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Marking practices and the making of the Qin Terracotta Army

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ABSTRACT

A striking feature of Qin material culture (770–210 BC) in ancient China is the frequency with which it preserves stamped, incised or painted marks with a variety of Chinese characters, numerals or symbols. In a general sense, such repeated mark-making was an administrative strategy that enabled Qin administrators to mobilise people, raw materials and finished goods in vast bulk, subject to careful quality and quantity control, and archaeologically, this strategy is nowhere more obvious than in the manufacturing feat constituted by Emperor Qin Shihuang's mausoleum and his Terracotta Army. This study considers the production marks associated with both the terracotta warriors and their accompanying bronze weapons from a new perspective. We compare and contrast the marking practices on these two very different kinds of artefacts, devoting close attention to what this implies about workshop organisation or the operational sequences behind their manufacture. We also assess the location of such signs on their parent objects as well as their wider spatial distribution across the pit as a whole, ultimately with a view to understanding craft organisation and project logistics during this crucial early phase of empire-building in China.

1. Introduction

A striking feature of Qin period material culture is the frequency with which it preserves stamped, incised or painted marks with a variety of Chinese characters, numerals or (as yet unintelligible) symbols (SIAATQ, 1988; Yuan, 1987, 1990, 2014; Yuang and Liu, 2009). Contemporary written records, on bamboo slips and wooden boards, also confirm how central such marks were to the logistical organisation and legal apparatus of the Qin state (ca. 475–221 BC, especially during the latter part) and later Qin Empire (221–206 BC; Bianxiezu, 1981, 2001; Hulsewé, 1985; Hunan Provincial Institute of Archaeology, 2006, 2012). In a general sense, repeated mark-making was an administrative strategy that enabled Qin administrators to mobilise people, raw materials and finished goods in vast bulk, subject to careful quality and quantity control, and archaeologically, this strategy is nowhere more obvious than in the manufacturing feat constituted by Emperor Qin Shihuang's mausoleum and his Terracotta Army. This paper considers the production marks associated with both the terracotta figures in Pit 1 of the mausoleum (particularly the terracotta warriors) and their accompanying bronze weapons. We compare and contrast the marking practices on these two very different kinds of artefact, devoting close attention to what this implies about workshop organisation or the operational sequences behind their manufacture. We also assess the location of such signs on their parent objects as well as their wider spatial distribution across the pit as a whole, ultimately with a view to understanding craft organisation and project logistics during this crucial early phase of empire-building in China.

By craft organisation and project logistics, we mean those production sequences and wider bureaucratic procedures that lay behind the mausoleum project, and wish to understand how they might also be indicative of Qin craft activity, military practice and state interference in other situations as well. Related to this question are also issues such as the size, location, organisation and number of different craft workshops, how knowledge was shared within and between workshops, what efforts were made at standardisation or quality control, as well as when and why. There is of course a considerable anthropological and archaeological literature on these topics, especially with regard to specialisation and standardisation (e.g. Earle, 1981; Torrence, 1986; Costin, 1991; Stark, 1991; Costin and Hagstrum, 1995; Clark, 1995; Eerkens and Bettinger, 2001; Roux, 2003; Eerkens and Lipo, 2005; Sun, 2008), including plenty of work on Chinese material culture (e.g. Bagley, 1995; Ledderose, 2000; Underhill, 2002; Li, 2007; Sun, 2008) and previous collaboration by the authors (Li, 2012; Li et al., 2014; Martinón-Torres et al., 2014).

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There is a vast array of surviving Qin palaeographic evidence that relates in interesting ways to the above topics. Many examples occur of both decipherable writing and undecipherable marks, and these are found on almost every possible material, including bronze, iron, stone, jade, bamboo, wood and clay. Likewise, it is clear that writing was being deployed for an extraordinarily broad range of purposes in the Qin period: emperor's edicts, juridical statutes, governmental ordinances, routine legal issues, religious texts, craft organisation, military affairs, political administration, public declarations, international diplomacy, historiography, private letters, and much else (Huang, 1980; Hunan Provincial Institute of Archaeology, 2006, 2012; Kern, 2000; Bianxiezu, 2001; Yuang, 2002; Yuang and Liu, 2009). More broadly, routine, highly organised and ubiquitous marking practices are salient features in many early complex societies (e.g. Egypt and Mesopotamia: Foxvog, 1995; de Maaijer, 2001; Wengrow, 2008; Wagensonner, 2009) and are especially conspicuous across contemporary 1st millennium BC Eurasia from China to the Mediterranean (e.g. Hellenistic Greece and Rome: Harris, 1993; Blonde and Muller, 1998; Chaniotis, 2005; Bachmann, 2009). In all cases there are intriguing combinations of text, numbers, pseudo-script and symbols linked to the various priorities of production, distribution and consumption (e.g. Andrássy et al., 2009). However, the writing on the terracotta warriors and their weapons arguably constitutes an especially insightful case where we might devote attention to the content of the inscriptions, their material culture forms and their distributions in analytically interesting ways.

Considerable palaeographic evidence is preserved on both (a) the terracotta soldiers of the Qin First Emperor and (b) the bronze weapons they carried. Despite a lot of interest in these marks (Yuan, 1984, 1990; Huang, 1990; Li, 2012; Li et al., 2011, 2012, 2014; Yuang and Liu, 2009), most treatments so far have placed their emphasis on how basic decipherment might complement the evidence for artisanal practice that is preserved in the documentary record. In contrast, there has been no systematic attention given to the spatial location of such marks, nor to comparison-and-contrast between the marks on the terracotta figures and those on the bronze weapons. This paper aims to revisit these marks with the above opportunities in mind, and reflects a wider collaborative effort combining metallurgical, chemical, quantitative and spatial analysis (e.g. Li, 2012; Li et al., 2011, 2014; Martinón-Torres et al., 2011, 2014; Bevan et al., 2013, 2014) to investigate the nature of the craft logics and logistical efforts (a) underpinning Qin ceramic warrior and bronze weapon production, (b) underwriting the layout and construction of the mausoleum pits, and ultimately also arguably (c) contributing to the emergence and administration of the Qin empire itself (Fig. 1).

2. Marks on the terracotta figures

As part of the initial discovery of the First Emperor's tomb complex in 1970s (SIAATQ, 1988; Yuan, 1990), some 1087 terracotta soldiers were excavated in the front, easternmost portion of Pit 1, and it is on this large, spatially coherent sample of warriors that this paper focuses. Across this group of 1087 warriors, there are 283 that bear marks: more precisely, 57 figures have stamped marks, 109 have incised names, 157 bear incised numbers, and one has a painted mark, with many examples of warriors exhibiting a combination of these (Table 1, but also Yuan, 1990; Wang, 1994: 568; Yuang and Liu, 2009: 21). These marks include 4 different place-names, 66 different personal names (Appendix A; with ongoing archaeology in other trenches producing a grand total of 87 names (Yuan, 1990), and reaching 92 names if we include those from other pits within the tomb complex (Yuang and Liu, 2009: 10), and 68 different numerical signs (Yuan, 2014). Apart from three marks found on the terracotta horses (that match warrior codes 38, 50, and 66 in Appendix A), most of the preserved characters and numbers were found on the terracotta warriors. Below we classify these marks further and consider their varying positions on the bodies of the terracotta figures, as well as how different marks are distributed across Pit 1.

2.1. Typology, semantics and workshop practice

As noted above, the most straightforward classification of marks on the warriors is to distinguish them based on marking method (stamped, incised or painted), and then by content (Figs. 2 and 3). Stamped marks on the terracotta soldiers constitute a fairly clear-cut group, not only for their method of application but also for their content. They normally include the Chinese character *Gong* (宫 meaning 'palace' or 'royal' and not to be confused with another character 工 that is also pronounced Gong and rendered the same way in Pinyin, but which has a different meaning, and that we consider separately below) plus one more character that seems to be the personal name of an artisan involved in the figure's manufacture (as argued in greater detail below and on the basis of wider evidence). Occasionally, the *Gong* (宫) character or an individual's name appears on its own in such stamped marks, but only rarely. Yuan (1990, 2014: 398) has argued, plausibly in our view, that *Gong* (宫) refers to a central, possibly palace-based workshop (see below for further discussion). These stamped marks must have been impressed in the clay when the latter was still wet and they are invariably placed at the base of the long-skirts of the warriors.

The incised marks can be divided into three groups: (a) those with a similar format to the stamped examples, with a place-name followed by a probable artisan's name, (b) a single Chinese character which seems to be an artisan's name, and (c) those that are simple numerals. First and in contrast to the stamped marks, incised examples of place-and-person marks very rarely make mention of the *Gong* (宫) workshop, but instead often mention *Xianyang* (咸阳) or *Xian* (咸), the Qin capital city. Likewise, this kind of inscriptional type is normally found in a different location on the warriors to the stamped examples, for example under the arms or on the back of each figure. Beyond these, one terracotta figure, discussed individually below, preserves incised marks mentioning not only *Xianyiang* (and one personal name) but also three other likely place-names from eastern Qin: *Yueyang* (栎阳), *Linjin* (临晋) and *Anyi* (安邑), two of the latter with personal names. All of them appear written on the same warrior's sleeve, with both this clustering of place-names and the choice of mark location on the warrior's body being unique. These marks also generally seem to have been applied on the clay when it was leather-hard, prior to firing. Some inscriptions also show only the name of the artisan, without any place-name.

Largely distinct from the above two categories of place-and-person marks on the warriors are a series of numerals, typically incised on a warrior's arm or chest. Fig. 5a shows that the number 5 (五) occurs most frequently, followed by 4 (四) and 10 (十), with the majority of numerical marks ranging from 2 to 10. In this front section of the pit, there are also one or two larger incised numbers, as well as evidence for the number 2000 (二千) on a warrior from more recent trenches excavated further towards the back of Pit 1. As with the incised place-and-person marks above, these incised numerals were mainly applied when the clay was still wet, before firing, although at present it remains impossible to exclude the possibility that a few may have been incised after firing.

A final more elusive category of mark is painted and found only very occasionally on the surface the warriors. More precisely, one Qin character painted in red (Wang, 1994: 568; Yuang and Liu, 2009: 21 and 59) and two numeral characters in black ink have been found in the rear restoration section of Pit 1 (so not part of