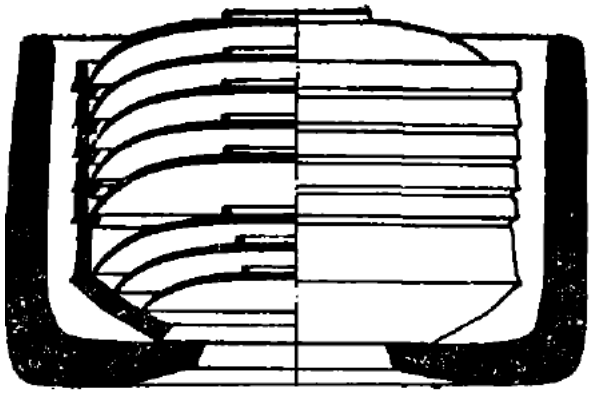


Figure 16. Hand-drawn scheme of flip-over firing technique, In Li Huibing and Bi Hainan, "Lun Dingyao shaoci gongyi de fazhan yu lishi fenqi," *Wenwu*, no. 12 (1987): 1119–39, p. 1123.

Figure 17. Bottom view of lobed Ding white plate, Northern Song, H. 1.9cm height; bottom diameter 7.3 cm; mouth diameter 11.3 cm. Palace Museum, Beijing.

Figure 18. Side view of lobed Ding white plate, Northern Song, H. 1.9cm height; bottom diameter 7.3 cm; mouth diameter 11.3 cm. Palace Museum, Beijing.

Figure 19. Dish with scalloped rim, 11th century, Ding ware, diameter 16.8 cm. The Metropolitan Museum of Art, New York.

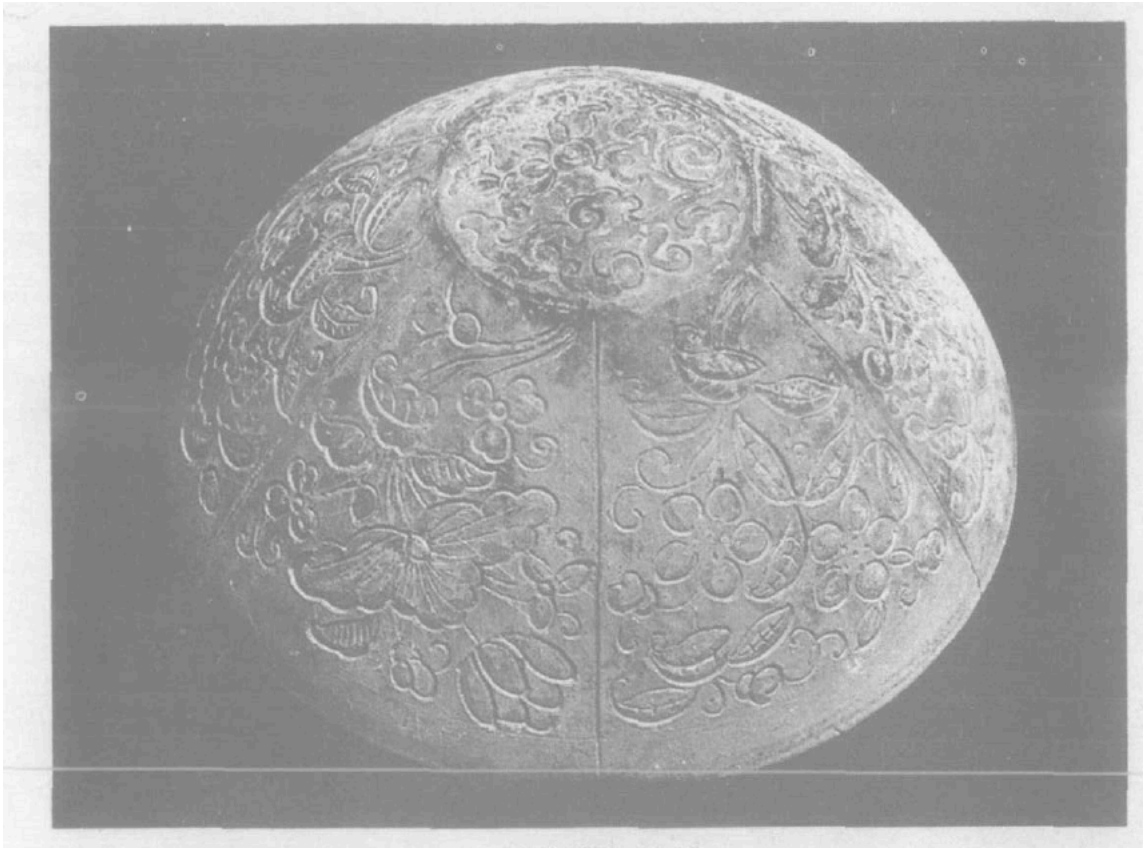


Figure 20. Mould for Ding ware, in “Hebei Quyangzhen Dingyao yizhi fajue jianbao,” *Wenwu*, no. 1 (2021): 27–45, https://doi.org/10.13619/j.cnki.cn11-1532/k.2021.01.002, p. 39.

Figure 21. Stoneware with celadon glaze, 11th – 12th century, Ru ware, H. 3.1 cm; base diameter 9.3 cm; mouth diameter 17 cm, Qingliangsi, Baofeng county, Henan province. The British Museum, London.

Figure 22. Dish with scalloped rim on display, 11th century, Ding ware, diameter 16.8 cm. The Metropolitan Museum of Art, New York. (Photo by Davin Luce)

Figure 23. Dish with lobed rim and incised lotus decoration in white glaze, Song period, H. 5.4 cm; base diameter 6.5 cm; mouth diameter 20.3 cm. National Palace Museum, Taipei.

Figure 24. Map of lacquerware excavation sites in Zhejiang and Jiangsu provinces, in Xu Caiyun,“Songdai Zhejiang qiqi yanjiu” (thesis, Zhejiang University, 2012), p. 26.

Figure 25. Bowl with lobed rim, Northern Song, wood and lacquer, H. 3.1 cm; mouth diameter 16.7 cm. Excavated from Shilipu, in Wuhan province. Hubei Provincial Museum, Wuhan.

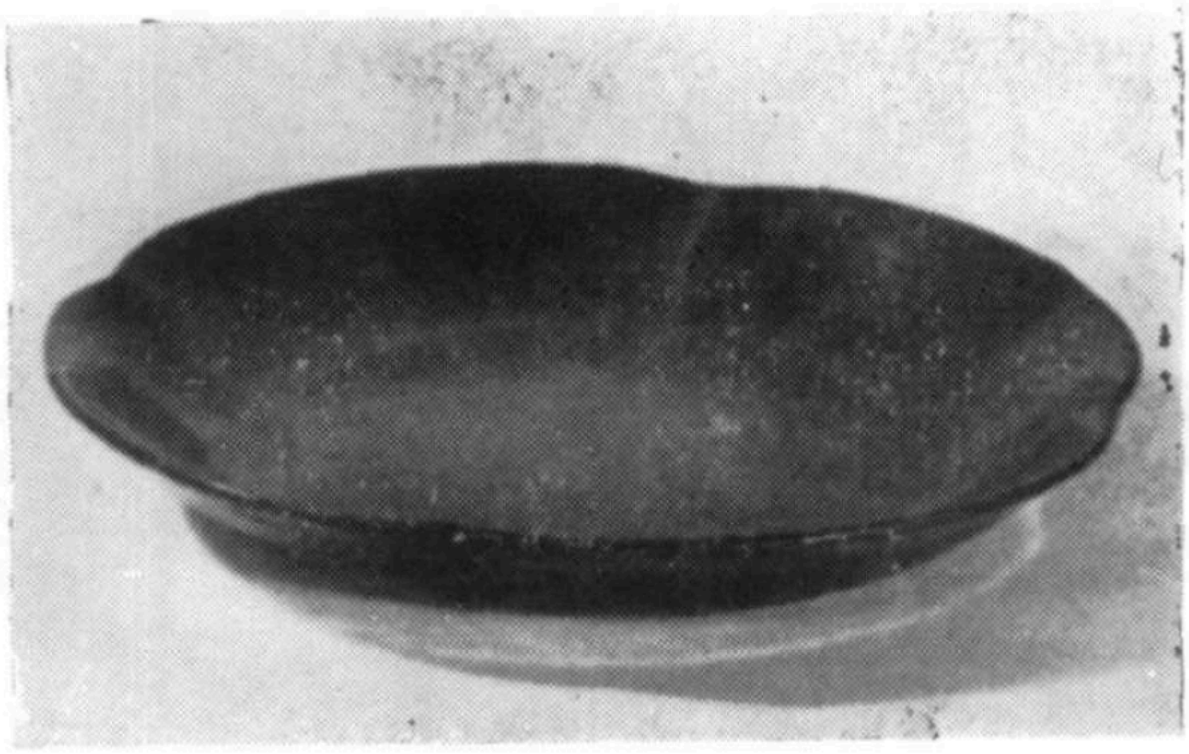
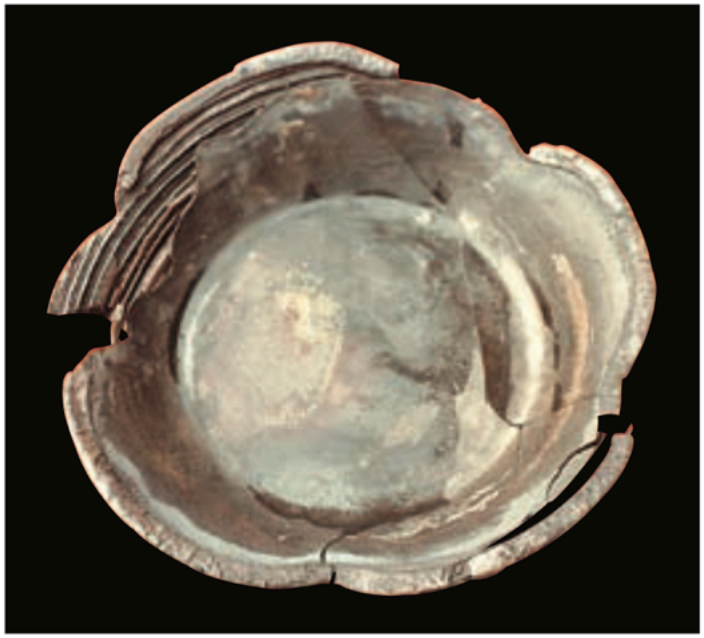


Figure 26. Lacquered plate, Tang period, wood and lacquer, in “Hubei Lijianxian chutu yipi tangdai qiqi,” *Wenwu*, no. 2 (1982): 93–94, p. 93.

圖一　五代　圈疊胎漆器製作標本　附模擬製作圖
常州市博物館藏



圖二　五代　曲口五瓣梅花形漆碗　常州市博物館藏

Figure 27. Damaged five-lobed lacquer plate, Five Dynasties, wood and lacquer, in Chen Jing, "Wudai shiguo qiqi qianshi," *National Palace Museum Research Quarterly*, no. 337 (2011): 99–107, 100.

Figure 28. Lobed plate with standing base, Northern Song, wood and lacquer, H. 3.7 cm, mouth diameter 16.5 cm. Nanjing Museum, Nanjing.

Figure 29. Lobed plate, end of Northern Song, wood and lacquer, H. 3.3 cm; bottom diameter 6.5 cm; mouth diameter 12.5 cm. Suzhou Museum, Suzhou. (Photo by author)

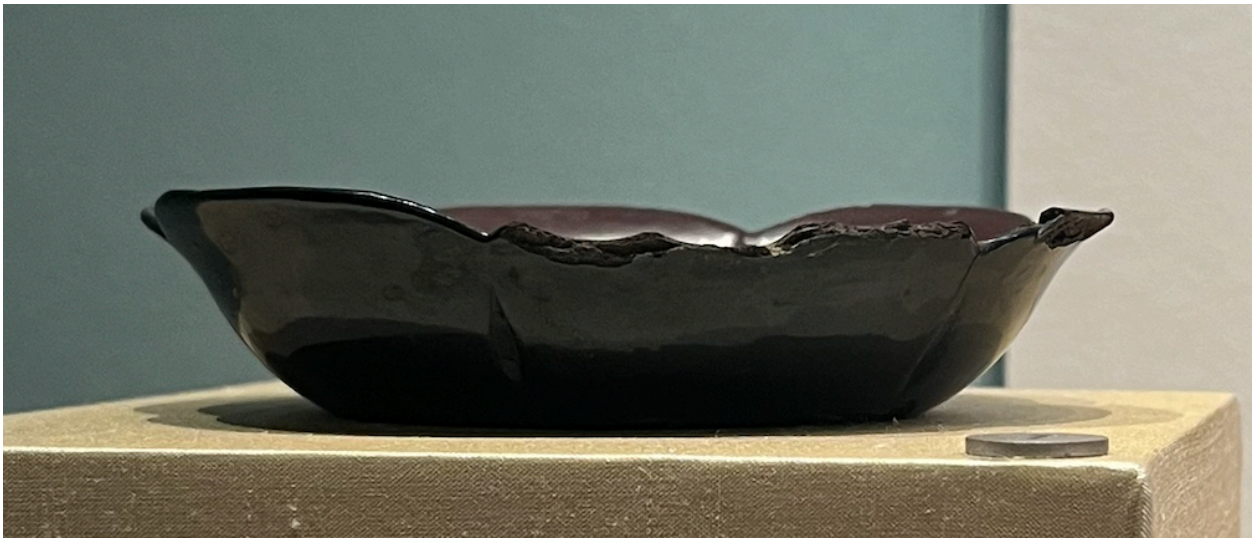


Figure 30. Side view of the lobed plate, end of Northern Song, wood and lacquer, H. 3.3 cm; bottom diameter 6.5 cm; mouth diameter 12.5 cm. Suzhou Museum, Suzhou. (Photo by author)

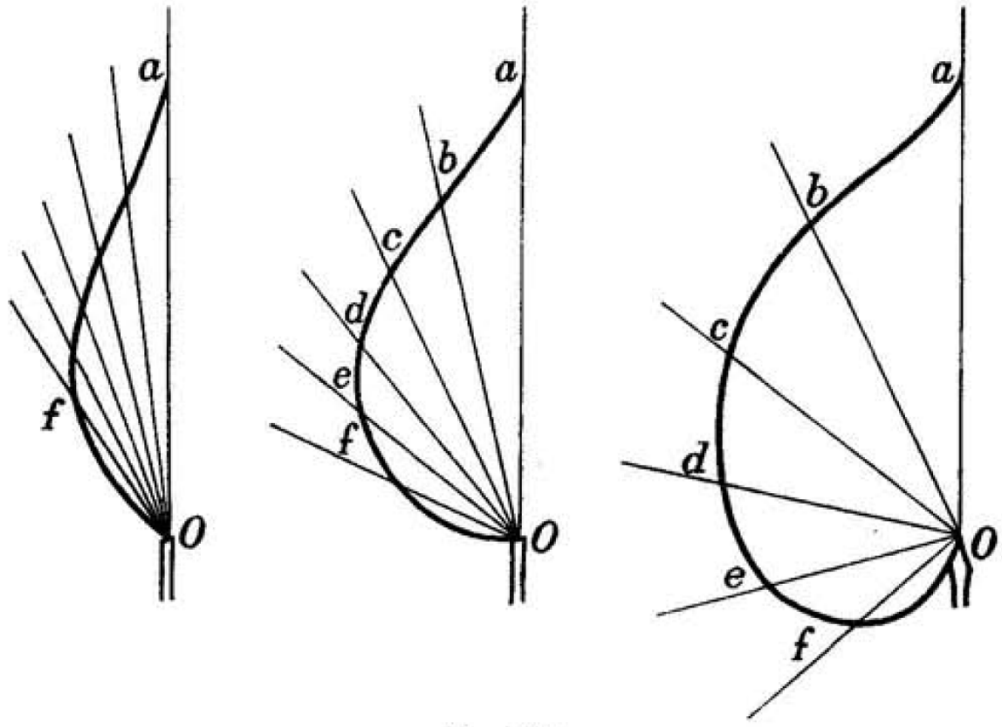


Figure 31. Leaf forms of increasing radii: lanceolate, the ovate, and the cordiform leaf (left to right), in D'Arcy Wentworth Thompson, *On Growth and Form* (Cambridge: Cambridge Univ. Press, 1952), 278.

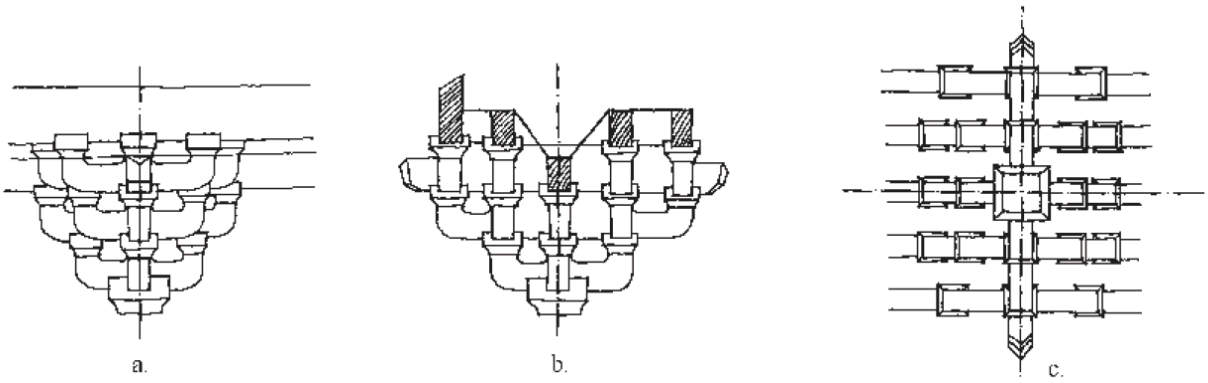


Figure 32. Sketch of the making of a flower-shaped bracket set: (a) front; (b) side view; (c) from below (author sketch), in Jiren Feng, *Chinese Architecture and Metaphor: Song Culture in the Yingzao Fashi Building Manual* (Honolulu: University of Hawai‘i Press, 2012), 146.

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