

# *Hierarchical, Ethnic, and Provenance Features of Western Zhou Period Proto-Porcelain in Northern China: New Evidence of a Redistribution System During the Western Zhou Dynasty*



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## ABSTRACT

Proto-porcelain from the Western Zhou Dynasty was considered highly valuable at the time and possibly originated in southern China. However, detailed information about proto-porcelain—the status and ethnic background of its owners, its inclusion in sets of objects, its regional and chronological features, and, most importantly, its provenance—is still unclear today. This article examines these aspects by conducting a comprehensive archaeological context analysis and comparison study. During the Western Zhou Dynasty, proto-porcelain was frequently used by Shang people, while among the Zhou people, only members of the central court and residents of a few important regional states with the surname Ji used proto-porcelain. With few exceptions, proto-porcelain objects were mostly owned by high-status groups. From the central court to regional states, proto-porcelain burial assemblages and typology were uniform. Considering the radial distribution pattern from the central court to peripheral areas, a redistribution system might have existed. A typological comparison suggests that most proto-porcelain found in the north came from the Qiantangjiang valley in Zhejiang Province. The proto-porcelain might have been custom ordered by the central court and then redistributed to different regional states in certain sets. This redistribution system was also applied to high-quality bronze vessels, the pattern of which reveals the central court's political strategy. **KEYWORDS:** Western Zhou Dynasty, proto-porcelain, archaeological context, provenance study, redistribution system.

## INTRODUCTION

Proto-porcelain is a unique ceramic that has drawn scholarly attention. Considered valuable, proto-porcelain objects were particularly popular during China's Bronze Age (ca. 2070–220 B.C.E.). Although a generally accepted definition of Chinese proto-porcelain has yet to be proposed, most scholars agree that proto-porcelain is most similar to stoneware from a technical standpoint. The main difference is that proto-porcelain is glazed, while stoneware is not (Liu 2003; Rice 2015). “Stoneware” is a

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Western term, however; Chinese scholars usually consider proto-porcelain to be the predecessor to porcelain and usually place it in the porcelain category. Compared to porcelain, the body of proto-porcelain is only partially vitrified and glazed, shows poor translucency, and has a lower hardness level, all of which characteristics largely result from lower firing temperatures and impure materials. The firing temperature of proto-porcelain is usually less than 1200 °C, while the firing temperature for porcelain is usually higher. Moreover, at least some proto-porcelain was made of China stone (mainly composed of sericite and quartz) rather than the kaolin clay used in the production of porcelain (Zhou et al. 2016).

Compared to pottery, one common feature of proto-porcelain is the clear ringing sound it makes when knocked by a hard object. The ringing sound and its hard texture allow archaeologists to easily identify proto-porcelain in excavation. The relatively low porosity of Bronze Age proto-porcelain allowed it to serve better to contain liquids than lower-fired ceramics. Moreover, the material's glazed body offered a unique aesthetic feature. These factors might have led to the popularity of proto-porcelain during the Bronze Age.

So far, the 20 proto-porcelain sherds unearthed from the Dongxiafeng site in Shanxi Province are the earliest proto-porcelains to have been excavated in northern China. Based on <sup>14</sup>C dating, they were made around 2000 B.C.E. (Huang 1984; IA CASS 1983). Proto-porcelain sherds dating to a later period (eighteenth to sixteenth centuries B.C.E.) were also discovered at the Erlitou site (Lu et al. 2012). The political entity associated with the Erlitou culture was the most powerful polity of the Central Plains during that period; however, proto-porcelain was still in its early stages of development (Lu et al. 2012). During the Shang period (1600–1046 B.C.E.), by which point the custom of including proto-porcelain objects in burials had been established, the quantity and variety of proto-porcelain vessels increased. Many proto-porcelain burial objects, along with bronze objects, have been unearthed from some high-status burials in Zhengzhou Shang City and Panlong City. Proto-porcelain became more popular in the Late Shang Period, reached its prime during the Western Zhou Dynasty (1046–771 B.C.E.), then nearly vanished during the Eastern Zhou Dynasty (770–256 B.C.E.) (Li 2018).

No written records concerning proto-porcelain have been found, so these objects can only be studied from an archaeological perspective. Previous studies of proto-porcelain have focused on provenance, the origin of the proto-porcelain technology (Feng 1973; Guo 1959), or pure typological analyses (Yang 2000; Zheng 2012). Most of the research on proto-porcelain in northern China, where such objects are thought to have been considered prestige goods, has centered on provenance due to the limited number of proto-porcelain artifacts excavated there. Moreover, no kiln sites for proto-porcelain production have been found in northern China. Conversely, proto-porcelain kilns and artifacts are common in southern China (Yuba 2001). Therefore, many scholars have assumed that proto-porcelain was not locally produced and may have been brought to northern China from the south (Luo et al. 1996; Zhou et al. 1960). Other scholars have proposed various provenances, such as local porcelain production in the Central Plains (An 1960; Li and Peng 1975).

Many researchers have conducted scientific analyses, including chemical composition and microscopic identification, to determine the provenance of proto-porcelain. Most chemical composition studies compare proto-porcelain artifacts from different locations or compare proto-porcelain with stoneware and pottery. Few

have included comparisons of the clays or other sources of material from the landscape, however. There are only a few microscopic identification studies, and these only compare proto-porcelain from different locations. These scientific studies have reached varying conclusions. For example, [Zhou and colleagues \(1960\)](#) compared the chemical compositions of proto-porcelain artifacts from a northern and a southern site dating to the Western Zhou period and claimed the northern proto-porcelain came from southern China. Chen Tiemei and colleagues have also argued that the Shang period proto-porcelain was produced in the south ([Chen et al. 1997](#); [Chen et al. 2003](#)), while the chemical analysis conducted by [Zhu and colleagues \(2004\)](#) suggested multiple production centres in both the north and south.

Despite these different opinions, all provenance research has shared two common problems. First, it has not been systematic, meaning that data were collected from only a few locations and some of the data were poorly analysed. Second, evidence of change in types of proto-porcelain over time and space has largely been neglected. Because of these two problems, proto-porcelain data in previous provenance studies were incomplete and uneven, which has resulted in unreliable conclusions. Moreover, the primary focus on provenance has left other basic questions concerning proto-porcelain unanswered. To fill the gap in previous studies, the current research aims to systematically analyse all published data on proto-porcelain in order to address basic questions besides provenance, including the social status and ethnicity of the people in burials associated with proto-porcelain and the use patterns and chronological and regional features of such vessels.

#### DATA AND METHODOLOGY

All published Western Zhou Period proto-porcelain data from northern China have been included in the analyses in this article ([Fig. 1](#)). A systematic study of proto-porcelain from earlier periods has also been published, but is not included in this article ([Li and Geng 2017](#)). All discussion from this point on is about Western Zhou proto-porcelain. The data in this study were collected from 32 locations, including residential sites, individual burials, and cemeteries such as Luoyang Beiyao, which contains 79 burials. Proto-porcelain has been unearthed in northern China from the present-day provinces of Shaanxi, Henan, Shanxi, Shandong, Beijing, Hebei, and Gansu, with the largest amounts recovered from Henan and Shaanxi ([Fig. 1](#)). Some of the locations lack detailed information about the number and type of proto-porcelain vessels and specific burial contexts, so they have been excluded from the following analysis. The specific sites discussed in this article are presented in [Table 1](#).

It is difficult to identify the vessel types from proto-porcelain sherds, so this study only analyses the complete or nearly complete vessels in published data. As most graves found with proto-porcelain were looted, it is difficult to determine the original and exact number of proto-porcelain vessels. Nevertheless, according to my accumulated published data, over 500 examples of complete or nearly complete Western Zhou proto-porcelain objects have been excavated from northern China. Proto-porcelain vessels were generally less likely to be looted than bronze vessels since pottery and Bronze Age proto-porcelains were not usually prized by looters. As discussed below, I also found that certain sets and patterns of proto-porcelain existed in different parts of northern China. Therefore, it is likely that most of the proto-porcelains excavated from graves were not heavily disturbed.

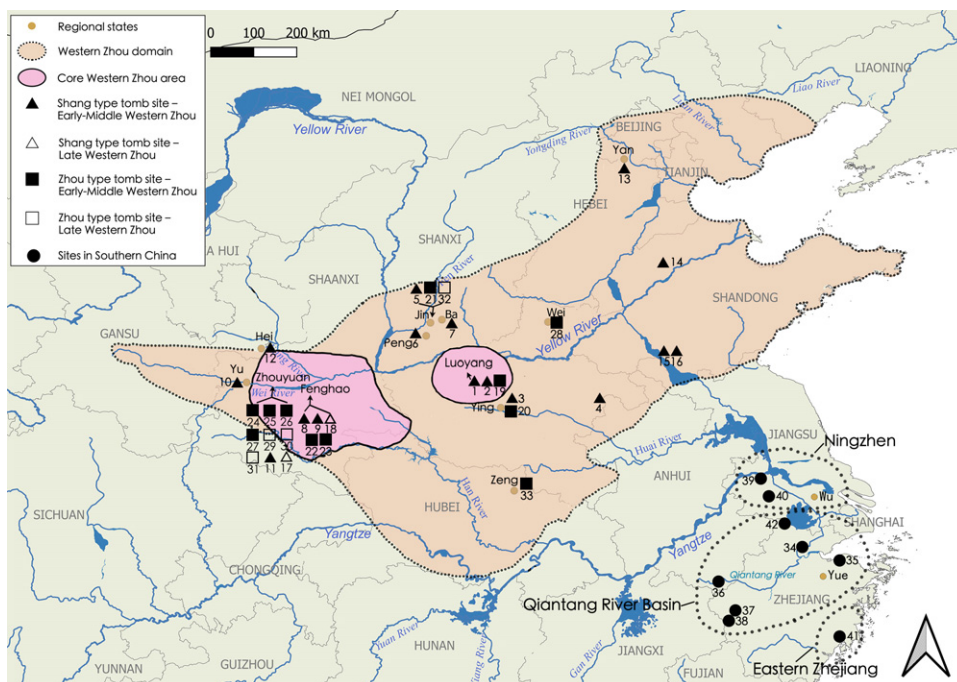


Fig. 1. Distribution of Western Zhou Dynasty sites containing Shang or Zhou type proto-porcelain in core Western Zhou, regional states, and southern areas: (1) Luoyang Linxiao; (2) Luoyang Station; (3) Xiang County; (4) Luyi Zhangzikou; (5) Jin Tianma-Qucun; (6) Peng Hengshui; (7) Ba Dahekou; (8) Chang'an Puducun; (9) Zhangjiapo (Early-Middle Western Zhou, Shang type burials); (10) Yu Baoji; (11) Yaojia; (12) Lingtai Baicao; (13) Yan Liulihe; (14) Jiyang Liutaizi; (15) Tengxian Zhuanglixi; (16) Tengzhou Qianzhangda; (17) Huangdui Laopuzi (92FHM25); (18) Zhangjiapo (Late Western Zhou, Shang type burials); (19) Luoyang Beiyao; (20) Ying Pingdingshan; (21) Jinhou (M13, M113); (22) Fengxi; (23) Zhangjiapo (Early-Middle Western Zhou, Zhou type burials); (24) Qishan Hejia; (25) Fufeng Yangjiapu; (26) Zhuangli; (27) Yangping Gaomiaocun; (28) Xincun; (29) Qishan Fenchu (Group A Ancestral Temple); (30) Fufeng Shaochen; (31) Huangdui Laopuzi (95FHM32, M55); (32) Jinhou (M33, M63); (33) Yejiashan; (34) Deqing Ducang Mountain; (35) Xiaoshan Chailing Mountain; (36) Tunxi; (37) Quzhou; (38) Jiangshan; (39) Dantu; (40) Jintan; (41) Huangyan; (42) Changxing Bianshan; (43) Lutaishan; (44) Gaoshaji; (45) Jurong (Map created by Yiu-Kang Hsu).

Almost all proto-porcelain that has been discovered to date represent vessels used for containing food, wine, or water. The Dou, tall Lei or Zun, short Zun, and Guan are the most popular vessel types in northern China, but limited examples of other objects such as lids, Gui-type vessels, and Yi-type vessels are also seen (Fig. 2, Fig. 3). Most proto-porcelain has been unearthed from high-status burials and is often found with other artifacts such as bronzes, lacquer, and pottery. In addition, preliminary examination of the published data clearly suggests that the total number, type, and even burial context of proto-porcelain differ between the Early to Middle Western Zhou and Late Western Zhou periods. Therefore, I suggest discussion dividing the Western Zhou into two phases.

This article presents the first systematic study to consider not only provenance of proto-porcelain but also its circulation and socio-political associations in northern

TABLE 1. SITES WITH WESTERN ZHOU PERIOD PROTO-PORCELAIN IN NORTHERN CHINA

NO. <sup>a</sup>	STATE	SITE	REFERENCES
Shaanxi Province			
10	Yu	Baoji	Lu and Hu 1988
9, 18, 23	Western Zhou core	Zhangjiapo	IA CASS 1999
8	Western Zhou core	Chang'an Puducun	Shaanxi 1957
17, 31	Western Zhou core	Huangdui Laopuzi	Luo 1994; Zhouyuan Museum 2005
22	Western Zhou core	Fengxi	Fengxi 1981, 1986; Fenghao 2000
24	Western Zhou core	Qishan Hejia	Shaanxi & Shaanxi 1976
25	Western Zhou core	Fufeng Yangjiapu	Luo 1980
26	Western Zhou core	Zhuangli	Zhouyuan 2004
27	Western Zhou core	Yangping Gaomiaocun	Baoji & Baoji 1996
29	Western Zhou core	Qishan Fengchu	Zhouyuan 1979
30	Western Zhou core	Fufeng Shaochen	Zhouyuan 1981
Henan Province			
1	Western Zhou core	Luoyang Linxiao	Luoyang 1999b
2	Western Zhou core	Luoyang Station	Second Squad 1956
3	?	Xiang County	Henan Provincial Museum 1977
4	Chang family	Luyi Zhangzikou	Henan & Zhoukou 2000
19	Western Zhou core	Luoyang Beiyao	Luoyang 1999a
20	Ying	Pingdingshan	Henan & Pingdingshan 2012
28	Wei	Xincun	IA CASS 1964
Shanxi Province			
5	Jin	Tianma-Qucun	Shang & Shanxi 2000
6	Peng	Hengshui	Shanxi et al. 2006
7	Ba	Dahekou	Dahekou 2011
21, 32	Jin	Jinhou	Department of Archaeology & Shanxi 1994, 1995; School of Archaeology & Shanxi 2001
Shandong Province			
14	?	Jiyang Liutaizi	Cultural Relics & Jiyang 1985; Shandong 1996
15	?	Tengxian Zhuanglixu	Teng 1984
16	Shi family	Tengzhou Qianzhangda	IA CASS 2005
Beijing City			
13	Yan	Liulihe	Beijing Institute 1995; Beijing Institute & Department Archaeology 1996
Gansu Province			
12	Hei	Lingtai Baicaoopo	Gansu 1977

<sup>a</sup> Site locator no. in Figure 1 map.

China. Although proto-porcelain artifacts were in high demand during the early dynastic periods, a detailed study of their characteristics such as use patterns and owners' identities has not been conducted. Changing temporal and spatial patterns in proto-porcelain types have also been neglected. More importantly, how proto-porcelain circulated and the possible connection between its circulation and political

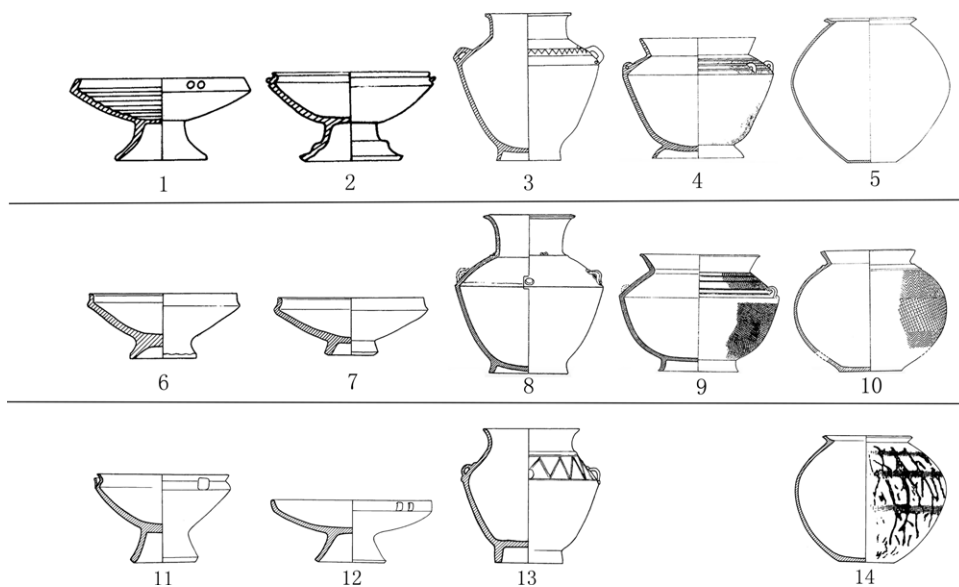


Fig. 2. Comparison of different types of proto-porcelain objects from Luoyang Beiyao M215 (1–5), Ying Pingdingshan M232 (6–10), Qianzhangda BM3 (11–14): (1) Dou (no. 36); (2) Dou (no. 38); (3) tall Lei (no. 47); (4) short Zun (no. 42); (5) Guan (no. 69); (6) Dou (no. 068); (7) Dou (no. 069); (8) tall Lei (no. 063); (9) short Zun (no. 062); (10) Guan (no. 0105); (11) Dou (no. 37); (12) Dou (no. 43); (13) Tall Zun (no. 3); (14) Guan (no. 7).

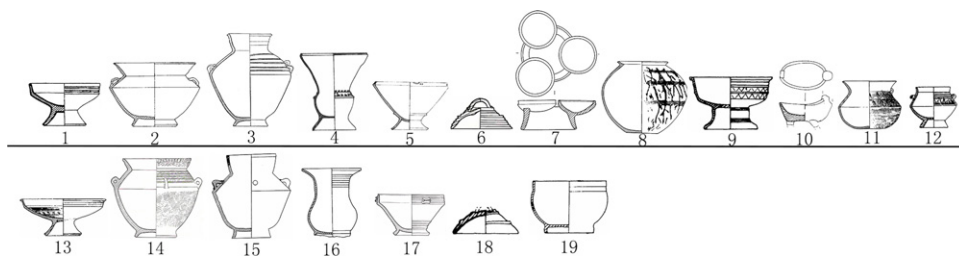


Fig. 3. Comparison of proto-porcelain objects from Early-Middle (1–12) and Late (13–19) Western Zhou Dynasty: (1) Dou (Qianzhangda BM119:4); (2) Zun (Luoyang Beiyao M442:1–1); (3) Lei (Liulihe M52:1); (4) goblet-type Zun (Luoyang Linxiao C3M230:1); (5) Gui (Luoyang Beiyao M250:5–1); (6) vessel lid (Luoyang Beiyao M221:1–1); (7) one-piece Dou (Ying Pingdingshan M232:074); (8) Guan (Qianzhangda BM3:7); (9) Lei (Ying Pingdingshan M232:064); (10) Yi (Luoyang Beiyao M668:2); (11) kettle-type Zun (Qianzhangda M109:12); (12) Bu (Qianzhangda M203:1); (13) Dou (Jinhou M33:152); (14) Zun (Zhangjiapo M129:02); (15) Lei (Ying Pingdingshan M232:064); (16) goblet-type Zun (Luoyang Beiyao M403:1–3); (17) Gui (Xincun); (18) vessel lid (Zhangjiapo M32:04); (19) bowl (Shaochen FCT101[3A]:7).

strategy need to be explored. Without such intentional investigation, our current understanding of this artifact type would be oversimplified. Since these basic features of proto-porcelain are largely unclear, current scholarly understanding of Bronze Age ritual systems, the circulation of rare resources, and the production of valuable objects is likely incomplete as well.

To fill these research gaps, this study comprehensively examines proto-porcelain of the Western Zhou Dynasty. I have previously conducted systematic research on the proto-porcelain of the Shang period in northern China and found that the types of proto-porcelain vessels and their burial contexts had changed over time. That is, as the type of vessel changed from Zun (wine containers) to Guan (water containers) and others, the burial context also changed from elite burials to residential sites. The sources of Shang period proto-porcelain artifacts also shifted from the middle to the lower reaches of the Yangtze River; this was probably caused by changes in the Shang Dynasty's southern political affiliations and control of its southern peripheries (Li 2018; Li and Geng 2017). However, as the previous study of the Shang period proto-porcelain only included a basic typological analysis of proto-porcelain in the Western Zhou period, many basic questions remained unanswered, which led to this article. Unlike my earlier analysis of Shang Period proto-porcelain, this article has distinct objectives and methodology.

First, this study investigates the owners, use patterns, and chronological features of Western Zhou proto-porcelain in northern China to fully understand these artifacts. Second, these characteristics are compared with those of proto-porcelain from southern China to explore the former's provenance. Moreover, this study tries to connect these data with Western Zhou resource circulation networks and relationships with peripheral populations, among other important issues. This analysis helps form a more complete understanding of these valuable items during the Western Zhou Dynasty.

#### SOCIAL STANDING AND ETHNICITY OF PROTO-PORCELAIN OWNERS IN NORTHERN CHINA

Proto-porcelain is usually perceived as representing its owner's elite social class because it is often unearthed from high-status burials. Bronze inscriptions and artifacts found in their burials demonstrate that the Western Zhou's upper class was part of a clear hierarchy (Liu 2014). However, no scholars have systematically classified burials where proto-porcelains have been unearthed according to the social standing of their occupants nor have they studied to which socio-political class the proto-porcelains' owners corresponded. The Shang Dynasty's ruling family had the family surname Zi, while the family named Ji ruled the Western Zhou Dynasty. The Ji designated their own family members and people with other surnames as local rulers of regional states. In the Early Western Zhou period, Shang people with the Zi surname, Zhou people with the Ji surname (and other surnames), and scattered aboriginal people were all part of the Western Zhou population. It is therefore important to determine to which ethnic group (s) proto-porcelain owners belonged. The answer might help us understand the various roles distinct groups played in Western Zhou society and the political strategy employed by the central court to deal with different peoples. Most proto-porcelain artifacts from this dynasty have been unearthed from burials that vary in scale and burial customs according to social status and ethnic group. Therefore, burial analysis can be used to discuss the social standing and ethnicity of proto-porcelain owners.

#### *Social Standing*

Western Zhou burials differ by size, assemblage and quantity of bronze artifacts, and number of chariot sacrifice pits. For example, there are many instances in ancient

literature of people of different status being linked to different sets and quantities of bronze objects. For example, the “Commentary of Gongyang: The Second Year of Duke Huan” records that “the emperor uses nine Dings [ancient cooking vessel], dukes seven, ministers five, and officials three” (Liu 2010:56). Although the hierarchical systems recorded in such ancient texts resemble those of the Eastern Zhou Dynasty, it is clear that the Western Zhou had also established a hierarchical system for allocating bronzes to different tiers of the elite (Yu and Gao 1978). According to bronze inscriptions and ancient texts, the hierarchy of the Western Zhou Dynasty included five elite ranks below the king: Gong (Duke), Hou (Marquise), Bo (Earl), Zi (Viscount), and Nan (Baron). Because burials where proto-porcelain has since been unearthed were common targets for robbery, I recognise that the bronze objects found in these burials likely only partially represent the original assemblages and quantities. Therefore, bronze and other burial objects are only considered reference points in the current research.

Although burial size varies by region, in general, burials of different statuses show relatively large variations in terms of size. Typically, the larger the burial size, the larger the grave assemblage and, therefore, the higher the person’s status. After a comprehensive evaluation of burials at different sites, I defined small, medium, and large burials as having a length of less than 3 m, between 3 m and 5 m, and over 5 m, respectively. This division was from previous studies on Western Zhou burials and is applicable to most Western Zhou cemeteries (IA CASS 2004). Based on this standard, I categorised Western Zhou burials in northern China where proto-porcelain has been unearthed as follows: 28 percent are large burials, 68 percent are medium-sized burials, and 4 percent are small burials. Inscriptions on bronze objects unearthed from some of the burials stated the rank of the burial owners. One duke, seven marquises, and four earls were identified, but the status of the other burial owners remains unknown (Table 2).

In addition to burials, proto-porcelain has been unearthed from two residential sites excavated in 1976: Qishan Fengchu Group A Ancestral Temple (Zhouyuan 1979) and Fufeng Shaochen Western Zhou (Zhouyuan 1981). Located at the core of the Western Zhou area, these residential sites are characterised by their large scale and functioned as palaces and ancestral temples. Therefore, they represent individuals of the highest social status. The data from these two sites are not used in this study’s quantitative analysis, however.

Proto-porcelain has mainly been unearthed from large and medium burials corresponding to dukes, marquises, and earls (Table 2). The higher the status of the burial, the more types and higher number of proto-porcelain vessels were found. Proto-porcelain has also been unearthed from a few small burials belonging to low-status nobility (indicated by the other burial goods found there, including bronzes).

This study conducted a statistical analysis of the percentage of burials found with proto-porcelain in the cemeteries. The scale of the excavation conducted could substantially affect the results if only a part of the cemetery was excavated. To make the analysis as reliable as possible, only cemeteries that underwent large-scale excavation were included in this part of the analysis. Table 3 lists the eight cemeteries that were analysed. The Zhangjiapo (Fig. 1, nos. 9, 18, 23) and Luoyang Beiyao (Fig. 1, no. 19) cemeteries are both located at the core of the Western Zhou area, in other words, the Zhou royal house area, which included two capitals: Fenghao (present-day Xi’an) and

TABLE 2. ETHNIC FEATURES, SOCIAL RANK, AND PROTO-PORCELAIN ASSEMBLAGES UNEARTHED FROM WESTERN ZHOU PERIOD TOMBS

SHANG TYPE TOMBS							ZHOU TYPE TOMBS			
SITE (TOMB UNIT)	SHANG BURIAL CUSTOMS			NUMBER, SIZE OF TOMB	RANK	PROTO- PORCELAIN ASSEMBLAGE	SITE (TOMB UNIT)	NUMBER, SIZE OF TOMB	RANK	PROTO-PORCELAIN ASSEMBLAGE
	WAIST PIT	DOG	HUMAN							
Early–Middle Western Zhou Period										
Xiang County	✓	✓		1 Small	Low nobility	1 Lei	Fengxi Dayuancun (M304, M315)	1 Medium	High nobility	Multiple Dou
Tianma - Qucun (M6080)			✓	1 Medium	Earl	1 Dou	Ying Pingdingshan	3 Large, 1 Medium	1 Duke, 3 Marquis	Mostly Dou, Lei
Luyi Zhangzikou	✓	✓	✓	1 Large	High nobility	10 Dou, 1 Zun, 1 Guan	Qishan Hejia (M6)	1 Small	Low nobility	1 Dou
Dahekou (M1)	✓	?		1 Medium	Earl	6 Dou, 5 Lei, 1 Zun	Zhuangli (M9)	1 Medium	High nobility	2 Dou
Chang'an Puducun	✓	✓	✓	1 Medium	High nobility	4 Dou	Yangping Gaomiaocun (GM1)	1 Medium	High nobility	2 Dou
Rujiazhuang (BRM1 Room B)	✓	✓	✓	1 Large	Earl	2 Dou, 1 Guan	Zhangjiapo	3 Large, 12 Medium	High nobility	Mostly Dou
Lingtai Baicaoopo (M2)	✓	✓		1 Medium	Earl	1 Dou, 1 Guan	Luoyang Beiyao	18 Large, 52 Medium, 2 Small	Mostly high nobility	Mostly Dou, Lei
Liulihe (F15M2, M52)	✓	✓	✓	2 Medium	High nobility	5 Dou, 1 Lei	Jinhou (M13, M33, M113, M114 <sup>d</sup> )	4 Large	Marquis	Mostly Dou <sup>d</sup>
Qianzhangda	✓	✓		2 Large, 3 Medium	High nobility	Mostly Dou, Lei				

(Continued)

TABLE 2. (Continued)

SHANG TYPE TOMBS							ZHOU TYPE TOMBS			
SITE (TOMB UNIT)	SHANG BURIAL CUSTOMS			NUMBER, SIZE OF TOMB	RANK	PROTO- PORCELAIN ASSEMBLAGE	SITE (TOMB UNIT)	NUMBER, SIZE OF TOMB	RANK	PROTO-PORCELAIN ASSEMBLAGE
	WAIST PIT	DOG	HUMAN							
Jiyang Liutaizi (M3)	✓	✓		1 Medium	Low nobility	2 Dou				
Tengxian Zhuanglixu	✓	✓		1 Medium	Marquis	1 Lei				
Luoyang Station	✓	✓		1 Small	Low? nobility	2 Dou				
							Late Western Zhou Period			
Zhangjiapo (M176)	✓	✓		1 Medium	High nobility	1 Dou	Zhangjiapo	4 Medium	High nobility	Mostly Dou
Huangdui Laopuzi (92FHM25)	✓	✓		1 Large	High nobility	8 Dou, 2 Lei, 1 Gui	Huangdui Laopuzi (95FHM32, 95FHM55)	1 Medium	High nobility	Multiple Lei, Dou
							Luoyang Beiyao	2 Large, 5 Medium	High nobility	Mostly Dou
							Jinhou (M63)	1 Large	Marquis	Unclear

<sup>a</sup>Jin Marquis M114 is the only Zhou type burial including immolated dog and human remains.

TABLE 3. TOMB ASSEMBLAGES WITH PROTO-PORCELAIN AND BRONZE VESSELS OR MUSICAL INSTRUMENTS FROM WESTERN ZHOU SITES IN NORTHERN CHINA

STATE	WESTERN ZHOU	WESTERN ZHOU	YING	JIN	JIN	BA	YU	YAN
	CORE	CORE						
Cemetery	Luoyang Beiyao	Zhangjiapo	Pingdingshan	Jinhou	Tianma- Qucun	Dahekou	Baoji	Liulihe
Total tombs	348	390	23	19	641	579	27	61
Number of tombs with proto-porcelain (percentage)	79 (22.7%)	21 (5.4%)	4 (17.4%)	5 (26.3%)	1 (0.2%)	1 (0.2%)	2 (7.4%)	3 (4.9%)
Number of bronzes per tomb with proto-porcelain	Percentage of tombs with proto-porcelain containing specified number of bronzes							
0	87.3%	61.9%	0	0	0	0	0	66.7%
1–2	7.6%	23.8%	25%	0	0	0	0	0
3–5	3.8%	9.5%	25%	0	100%	0	0	0
6–10	1.3%	0	50%	40%	0	0	0	33.3%
11–20	0	4.8%	0	40%	0	0	50%	0
>20	0	0	0	20%	0	100%	50%	0

Chengzhou (present-day Luoyang). The other six cemeteries are associated with five regional states (Ying, Jin, Yu, Ba, Yan). The six regional state cemeteries can be classified into two types. The Ying Pingdingshan (Fig. 1, no. 20), Jin Tianma-Qucun (Fig. 1, nos. 21 and 32), and Yu Baoji (Fig. 1, no. 10) cemeteries all contain burials of the highest elite personages of the states, mostly lords and their wives. The number of such high status regional burials is small and burials containing proto-porcelain account for between 7.4 and 26.3 percent of the total. By contrast, the Jin Tianma-Qucun (Fig. 1, no. 5), Ba Dahekou (Fig. 1, no. 7), and Yan Liulihe (Fig. 1, no. 13) cemeteries include burials of both high- and low-status elites and even commoners, so the total number of burials is much larger. However, lower status burials containing proto-porcelain are extremely rare, only 0.2 percent in both the Tianma-Qucun and Dahekou cemeteries. The percentage is higher for the Liulihe cemetery (probably because only a small number of burials were excavated at that cemetery). The difference in percentages of proto-porcelain found in the high-status and low-status cemeteries shows that proto-porcelain was used almost exclusively by the highest ranking people in the regional states.

The situation in the core area is different. The Zhangjiapo cemetery is believed to have belonged to an important elite family group named Jingshu; family members of all status levels were buried in this cemetery (IA CASS 1999). Of the 390 excavated burials, 21 (5.4%) were found with proto-porcelain (Table 3). In the Luoyang Beiyao cemetery, also located in the core Western Zhou area, most of the 348 burials are large or medium-sized (i.e., only 12 small burials). The owners of these burials came from

varied backgrounds. Over 10 people were identified based on bronze inscriptions, most of whom were high-ranking officers of the Western Zhou Dynasty (Luoyang 1999a). In Beiyao cemetery, 22.7 percent of the burials included proto-porcelain. It is thus clear that, compared to the regional states, proto-porcelain in the core areas was used more widely across the social classes and was less restricted to high-status burials.

I also tried to determine if there were any associations between proto-porcelain and other markers of elite status such as bronze vessels and musical instruments. However, the data is limited because of burial robberies; few undisturbed burials with complete burial sets have been found. The bronzes are likely to have been removed by looters, which would affect any analysis of an association between bronzes and proto-porcelains. Nevertheless, the total number of bronze vessels and musical instruments left in looted graves is still directly associated with burial status. Therefore, only the total number rather than the sets or types of bronzes is discussed here. After analysing all the published data, I classified burials found with proto-porcelain into six types based on the number of bronze vessels and musical instruments found in the burial assemblage. Table 3 shows that burials in the regional states usually contained a large number of bronze vessels and musical instruments, while most of the burials in the core area were found with none. This is further evidence that proto-porcelain was used by more people and was less restricted by status in the core area of the Western Zhou Dynasty than in the regional states.

### *Ethnicity*

Previous research has recognised a strong association between certain burial customs and the ethnic identities of Zhou and Shang people (IA CASS 2003). Such associations were initially clarified based on the surnames found on funerary bronzes and other features. The existence of waist pits (small rectangular pits located at the centre of the floor of the burial, usually just below what would have been the waist of the interred corpse) and the immolation of dogs and people in such pits are generally accepted as standard Shang burial customs, with immolated dogs found in the pits being the most distinctive characteristic.

The burials of the Zhou people do not usually have waist pits, although dog and human remains have been found in several Zhou burials. For example, Jinhou M114 contains the remains of the marquis himself, one unidentified immolated human, and two immolated dogs (School of Archaeology and Shanxi 2001) (Table 3). Based on these considerations, I considered waist pits and immolated dogs and humans as the standard for distinguishing Shang from Zhou burials and then referred to bronze object inscriptions to verify the categorisation.

Regarding terminology, I use ‘Shang’ to refer not only to Shang people with the family name Zi, but to anyone who followed Shang burial customs in Western Zhou. All their burials are designated ‘Shang type’ burials. The burial features of Shang type burials were extremely common in the Late Shang period, and there is consensus that Shang type burials with these features are directly related to the Shang people (IA CASS 2003). However, ‘Shang’ category during the Western Zhou period is just a general idea. By the same token, I use ‘Zhou’ to refer not only to Zhou people with the Ji surname but to anyone who followed the same burial customs of the Zhou people; their burials are designated ‘Zhou type’ burials. Unlike the ‘Shang type’ burials, it is rare to see waist pit and immolated dogs and humans in the ‘Zhou type’ burials.

Although the number of burials with bronzes is small, in some cases, the classification of Shang and Zhou type burials can be supported by the inscriptions on the bronzes. For example, some of the Zhou type burials, including those in the Jin and Ying state cemeteries, were found with inscribed bronzes that indicate that their owners had Ji as their surname, while some of the Shang type burials such as Ba Dahekou M1 and Yu Baoji Rujiazhuang M1 were found with inscribed bronzes that indicate non-Ji identities.

Finally, I discuss representative burials that have relatively complete excavation information and evaluate their group properties based on two periods: Early-Middle Western Zhou and Late Western Zhou. According to the data analysed in this study, Early-Middle Western Zhou Dynasty Shang type burials containing proto-porcelain are widely distributed in 14 areas covering the core zone of the Zhou Dynasty and territories of regional states located in Shanxi, Gansu, Beijing, and Shandong provinces (Fig. 1, Table 2). By comparison, the distribution range of Early-Middle Period Zhou type burials where proto-porcelain has been unearthed is relatively small and only covers eight places, centering on the core area of the Western Zhou (within the current Shaanxi, Henan, and Shanxi provinces) and nearby regional states run by Ji families including the Ying (within the current Henan Province) and Jin (within the current Shanxi Province) states (Fig. 1, Table 2).

It was a tradition of the Shang people to bury the dead, especially nobility and other high-class individuals, with proto-porcelain objects. Excavation has shown that there was broader acceptance of proto-porcelain by the Shang people in the Early-Middle Western Zhou period, as indicated by the wide distribution of Shang burials containing proto-porcelain. This suggests that the association of proto-porcelain with the elite was retained from the former Shang Dynasty. Conversely, at the beginning of the Zhou Dynasty, people with the Ji surname only gradually began to accept the inclusion of proto-porcelain in burials. This phenomenon was limited to the central area of the Western Zhou and only a few kingdoms ruled by high-status Ji families. Thus, in the Early-Middle Western Zhou period, proto-porcelain objects were mainly used by Shang people and were not yet widely accepted by Zhou people.

In the Late Western Zhou period, there was an overall decline in the quantity and types of proto-porcelain (see discussion below) and the Shang type burials that had once widely included proto-porcelain almost completely disappeared. Proto-porcelain artifacts have been unearthed only from two Shang type burials from this period: Huangdui Laopuzi 92FHM25 (Fig. 1, no. 17) and Zhangjiapo M176 (Fig. 1, no. 18) (Table 2). The use of proto-porcelain among the Zhou people declined during the Late period as well. Outside of the dynasty's core area, proto-porcelain has only been excavated from the Jinhou cemetery (Fig. 1, Table 2). These findings suggest that proto-porcelain fell out of use by the Zhou people during the Late Western Zhou period; such artifacts were mainly used in the core area and in a few important regional states run by Ji families. To summarise, throughout the Western Zhou period, moving outward from the Zhou core area to the regional states where the Ji surname was dominant and then to the regional states where non-Ji surnames predominated, proto-porcelain became less commonly used and increasingly reserved for elite burials.

#### USE PATTERNS

Other scholars have determined that the use of bronze objects in the Western Zhou was enforced by a particular ritual system and that these objects often follow certain

rules when found in assemblages (Zhu 2009). For instance, there are strict rules about the number of Ding and Gui included in the grave assemblage according to status of the burial owner. This is also the case for proto-porcelain pieces. Thus, two aspects of the burial system can be discerned: (1) the relationship of proto-porcelain with other objects within an assemblage; and (2) the relationship of different types of proto-porcelains within an assemblage.

Based on the published data for excavated burials found with proto-porcelain, I determined possible associations among the different types of objects. The analysis shows that neither bronze vessels nor low-fired pottery can be correlated to different types of proto-porcelain vessels. Notably, lacquer objects have often been excavated from burials where proto-porcelain has also been unearthed. Proto-porcelain and lacquer objects have been found together in burials in the Dahekou, Liulihe, Zhangjiapo, and other cemeteries. However, no clear relationship between these assemblages can be determined because of the poor preservation of the lacquer objects (Beijing Institute 1995; Beijing Institute and Department Archaeology 1996; Dahekou 2011; IA CASS 1999).

In addition, Guan stoneware of similar types has been unearthed along with proto-porcelain from the Tianma-Qucun, Pingdingshan, and Qianzhangda cemeteries. Stoneware and proto-porcelain are considerably similar in terms of their production techniques and use of raw materials. Stoneware appeared widely across northern China during the Shang period; however, stoneware dating from the Western Zhou Period is rarely seen, making it much rarer than proto-porcelain in this period (Li 2018). The similarity of stoneware unearthed in different places and its fixed presence alongside proto-porcelain may imply that stoneware and proto-porcelain were closely related in terms of their provenance and circulation.

Although most assemblages are incomplete, there are a few complete or almost-complete cases; these reveal the presence of relatively fixed assemblages of different types of proto-porcelain. Thus, Dou, tall Lei or Zun, short Zun, and Guan constitute a relatively complete assemblage; this assemblage is seen in Luoyang Beiyao burial M215 and Ying Pingdingshan burial M232 (Fig. 2). Overall, the Dou type of proto-porcelain occurs most frequently in these assemblages and assemblages containing both Dou and tall Lei appear with the highest frequency.

In addition, assemblages containing Dou, tall Lei, and Guan and assemblages containing Dou and Guan account for a large proportion of the total assemblages. For example, the type of set that comprises Dou, Lei, and Guan is seen in the Luoyang Beiyao, Ying Pingdingshan, and Qianzhangda cemeteries (Fig. 2). Not only is there consistency (across burials and sites) in assemblage composition (i.e., association between different types of proto-porcelain vessels), there is also little variation among vessels of each type (i.e., the Dou from different burials and sites are very similar). Such a high level of consistency across burials and sites in assemblage composition and within vessel types strongly suggests that these proto-porcelain objects originated from the same place and were distributed as complete sets. These sets also indicate that clear rules had already been formed for the use of proto-porcelain in the Western Zhou and that assemblage features similar to those for bronze objects had already appeared. However, I could not determine what specific foods or liquids would have been contained in the different types of proto-porcelain vessels. Further, it was difficult to confirm whether proto-porcelain played a role in Western Zhou rituals. The etiquette and use of proto-porcelain in different contexts may have differed significantly from that of bronze objects.

## TEMPORAL AND SPATIAL PATTERNS

Most proto-porcelain comes from high-status burials where pottery and bronze were usually buried together. The presence of pottery and bronze offers the best method for dating the proto-porcelain since a validated chronology for the Western Zhou period, including its pottery and bronze, has been in use for a long time (IA CASS 2004). This chronological framework is widely accepted among Chinese archaeologists because it was created based on a large number of bronze inscriptions,  $^{14}\text{C}$  data, and typological studies.

For this study, the dates of proto-porcelain use were determined based on this chronological framework. After typological analysis, the types of proto-porcelain can be divided into two periods: Early-Middle Western Zhou (which I call the “flourishing” period) and Late Western Zhou (the “declining” period). Significant differences exist between these two periods in terms of both the quantity and types of proto-porcelain. Large quantities of varied types of proto-porcelain made in the Early-Middle Western Zhou period have been unearthed from both its core area and other kingdoms in various regions. Thus, this is referred to as the “flourishing period” with respect to the development of proto-porcelain. The main object types, including the Dou, Zun, Lei, Guan, Gui and Gui-type vessel, and vessel lid, date to the Early-Middle Western Zhou period. Other types have been excavated in extremely small quantities, include Yi-type vessel, Bu-type vessel, Yu, and dish, all concentrated in sites from the Early-Middle Western Zhou Period (Fig. 3).

In the Late Western Zhou Period, the variety and production of proto-porcelain decreased. Most Dou, Zun, and Lei types disappeared and the variation within each vessel type lessened. Only a couple of new object types emerged, including the short Lei and earless Gui (Fig. 3). Many other types, including the commonly seen Guan and much less common Yi-type vessel, almost completely disappeared during this period (Fig. 3).

In summary, proto-porcelain types underwent significant change throughout the history of the Western Zhou Dynasty. The quantity and types of proto-porcelain made in the Early-Middle Period far surpass those made in the Late period. On the other hand, although few new types of proto-porcelain emerged in the Late Western Zhou, most of these inherited some of the characteristics of the types made in the Early-Middle period.

Regarding the distribution characteristics of proto-porcelain from the Early-Middle Western Zhou Period, the proto-porcelain distributed in most regions of northern China shows uniformity in type. Only proto-porcelain in Shandong displays some unique regional features, with some objects not discovered in other regions. Further research is required to determine the provenance of proto-porcelain unearthed in Shandong.

Overall, proto-porcelain unearthed in the core area of the Western Zhou (namely Henan, Shanxi, and Shaanxi) is found in larger numbers and exhibits greater typological variation than that unearthed in peripheral areas. This points to the possibility that proto-porcelain distribution is characterised by its radiation from the core to the periphery. Moreover, proto-porcelain was restricted to only the highest-status burials in regional states, while it was incorporated in all levels of elite burials in the core area. Additionally, the types of proto-porcelain used in the regional states showed high consistency and seemed to be grouped together in specific sets. This

evidence suggests that proto-porcelain may have been distributed by the central court of the Western Zhou to various regional states, although Shandong may represent an exception to this proposed pattern of redistribution.

#### CIRCULATION OF PROTO-PORCELAIN

The following interpretations of the data with regard to the circulation of proto-porcelain are based mostly on typological analysis. Previous chemical analyses were insufficiently focused for the purposes of this study and I was unable to collect sufficient samples and personally conduct such scientific analyses. The results of the typological study reported in this article could be useful for future scientific research including chemical analyses.

##### *The Division of Proto-Porcelain Production in Southern China*

To understand the possible circulation of proto-porcelain between southern China and the Central Plains, the typological variation in southern proto-porcelain vessels first needs to be fully considered. This study collected all the published proto-porcelain data from southern China and conducted a systematic typology study. In southern China, most proto-porcelain from the Western Zhou period was found in burials in the lower Yangtze River Basin such as Zhejiang and Jiangsu, Anhui, Fujian, and other areas (Li 2018). (Proto-porcelain unearthed from the middle reaches of the Yangtze River corresponds to a different cultural background, discussed in the next section.)

Based on systematic typological research, I divided southern China into three regions: Qiantang River Basin, Ningzhen, and Eastern Zhejiang (Fig. 1). Each region displayed consistency in the types of proto-porcelain vessels produced there. The three regions shared some common types of proto-porcelain vessels such as Dou and Guan, but there were also two ways in which they differed. First, the precise forms of the same types of vessels differed regionally, indicating within-type variation. Second, each region produced several unique types of proto-porcelain vessels not seen elsewhere, including the Gui-type vessel and He in Qiantang River Basin and the Guan vessel in eastern Zhejiang. Of the three regions, the Qiantang River Basin appears to have been the most important for proto-porcelain production, as proto-porcelain has been found there in abundance (Fig. 1, Fig. 4). Consequently, I believe this was the most important centre of proto-porcelain production in southern China.

As the types of proto-porcelain excavated in these three regions are considerably different, I believe that each region produced different types of proto-porcelain. Evidence from kiln sites would further the discussion. Unfortunately, although many proto-porcelain kiln sites were distributed in Qiantang River Basin, the exact number is unknown due to lack of systematic survey and limited excavation of kiln sites. It is known that the excavated kiln sites belong to the Eastern Zhou period, suggesting there was large-scale proto-porcelain production during that period (Chen 2014). Since the exact dates of most kiln sites remain unclear, they are not discussed in this article.

Further evidence to support the classification of three proto-porcelain producing regions can be found in the symbols carved into proto-porcelain objects. These symbols are believed to be related to the production process. For example, the same symbol has been found carved on the same types of proto-porcelain from the same batches produced in the same region. We can take the Xiaoshan Chailing Mountain



Fig. 4. Proto-porcelain excavated from Qiantang River Basin: (1) Gui-type vessel (Deqing Ducang Mountain D10M1:10); (2) Guan (Deqing Ducang Mountain D2M1:1); (3) thick Zun (Deqing Ducang Mountain D2M1:18); (4) thin Zun (Xiaoshan Chailing Mountain D1:9); (5) He (Xiaoshan D26M1:31); (6) Gui (Tunxi M1:37); (7) Guan (Tunxi M1:59); (8) thick Zun (Tunxi M1:47); (9) thin Zun (Tunxi M1:58); (10) He (Tunxi M1:55); (11) Gui (Quzhou Grand Stone Tower); (12) Guan (Quzhou Huangjiashan); (13) thick Zun (Quzhou Grand Stone Tower); (14) thin Zun (Jiangshan M2:14).

mound burials, located in the Qiantang River Basin region, as an example. The 188 proto-porcelain objects unearthed in this cemetery were incised with more than 10 kinds of symbols (Hangzhou and Xiaoshan 2013). The same type of object from the same batch often had the same symbol on the bottom of each object; this phenomenon has also been observed among the proto-porcelain excavated from burials at other sites in the Qiantang River Basin region (Fig. 5).

After comparing all published data regarding the carved symbols, I discovered that most proto-porcelain excavated from the Qiantang River Basin shared the same symbols despite some minor differences across sites. Figure 5 shows that the carved symbols and distribution of proto-porcelain types consistently reflect that the proto-porcelain excavated from the Qiantang River Basin share unified type and production features; they therefore may have originated from the same production system. Specifically, Deqing might be the production centre for this area, as it shows advanced techniques (Yin et al. 2011). Considering that the Qiantang River Basin corresponded with the core area of the Yue state (ca. 2000–306 B.C.E.), it is possible that the production system was under the Yue state's centralised management. This hypothesis is worthy of future study. (I did not compare the symbols on proto-porcelain from the two other southern regions because of lack of data.)

#### *Circulation of Proto-Porcelain between Southern and Northern China*

Proto-porcelain excavated in northern and southern China was compared to determine possible relationships between the broader regions. The results of this

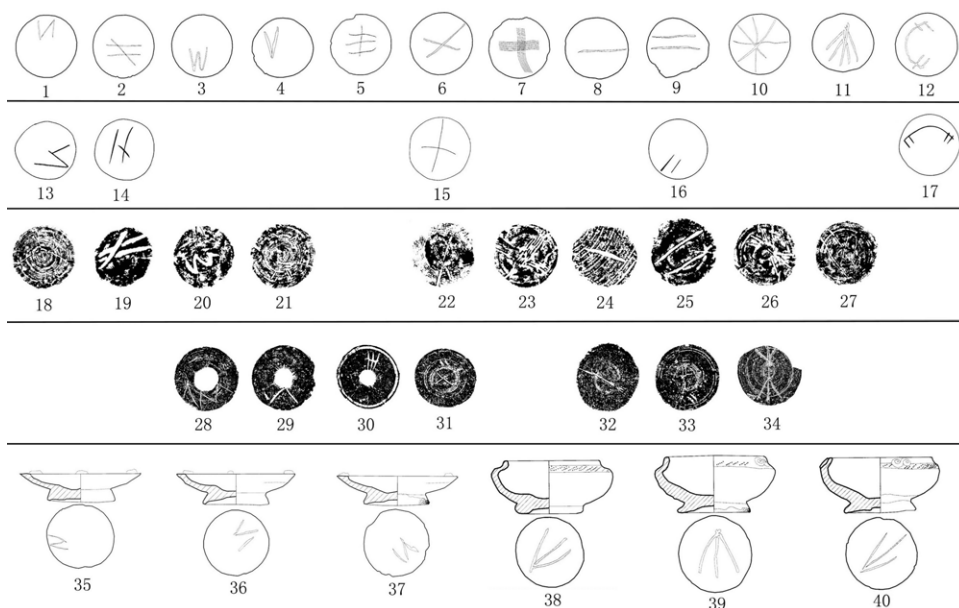


Fig. 5. Symbols carved into proto-porcelain objects from the Qiantang River Basin sites of Xiaoshan Chailing Mountain (1–12, 35–40), Deqing Ducang Mountain (13–17), Changxing Bianshan (18–27), Tunxi (28–34): Guan (1, 2, 4, 5, 7, 38–40); Dou (6, 8–10, 12, 29, 30); vessel lid (3); dish (11, 35–37); Zun (28, 32); bowl (31, 33); plate (34); unidentified objects (13–27).

comparison show that the Dou type is the most common in both regions. All the Dou found in northern China are very similar to the Dou in southern China; some were even decorated with the same motifs (Fig. 6, nos. 1, 9). The popular Zun type from northern China was also found at the Tunxi and Deqing in southern China (Fig. 6, nos. 2–3, 10–11). As for most of the other proto-porcelain types excavated in northern

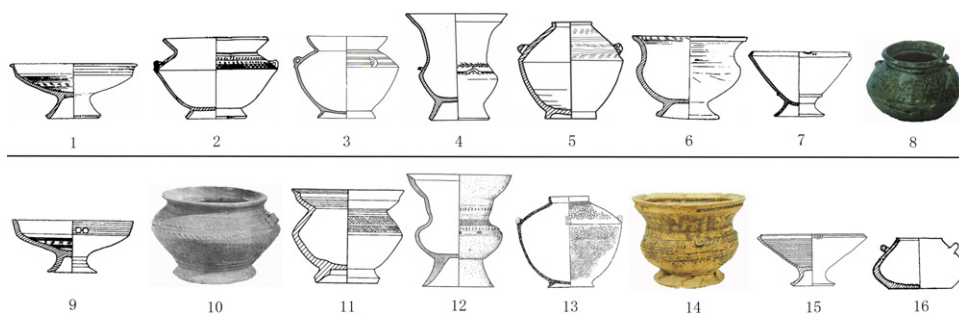


Fig. 6. Comparison of proto-porcelain excavated in northern China (1–8) and the lower Yangtze River Basin (9–16): (1) Dou (Jinhou); (2) thick Zun (Shaochen); (3) thick Zun (Luoyang Beiyao); (4) thin Zun (Qianzhangda); (5) Lei (Tengxian Zhuanglixixi); (6) Gui (Ying Pingdingshan); (7) Dou (Luoyang Beiyao); (8) Guan (Jinhou); (9) Dou (Dantu Dagang Zimudun); (10) thick Zun (Tunxi); (11) thick Zun (Deqing Ducang Mountain); (12) thin Zun (Tunxi); (13) Lei (Jiangshan); (14) Lei (Deqing Ducang Mountain); (15) Dou (Huangyan Xiaorenjian); (16) Guan (Jintan Biedun).

China, including the Lei, Gui, and Guan, these can generally be found in southern China as well, especially in the Qiantang River Basin (Fig. 6, nos. 6–8, 12–16).

In addition to the lower Yangtze River Basin, proto-porcelain and stoneware from the Western Zhou that are identical to those excavated in northern China have been unearthed in some places in the middle reaches of the Yangtze River such as the Yejiashan cemetery in Suizhou, Lutaishan cemetery in Huangpi, and Gaoshaji site in Wangcheng (Fig. 7). Based on bronze inscriptions and other archaeological evidence, both the Western Zhou cemeteries in Lutaishan and Yejiashan belonged to regional states that were under the control of the Western Zhou (Huangpi et al. 1982; Hubei et al. 2013). Considering the small amount of excavated proto-porcelain from these two places, it is unlikely that either is the place of provenance. As the proto-porcelain objects excavated in Yejiashan are completely consistent with those excavated in northern China in terms of assemblage and object type, I suggest that their proto-porcelain vessels were produced at the same location.

This study's comparative research shows that most types of Western Zhou proto-porcelain excavated in northern China originated from southern China, as the same or similar objects have been excavated there. In addition, all the known Western Zhou proto-porcelain kilns are in southern China, and proto-porcelain is found more extensively in southern China than in northern China. Furthermore, similar types can be found among the proto-porcelain unearthed at Tunxi and Deqing. Therefore, it can be inferred that the main centre of proto-porcelain production was likely in the Qiantang River Basin. Cultural markers such as bronze inscriptions and the burial features seen in Lutaishan and Yejiashan differ from those found in southeastern China. As these sites were under the control of the Western Zhou Dynasty, their proto-porcelain probably derived directly from Western Zhou distribution networks. Findings from previous research are consistent with this conclusion. For example, chemical analysis of Yejiashan proto-porcelain objects shows that they originated from Deqing in the Qiantang River Basin (Yu et al. 2018). Therefore, it is likely a system was

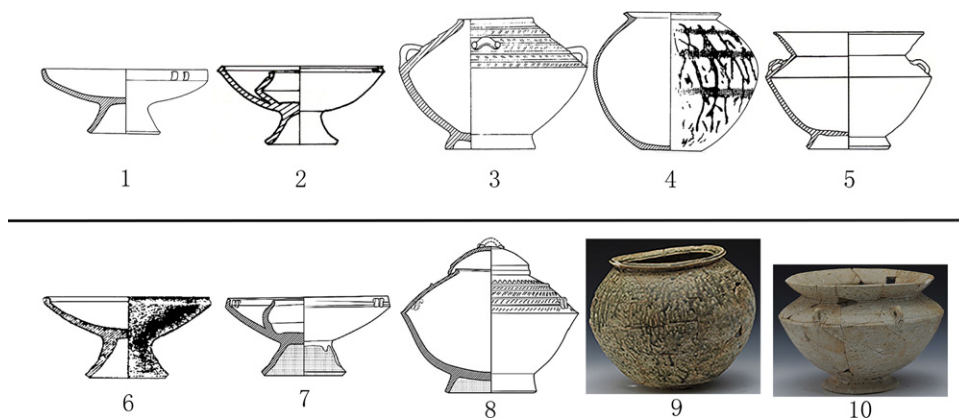


Fig. 7. Comparison of proto-porcelain and stamped stoneware excavated from northern China (1–5) and middle Yangtze River (6–10): (1) Dou (Qianzhangda); (2) Dou (Luoyang Beiyao); (3) Zun (Pingdingshan); (4) Guan (Qianzhangda); (5) Zun (Luoyang Beiyao); (6) Dou (Lutaishan); (7) Dou (Yejiashan); (8) Zun (Yejiashan); (9) Guan (Yejiashan); (10) Zun (Yejiashan).

in place to redistribute proto-porcelain from the reaches of the Qiantang River to the Western Zhou's central court and then to various regional states.

Although most proto-porcelain excavated in northern China originated in southern China, certain vessel types found in northern China are not present in southern China. The tall Zun and Gui are found only in northern China. The continuous triangle motif seen on these Zun, Gui, and Guan is a characteristic pattern of the Central Plains during the Western Zhou and could be considered a Zhou feature (Fig. 3, nos. 9, 11, 12). Since these proto-porcelain examples show features of objects from northern China, might they have originated in northern China? I think this is unlikely. First, no evidence of kiln-produced, Western Zhou proto-porcelain has been found in northern China. Scientific analysis shows that some of the proto-porcelain found in the core area of Western Zhou was made of China stone, which is the primary resource for later porcelain production in southern China (Zhou et al. 2016). Second, the technical features of proto-porcelain that integrate Zhou cultural features do not differ from proto-porcelain originating in southern China. Finally, as this comparative study included all the published data concerning southern China, it is unlikely that northern vessel types exist that have not yet been found in the south. Therefore, I assume proto-porcelain objects with Zhou cultural features suggest the possibility that Zhou people ordered custom-made proto-porcelain from southern China. Since fewer than five proto-porcelain vessels with these Zhou features have been found, I believe that such objects were probably produced on a very small scale. It would be extremely difficult to find similar objects in southern China, however, since few of the kiln sites have been excavated. I also tried to investigate the carved symbols on proto-porcelain excavated in northern China, but unfortunately this information is missing from most of the reports and could not be compared.

Another two features are worth noting. First, the same types of proto-porcelain commonly seen in northern China enjoy a high degree of standardisation and seem to have been specially produced in batches in workshops. The second is that although most proto-porcelain excavated in northern China shares types with objects found in southern China, most of these northern types are not popular in southern China. These features support the contention that custom-made pieces were ordered and sent from southern China to northern China. Certainly, actual circulation would have been more complex. It is possible that both custom and non-custom-made proto-porcelain objects were circulated to the north. To verify this hypothesis, a systematic scientific study that includes all types of vessels in the north and south is needed.

Attention should also be paid to whether the circulation of proto-porcelain was accompanied by the circulation of concepts regarding the objects' use. The current analysis shows that the proto-porcelain assemblages found in the Western Zhou's various regional states in high-status burials consistently centre on the use of Dou and Zun or Lei objects. In comparison, assemblages in burials in southern China centre on Dou objects, with assemblages featuring Dou and Guan objects (both proto-porcelain and stamped stoneware Guan) are common. For example, three proto-porcelain Guan were excavated from the Dantu Shijiadun burial in southern China, all with two pieces of proto-porcelain Dou on the Guan's mouth and three Dou on the Guan's shoulder. Moreover, a southern burial's status is reflected by the number of proto-porcelain Dou found there. Over 10 proto-porcelain Dou were found in high-status burials such as Dantu Mopandun and the Tunxi mound burials. In the burials of Jurong Fushanguoyuan, proto-porcelain Dou objects were found in odd numbered groups:

1, 3, 5, 7, or 9. Different numbers correspond to different spatial arrangements (Zhenjiang and Fushan 1979). Thus, significant differences exist in the use of proto-porcelain between southern and northern China; although proto-porcelain objects circulated north from southern China, their use patterns did not spread as widely.

#### *Redistribution System in the Western Zhou*

The suggested import of proto-porcelain from southern China and reallocation by the central court to regional states reflects the existence of a proto-porcelain redistribution system in the Western Zhou. The regional states that received proto-porcelain include the Jin, Ying, Qi, Yan, Wei, Zeng, Yu, Ba, and Peng. Some states were governed by the family surnamed Ji, while others were by families with non-Ji names. Both Zhou-type and Shang-type graves were seen throughout these states. This system involved many different precious items besides proto-porcelain. In the past, I conducted a systematic study on bronze objects used by the dynasty's central court and regional states and recreated the bronze production and circulation system based on lead isotope and trace elemental data (Li 2016). This study asserts that this bronze circulation system is highly similar to the system used to circulate proto-porcelain. According to my analysis, in the Early-Middle Western Zhou Period (especially in the Early period), all the regional states possessed high-quality sets of inscribed bronze objects that had been produced and distributed by the central court. While locally made, low-quality bronze objects were also found in several regional states (Li 2016), these finds suggest that the Early Western Zhou court distributed assemblages of bronze and proto-porcelain objects to its various regional states. I believe most regional states received high-quality bronzes from the central court, but only some of them received proto-porcelain, probably because proto-porcelain vessels in the Early Western Zhou Period were rarer than bronze artifacts. This distribution of precious and rare objects was closely related to the Western Zhou's enfeoffment system of distributing portions of land to people. This distributive system changed over time, with proto-porcelain beginning to decline in the Late Western Zhou. It is still difficult to confirm whether this decline resulted from changes in the relationship between the Western Zhou and the Qiantang River Basin rulers, the relationship between the Zhou court and its regional states, or simply fashion.

Connecting the distribution of bronze and proto-porcelain with the Western Zhou Dynasty's enfeoffment system suggests that the redistribution system not only served as a kind of resource and economic management system but was also connected to the political system (Li 2016, 2018). The Western Zhou court utilised this redistributive system to confer political power to regional states. The differences between the two types of precious items in the redistributive system should also be considered. The major difference between high-quality bronze vessels and proto-porcelain objects is that the bronzes were produced in the northern dynastic centres and their production was controlled by the central court. However, the central court only monopolised the distribution of proto-porcelain, not its production. As mentioned earlier, the existence of proto-porcelain objects with Zhou cultural features may reflect the possibility that Zhou people ordered custom-made proto-porcelain from southern China. The fact that some of the Zhou style proto-porcelain objects were discovered in regional states suggests that the Zhou central court ordered these types of decorated proto-porcelain objects from southern producers for the specific purpose of sending them to these regional states.

The relation between the southern powers and the Western Zhou rulers is not clear. The circulation of proto-porcelain might have been part of a market system between the south and north in which southern kilns produced proto-porcelain for the north as well as their own southern consumers. If so, what items the northern people traded in exchange for proto-porcelain is unknown. The Qiantang River Basin proto-porcelain production centre was roughly located within Yue territory, which suggests possible trade relations between the Yue state and the Western Zhou court. Near the Yue state, there was a different proto-porcelain production centre in Ningzhen area, which was covered by the Wu state. However, the various types and quantities of proto-porcelain produced in the Ningzhen area were far less than in the Qiantang River Basin, which suggests less interaction with northern China. The Wu state was probably less connected with the Western Zhou court than the Yue state in terms of proto-porcelain circulation. Moreover, southern states such as Wu and Yue differed from the northern “regional states” with regard to their relationship with the Zhou court. The motivations and background contexts for proto-porcelain circulation between the south and north still need to be studied in the future.

Finally, the regional states in which either Ji or non-Ji surnames were prevalent probably had different statuses in the redistribution system. The statistical analysis shows that fewer proto-porcelain objects are found as one moves outward from the Western Zhou core area to the regional states where the Ji surname was predominant and then to the regional states where non-Ji surnames predominated. Simultaneously, the use of proto-porcelain in high-status burials became increasingly exclusive. The Ji family controlled the central court and the power of the dynasty. It is reasonable that they would have controlled and used most of the proto-porcelain themselves, redistributed it to some of the more important regional states whose inhabitants shared the surname Ji, and finally considered giving some of it to the regional states whose inhabitants had other surnames. The distributed bronzes exhibit a similar phenomenon. In general, most of the states where people had the Ji surname (i.e., Jin, Zeng, Ying, and Yan) have a larger number of high-quality bronzes than the states such as Peng and Ba whose people had other surnames. The Zhou court apparently prioritised their family and supporters over other families as the number of proto-porcelain vessels was limited and high-quality bronzes were also a rather valuable resource. Why the Zhou court did not distribute more proto-porcelain and high-quality bronzes to non-Ji states to ensure their allegiance remains unanswered. This suggests further consideration of the different role regional states played in the dynasty’s redistributive and political systems is necessary. Moreover, why this system changed during the Middle Western Zhou Period is an important topic of investigation for future researchers.

#### CONCLUSION

This study shows that proto-porcelain was indeed valuable and used by people of high social standing in the Western Zhou. In general, proto-porcelain objects were more frequently used by Shang people as a continuance of the Shang Period tradition, while Western Zhou Dynasty proto-porcelain owners mainly belonged to the central court and Ji families of important regional states. Proto-porcelain was used in certain burial sets, and the composition of these sets was consistent across various regional states. In addition, based on types and quantity, proto-porcelain showed a pattern of radiation from the central court to peripheral states, which was a feature of the central court’s redistribution system.

Through a comparison with proto-porcelain in southern China, I believe that the main source of proto-porcelain lies in the Qiantang River Basin in southern China and the Western Zhou court perhaps obtained proto-porcelain by having pieces custom-made in the south, which were then distributed in sets to the dynasty's various regional states. However, significant differences exist in the use patterns of proto-porcelain between southern and northern China; therefore, circulation only involved the products themselves, not their function or meaning.

Proto-porcelain was part of the Western Zhou's redistribution system, but it was not the system's main item. My previous study of bronze objects found that high-quality bronze items during the Western Zhou were produced by the central court and redistributed to regional states in sets (Li 2016). Both the bronze and proto-porcelain objects showed the same redistribution pattern. High-quality bronze and proto-porcelain vessels given by the Western Zhou court were buried together in the cemeteries of the regional Jin, Yan, and Zeng states. I believe that this may have been a method for conferring political power to regional states. Further, the Western Zhou mainly obtained the raw materials for the bronze and finished proto-porcelain vessels from outside its territory. The resources that were spent by the Western Zhou court to gain these materials are an important subject for further study. Among highly valuable items from the Chinese Bronze Age, bronzes have always been the focus of study, while the significance of proto-porcelain has been significantly underestimated. Both materials were sought by high-status nobility, however. The types and quantity of proto-porcelain vessels are far more limited than those of bronzes, which accordingly makes proto-porcelain the rarer luxury good in northern China.

Unlike the comparatively clear function of bronzes in the ritual system of the Shang and Zhou dynasties, the role of proto-porcelain remains unclear. This study shows that proto-porcelain objects provide a new perspective for observing the ritual systems and politics of the Chinese Bronze Age. More importantly, it provides crucial information on the circulation system of the Western Zhou and its underlying political meanings. While this study provides a tentative interpretation of proto-porcelain circulation and some arguments on its provenance, further supporting evidence is still needed. A more detailed study should be based on systematic scientific analysis. It is necessary to conduct a temporally focused chemical analysis of proto-porcelain to better understand the entire circulation system from source to redistribution centre to recipient. Proto-porcelain from earlier periods should also be studied following a similar workflow. Revealing changes over time in the circulation system would help scholars evaluate ideas regarding the changing relationship between dynastic royal centres and peripheral states within and outside their domain. Moreover, future research should consider other items and resources circulated between the south and north, including metal and organic resources such as rare animals and plants. Only by examining more types of circulated resources can the system be clarified and interpreted.

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