Connecting Pots and Places: How Many Centres of Pottery Invention in East Asia?

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ABSTRACT
Current evidence indicates that hunter-gatherers invented pottery in East Asia at least by 18 000 years ago, with early pottery coming from sites in Japan, southern China and in the Amur River region in the Russian Far East. A number of recent studies have provided important information about this early pottery, including its chronological age, its function, and the impact of changing environmental conditions. Another key issue concerns the number of centres of ceramic innovation. Was pottery independently invented in multiple East Asian locations or was it invented at a single core area with subsequent dispersals into other regions? This paper outlines multiple lines of evidence that have been used to support a multiple-origin argument. It then provides a response to each of these lines from a single-centre perspective. Ultimately, given the gaps in existing knowledge of early pottery it is too early to rule out either possibility. Additional work will be needed to resolve the debate, including a consideration of changing landscapes and the broader contexts of early pottery production.

KEYWORDS: pottery, pottery function, ceramic technology, invention, East Asia, dispersals, landscapes

1. Introduction

The world's earliest pottery (fired clay containers) was made by hunter-gatherers in Late Pleistocene East Asia, with particularly early evidence coming from Japan, southern China and the Amur region of the Russian Far East. A number of publications have highlighted the importance of these very early pottery traditions to English language audiences (e.g., Cohen 2013; Iizuka 2018; Kuzmin 2013). Recent studies have provided information on the age of this pottery (e.g., Boaretto 2009; Cohen *et al.* 2017; Kuzmin 2017; Wu *et al.* 2012), its function (e.g., Craig *et al.* 2013; Lucquin *et al.* 2016, 2018; Shoda *et al.* 2020), and environmental contexts (e.g., Feng & Wang, in press; Kawahata *et al.* 2017; Sato & Natsuki 2017). Another issue that has seen less attention concerns the number of centres of ceramic invention in East Asia. Was pottery invented independently in multiple locations (including southern China, Japan and the Amur) or was it invented in just one core area

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with subsequent dispersals into other parts of East Asia?

This paper looks at both sides of the debate. It outlines arguments for the multiple-centre perspective (e.g., Kuzmin 2006, 2013) and then provides a response to each of these lines of evidence from a single-centre perspective. Ultimately, given the gaps in existing knowledge of early pottery it is too early to rule out either possibility. In order to satisfactorily resolve the issue new data will be required from fieldwork in key regions and the detailed analysis of archaeological assemblages. The robust datasets from Japan will need to be considered within their broader East Asian contexts, including a consideration of changing landscapes and resource availability.

Investigating the number of centres of pottery production in East Asia necessarily requires consideration of evidence from a number of modern countries. This creates a linguistic hurdle as a great deal of important research has been published in languages other than English. This paper relies solely on English-language literature as this is the language of the *Japanese Journal of Archaeology*. However, it should be recognized that future considerations of the topic could benefit from the integration of non-English resources.

2. Pottery chronology, environment and function

A number of recent English-language publications have summarized early pottery in East Asia (e.g., Cohen 2013; Gibbs & Jordan 2013; Kuzmin 2006, 2013; Iizuka 2018) so only a brief discussion of a few representative sites is provided below (Figure 1). In each region pottery was first made and used by hunter-gatherers who likely retained a largely nomadic lifestyle.

A number of sites in China south of the Yangzi River have produced evidence for pottery older than 10 000 cal. BP (Lu 2011), including the cave sites of Xianrendong and Yuchanyan. Recent work at Xianrendong has dated the site's pottery as early as around 20 000 cal. BP making it a strong contender for the earliest pottery ever recovered (Wu *et al.* 2012). Kuzmin (2013) is sceptical of this early date, however, preferring to date the earliest pottery at the site to around 14 000-15 000 cal. BP (but see Cohen *et al.* 2017). Regardless, other sites point to a Late Pleistocene date for southern China's earliest pottery, including Yuchanyan, which has been dated to around 18 000 cal. BP (Boaretto 2009). Pottery from Xianrendong has surfaces that are either plain or finished with parallel striations, perhaps from smoothing with plant fibres or a toothed implement (Cohen 2013, p. 64; Wu *et al.* 2012, p. 1697). The rims can be decorated with u- or v-shaped notches or rows of irregularly spaced punctates below the rim. A reconstructed pot from Yuchanyan has a pointed base and surfaces with apparent cord impressions (Yuan 2002, p. 162).

Compared to some adjacent regions of East Asia, there is considerably more evidence for early pottery production in Japan, where over 100 Incipient Jomon sites have been

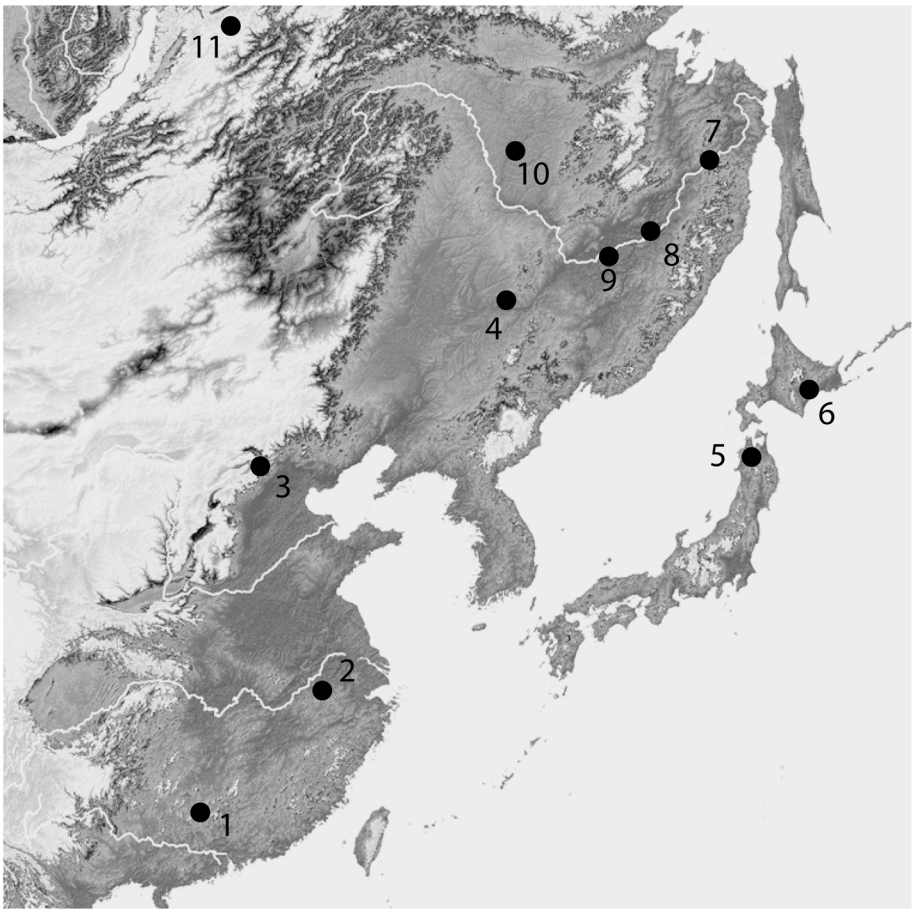

Figure 1. Map showing locations of sites mentioned in the text: 1. Yuchanyan; 2. Xianrendong; 3. Hutouliang; 4. Houtaomuga; 5. Odai Yamamoto 1; 6. Taisho 3; 7. Khummi; 8. Gasya; 9. Goncharka 1; 10. Gromatukha; 11. Ust'-Karenga.

identified. The Incipient Jomon has been subdivided into three phases (Taniguchi 2017). Since these are based on changes in pottery decoration a degree of overlap is to be expected. Undecorated pottery (phase 1) is earliest, followed by pottery decorated with linear relief (phase 2). Phase 3a pottery is decorated with punctates, nail-impressions or cord-impressions, and phase 3b is characterized by a range of decorations, including rolled cord-marking. Undecorated pottery from the Odai Yamamoto 1 site has produced some of the earliest dates for pottery in Japan. Nakamura *et al.* (2001) assign an age of around 16 540 to 15 710 cal. BP to this pottery but Kuzmin (2013) suggests a wider range of 17 400 to 14 000 cal. BP. Several other sites in Honshu have produced pottery with dates

that are almost as old.

A number of sites in the Amur River valley and its tributaries have produced pottery earlier than 10 000 cal. BP (Kuzmin 2013). Key sites include Gasya, Khummi and Goncharka 1, which are attributed to the Osipovka culture. Vessels from these sites include flat bottomed pots sometimes with decorated surfaces. At the Gasya and Khummi sites, pots have organic inclusions and rough grooves on both the exterior and interior surfaces, while pottery from the Goncharka 1 site lacks organic inclusions and is decorated with zig-zag patterns (Zhushchikhovskaya 2005; Yanshina 2017). Radiocarbon evidence suggests the earliest Osipovka pottery dates to around 16 800 to 14 100 cal. BP, which is approximately the same age as the first pottery in Japan or perhaps only slightly later (Kuzmin 2013).

A key observation from the early dates of pottery in southern China, Japan and the Amur is that in each of these areas pottery predates the onset of warming conditions during the Bølling-Allerød (Taniguchi 2017), which began around 14 700 cal. BP. Pottery, therefore, was first made during the Last Glacial stage and its invention cannot simply be attributed to climatic amelioration or any concomitant availability of new food resources. This also means that pottery was invented during a period of lower sea levels. At the Last Glacial Maximum sea levels were as much as 120 m below current levels (Clark and Mix 2002) making coastlines in some regions dramatically different when compared to present coastlines. For example, the Yellow Sea and large parts of the coastal shelf of the East China Sea were probably exposed up to 16 000 cal. BP and the southern tip of Japan would have been closer to the mainland (Guedes *et al.* 2016).

Due to the colder climate, biome distributions during the Last Glacial stage were not the same as today (Figure 2). In southern China, pottery likely appeared in temperate woodland environments, while in Japan pottery appeared in temperate coniferous forest and the Amur has been reconstructed as a steppe-tundra biome at the time of pottery's appearance (Guedes *et al.* 2016). It is evident that early pottery was made and used in a range of biomes across East Asia, each with their own suite of resources.

The function of early pottery in East Asia is an important topic for understanding its appearance. The rounded or pointed bases of some early pots, along with their open shape, suggest that boiling of foodstuffs was a possible function (Kobayashi *et al.* 2004). Shellfish (Ikawa-Smith 1976), nuts and other plants (Kobayashi *et al.* 2004) and bone grease (e.g., Prendergast *et al.* 2009) have all been suggested as foods that would benefit from processing in early pottery vessels. Advances in organic residue analysis have begun to provide direct evidence for the resources that were processed in early pots, although it is worth noting that some studies have relied on fairly small sample sizes and the application of residue analysis methods has been somewhat uneven. Future studies will benefit from larger datasets that incorporate more sites, including from key regions like southern China, where evidence is currently limited. The most extensive organic residue results have come

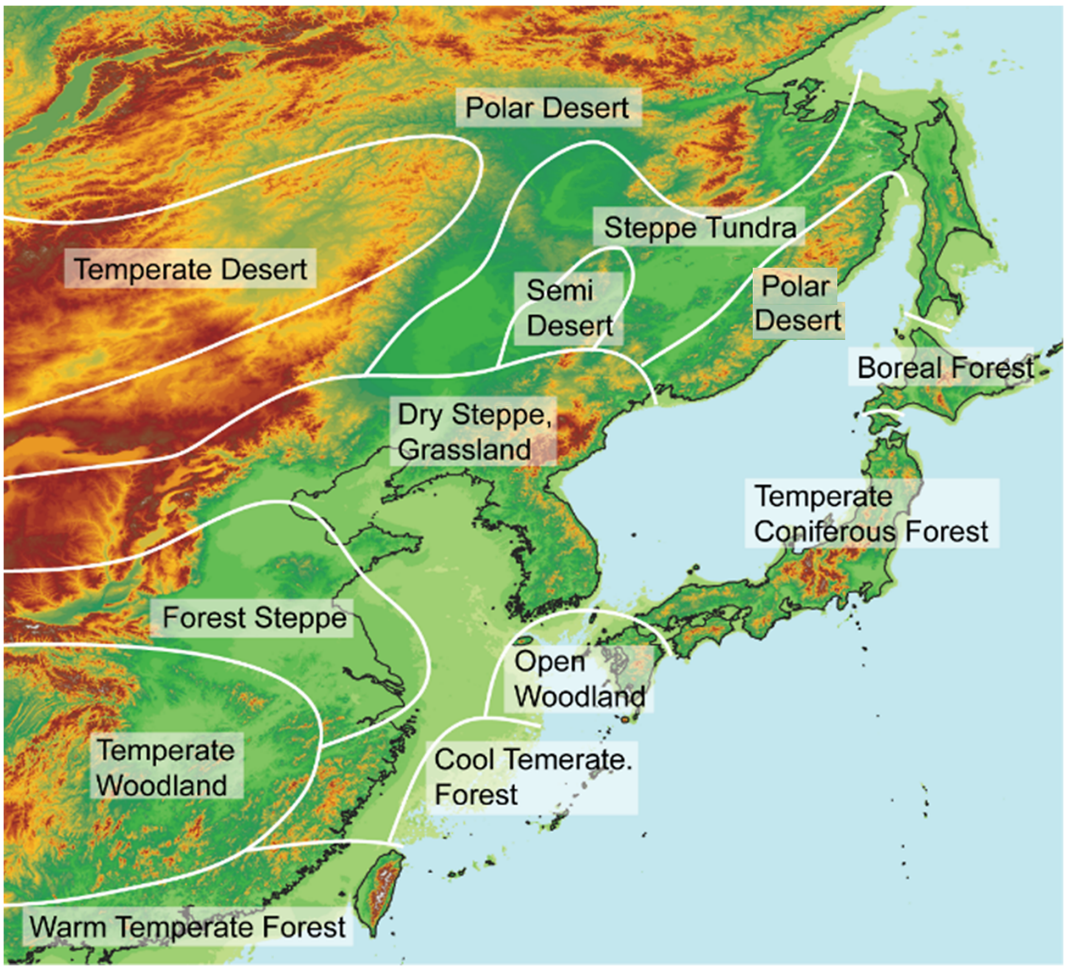

Figure 2. Biomes in East Asia during the period 21 000 to 17 000 years ago (after Guedes et al. 2016: figs. 2 and 4). The map also shows the reconstructed coastline for this time period. Note that much of Yellow Sea and the East China Sea was exposed land.

from Japan, where evidence indicates the processing of aquatic species in pottery during the Incipient Jomon (Craig *et al.* 2013), a pattern that persists into later periods (Lucquin *et al.* 2016). Shoda *et al.* (2020) demonstrate that in the lower part of the Amur pottery was also used to process aquatic species, perhaps salmonids and freshwater fish, while organic residue analysis of pottery from the Gromatukha site in the Middle Amur indicates a significant contribution of lipids from ruminant animals indicating that there was variability across the region, although the number of samples from Gromatukha was small ($n=5$).

Another explanation for pottery's invention looks to the possible prestige or symbolic

value of the technology, including for the aggrandizement of particular individuals (Hayden 2009), although pottery could instead have been used to prepare special foods for the benefit of the collective (Pearson 2005, p. 826), perhaps to promote group cohesion during ritual events. In each region of early pottery use, the number of vessels was very limited, which may lend some support to a prestige or symbolic explanation for pottery; at its inception, pottery was evidently not used for large-scale processing of foods. Pots, as rare objects, may have had inherent prestige value or possibly it was the special foods they contained— prepared or served in limited quantities—that had prestige value, particularly if these foods were only produced during infrequent feasting events (Hayden 2009).

3. Centres of pottery invention

Whatever the reason for the initial invention of pottery, it is clear that it eventually became an important and long-lasting technology in several regions within East Asia. But was the appearance of pottery in different regions the result of multiple, independent innovations by different hunter-gatherer groups? Or was it the result of a single invention in a core area that was subsequently adopted by people in other regions? The multiple-centre perspective has been supported by some scholars (e.g., Keally *et al.* 2004; Kuzmin 2017) and some have even raised the possibility of multiple inventions within a single region. Kobayashi *et al.* (2004, p. 20), for example, notes the possibility that Jomon pottery had multiple origins within Japan.

3a. Multiple centre arguments

Several lines of evidence have been offered to support the multiple centre perspective. First, the spatial distribution of early pottery may suggest separate centres of origin. The earliest pottery in East Asia is found in southern China, Japan (especially Honshu and Kyushu) and the Amur while regions in between appear to lack comparatively early pottery. In particular, the earliest known pottery from northern China, the Korean peninsula and Hokkaido and Sakhalin is later in date. Current evidence indicates the pottery was being made in northern China shortly before the onset of the Holocene (Li *et al.* 2017), which is several millennia later than in southern China. The earliest pottery from Korea comes from Jeju Island, south of the peninsula, dating to around 9500 cal. BP (Kim *et al.*, in press). Pottery in mainland Korea is later, dating to around 8200 cal. BP (Kim & Seong, in press). On Hokkaido, early pottery sites are rare when compared to the rest of Japan. Pottery from the Taisho 3 site is as early as 14 410 to 14 080 cal. BP (Yamahara 2006), which is a couple of millennia later than Honshu. Early pottery from Sakhalin postdates the onset of the Holocene, dating to after 10 200 cal. BP (Vasilevski *et al.* 2010). While all of these dates are early from a global perspective, predating pottery from most other world regions, they are notably later than

the earliest pottery in southern China, Japan and the Amur.

Second, pottery from each of the earliest centres is relatively simple and indicative of a low-level of production. As Brown (1989, p. 221) notes, the expedient manufacture of pottery should be expected in the earliest phase of production in a region. In the pottery of East Asia, firing temperatures are low, shapes are simple, decoration tends to be absent or unelaborate, and in each region the number of vessels produced is relatively low. At Yuchanyan, for example, only two vessels have been identified, which are "coarsely made, with thick, uneven walls" and fired to a relatively low temperature of between 400 and 500 degrees C (Boaretto *et al.* 2009, p. 9596). Taniguchi (2017) notes that sites in Japan attributable to the first phase of the Incipient Jomon (phase 1) produce very small numbers of undecorated pots and that it is only after the transition to the Holocene that pottery production drastically accelerates. For example, at Odai Yamamoto 1, of the 46 sherds recovered, 44 are thought to come from a single vessel (IIzuka 2018, p. 287). At the Gasya site in the Amur, most recovered sherds derive from a single vessel, which may have been fired to a temperature of around 500 degrees C (Zhushchikhovskaya 2005, p. 15). The infrequent production of simple, low-fired vessels may be consistent with each region having a sustained phase of experimentation following local inventions.

Third, despite the overall simplicity of pottery from each region, some scholars have suggested that there are notable technological and stylistic differences between them (e.g., Keally *et al.* 2004, p. 349; Kuzmin 2006, p. 368). For example, pottery from Yuchanyan and Xianrendong in China have rounded bases, inorganic inclusions and thick walls, and sometimes cord marks. In Japan, pottery from the first phase of the Incipient Jomon is plain although "false puncture" and "incised" pottery are also recovered from a few sites (Taniguchi 2017, p. 155). In the Amur, some sites have pots that are flat-based, thick-walled, include organic inclusions and have grooved or undecorated surfaces. Pottery from Goncharka 1, however, has zigzag decoration and lacks organic inclusions.

Fourth, Kuzmin (2013, p. 548) argues that if pottery technology spread from a "core" area to other regions then there should be other evidence of cultural exchange or contact. This could include the movement of other materials or ideas, or genetic ties between populations. Kuzmin (2013) suggests there is no such evidence. For example, microblades, which occur in northern China, Japan and the Russian Far East do not appear in southern China.

A key issue with a multiple-centre perspective is understanding why hunter-gatherer communities in different biomes all began making pottery at roughly the same time, when no other people in the world were doing so. This cannot simply be attributed to climatic amelioration as, in each area, pottery predates the onset of global warming at the end of the Pleistocene.

3b. A single-centre response

A single origin for early pottery in East Asia has been supported by some scholars. Zhang (2002, p. 35), for example, suggests a single centre of pottery invention but does not identify a particular location where pottery was invented. Southern China would be a possibility given the very early dates from that region. Aikens and Higuchi (1982, p. 114) suggest that the origin of pottery in Japan can be traced back to mainland Asia, with the Korean peninsula as a possible entry point. Kajiwara and Kononenko (1999, p. 67) see the Amur River as a conduit for the spread of pottery technology between regions. Jordan *et al.* (2016) model the westward spread of pottery across the Eurasian continent, selecting a single origin source in southern China. That study, however, was not specifically focused on the origin of pottery in East Asia and their model was not contingent on a single-centre position. But if there is any validity to an argument for a single-centre origin of pottery, how should it respond to the four points listed above: (1) that pottery is missing from intervening areas; (2) that pottery in each region appears to be experimental; (3) that there is an apparent lack of technological or stylistic similarity between the early centres of pottery production; and (4) that there is no other evidence for cultural contact?

To address the fact that comparably early pottery is not found in intervening areas like Korea and northern China, there are a couple of issues that need to be considered. First is the impact of changing landscapes. During the late glacial period, when pottery was first made, sea levels were considerably lower than modern levels. This suggests that many early pottery sites could now be submerged and inaccessible to archaeologists. For example, we might speculate that pottery was invented near the Xianrendong site in southern China and entered Japan through Kyushu, which is the closest point in Japan to mainland Asia. A least-cost path analysis including bathymetric data indicates that a likely route would be across land that is now submerged (Figure 3). Rather than expecting to find intervening sites in northern China or Korea, this model suggests that evidence for intervening sites would now be mostly underwater. This particular model does not speak to the likelihood of any connections between the Amur and China or Japan, although it is possible that pottery spread northward along the eastern coast of Korea and Primorye, along shorelines that are now submerged. This is highly speculative but evidence from organic residue analysis, which indicates that early pottery was largely used to process aquatic species (Craig *et al.* 2013), suggests that a coastal orientation for early pottery sites would be likely. The second issue that needs to be considered is the variability in intensity of archaeological research and the difficulty of identifying early pottery sites on the landscape. Not all regions within East Asia have experienced the same intensity of archaeological research and as research progresses some gaps in our understanding may begin to be filled. For example, radiocarbon dates from the Houtaomuga site have recently pushed back the reliable age of early pottery in north-eastern China to around 12 900 to

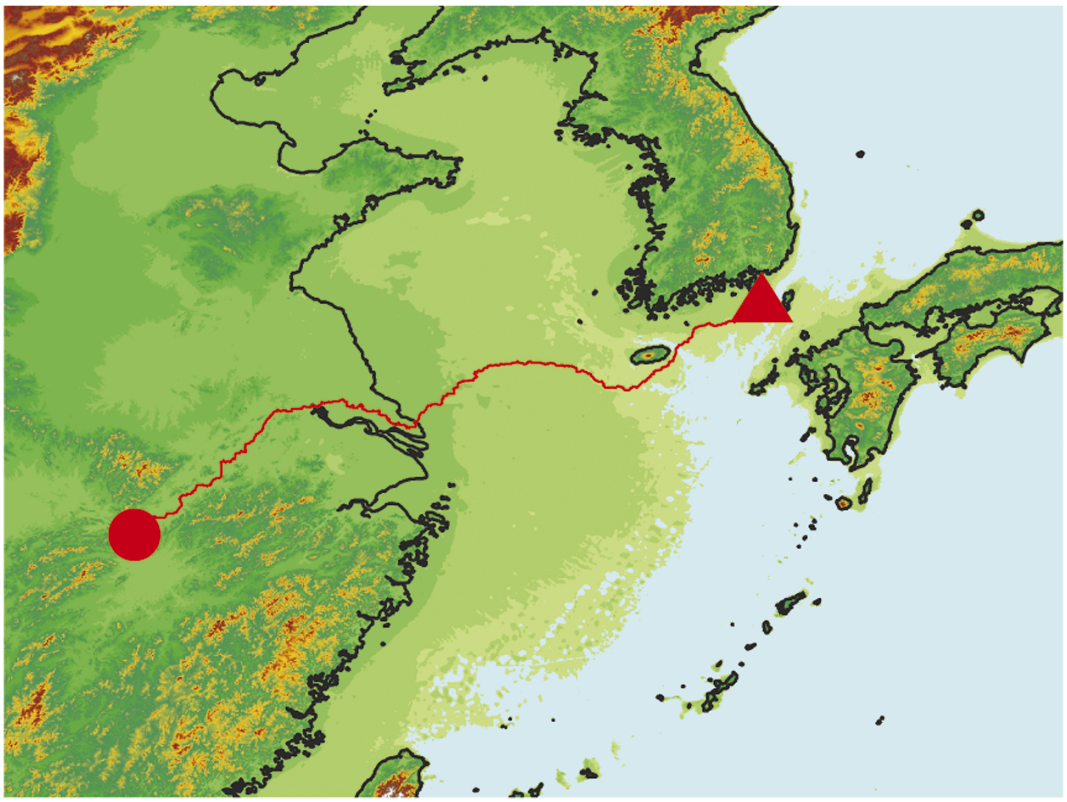

Figure 3. Least cost path analysis using bathymetric data, beginning at the site of Xianrendong (circle) and ending at the southern tip of Korea (triangle), which is a possible entry point for pottery into the Japanese archipelago. The map shows the reconstructed coastline for the end of the Pleistocene. Note that the least cost path crosses land that is now submerged. Also note that Japan is closer to mainland Asia.

11 100 cal. BP (Wang & Sebillaud 2019). As Kuzmin (2013, p. 549) points out, an even earlier reported date from the Hutouliang site in north-eastern China (Yasuda 2002, p. 127) requires further published details before it can be accepted. It is also worth noting that some of the earliest evidence for pottery comes from cave sites, especially in southern China, which are particularly intrusive on the landscape and are consequently easy for archaeologists to find. In other regions where early pottery may instead be associated with open air sites, discovering significant sites may be more challenging. Third, it is possible that in some of the intervening areas, early pottery was once present but was quickly abandoned. Given how prevalent pottery is in the prehistoric archaeology of many world regions, archaeologists may be tempted to assume that once pottery appears in a region it will easily take hold and have longevity. But it is possible that some hunter-gatherer

groups in East Asia briefly tried pottery but then gave it up, preferring instead to use other container technologies, which might leave little archaeological trace. This could make it seem that some regions were devoid of pottery even though they were conduits for the dispersal of pottery between regions.

If pottery was invented in a single, core area, we might assume that it would only disperse to other areas once it had developed into a more sophisticated technology. This is not the picture that we see in East Asia, with the earliest pottery in southern China, Japan and the Amur all exhibiting characteristics that might be described as experimental. How might a single-centre argument address this? Rather than thinking about this material as experimental or primitive, it is perhaps better to describe it as a container technology that usefully fulfilled particular roles. In some areas, this seems to be the small-scale processing of aquatic species. While the earliest pottery in East Asia may seem simple from the perspective of 21st century archaeologists, who have familiarity with how pottery developed over millennia, the hunter-gatherer communities who first adopted pottery may have viewed it as suitably sophisticated for their specific needs. We might speculate, then, that an apparently simple early pottery tradition spread from a single-centre and continued to be made in a relatively unchanged way in each region that adopted it. This simple pottery could continue to be made until a need for different sorts of pottery emerged, perhaps with the onset of the Holocene, when changing environments and new potential food sources encouraged an increase in pottery production and the elaboration of new pottery types to fulfil new needs. While this is speculative, it is worth noting that in Japan, for example, pottery does increase in number at the onset of the Holocene (Taniguchi 2017).

The third reason that some has led some archaeologists to reject a single-centre perspective is the perceived technological and stylistic differences between the earliest centres of production. This is based on the assumption that if pottery dispersed from a single centre then every adopting group should make pottery in the same way. However, there are a number of points that should be considered. First, the difference between the regions may be overstated. Yanshina (2017), for example, points out some similarities between early pottery from southern China and the Amur, including surface treatments. And in each region the overall shape of pots is somewhat similar, with fairly simple, open forms dominating. There are differences in the inclusions found in pots, with some regions (e.g., southern China) having mineral inclusions and others having organic ones (e.g., some sites in the Amur). However, it is not always clear that these inclusions were intentionally added as temper. Instead, the perceived differences could reflect a shared practice of using unmodified clays that already contain inclusions, with specific differences reflecting local geology and vegetation. The use of largely unmodified clays for early pottery production seems to be the case at Ust'-Karenga 12 in Transbaikal (Vetrov & Hommel 2019, p. 49). Second, the variability that is observed may be the result of different communities adapting

pottery to their own preconceived notions of what is appropriate for a container to look like. In the case of the Amur, earlier types of containers may have even been adapted to create pottery. In particular, Zhushchikhovskya (2005) argues that baskets were used as a kind of mould for pottery production, perhaps indicating a "metaphorical link" (Knappett *et al.* 2010, p. 599) between these two types of containers. Here it may be useful to consider early pottery from other world regions. For example, Knappett *et al.* (2010, p. 600) suggest that variability in early pottery from Knossos on Crete was influenced by pre-existing container typologies in basketry and wood, which each had "specific sets of perceived properties and meanings." This indicates the importance of looking at pottery within broader technological traditions that may affect how pots were made within a particular region. Likewise, in the Near East, early pottery exhibits considerable variability in form and decoration despite evidence for contacts between regions and the likelihood that pottery in this part of the world had a single origin. Third, and more speculatively, it is possible that the common ancestor of pottery is a currently unidentified tradition that was technologically and stylistically similar across the broader East Asian region. Recognized differences in each specific region could reflect subsequent adaptations of this ancestral tradition. Again this is highly conjectural but it is worth noting that Rice (1999) has hypothesized an early "software horizon" comprised of unfired or low-fired clay containers that gave rise to later pottery traditions. This kind of software may be largely invisible in the archaeological record.

A final point that has been used to support a multiple-origin perspective is the apparent lack of additional evidence for contact between the early centres of pottery production, which might include both genetic and archaeological evidence (Kuzmin 2013). However, if pottery did disperse between regions it may have been the spread of the idea of pottery technology, which would not be contingent on the large-scale movement of human populations. Thus, genetic connections between regions would not necessarily be expected. In terms or archaeological evidence, it is also perhaps useful to distinguish between the exchange of ideas and the movement of artefacts. Studies of obsidian, for example, show that this material was exchanged fairly widely but not to the extent that it can connect regions as diverse as southern China, Japan and the Amur (Kuzmin 2012). This may be because obsidian, as a material, was a finite resource that would eventually be "used up" as it moved through down-the-line exchange. The idea of a technology, however, is not finite and could presumably be spread much farther. It is noteworthy that there is evidence that prepared core/microblade technologies did spread throughout much of north-east Asia, including in the Russian Far East, Japan and northern China (Kato 2014). The fact that southern China is not included in this microblade zone is interesting. It is certainly possible, however, that the idea of pottery and the idea of microblade technology spread independently, in which case we should not assume that the lack of microblades in southern

China has any bearing on connections in pottery technology.

4. Conclusion

This paper outlined four observations that have been used to support a multiple-centre argument for the origins of pottery in East Asia, with key centres in southern China, Japan and the Amur. It then provided responses to each of these observations from the alternative perspective, which suggests that pottery was invented only once, and then dispersed from this original core area. Admittedly, much of this response is based on speculation and the absence of evidence, which is not a particularly satisfying counterargument. However, the absence of evidence does not always mean that something is untrue and the real conclusion of this paper has to be that (1) it is too early to say definitively which side of the debate is right and (2) that more work will be needed to determine whether pottery was invented once or multiple times in East Asia.

In particular, more fieldwork designed to look for new early pottery sites is needed, especially in areas between the currently recognized centres of early pottery production in southern China, Japan and the Amur. As noted above, due to changes in landscapes after the last glacial maximum and evidence for aquatic uses of pottery, some key sites are likely now submerged beneath the East China Sea and along the coasts of Japan and Korea (Guedes *et al.* 2016). Underwater archaeology will be the only way to assess these invisible landscapes but this will be challenging. Continued effort to contextualize early pottery in East Asia is also important. This includes understanding how pots were used through the application of organic residue analysis with a focus on the earliest pottery collections. It also includes refining our understanding of how technologies passed between hunter-gatherer communities and why certain technologies are adopted while others are not. There is also a need for more detailed discussions of key pottery assemblages and associated dating and archaeological evidence, which will allow more detailed technological and stylistic comparisons between regions (e.g., Yanshina 2017). For example, inter-regional comparisons can benefit from advances in reconstructing manufacturing techniques (Roux 2019; Thér 2020). This can include the application of micro-CT analysis, which has been used to study prehistoric pottery in other parts of the world (e.g., Kahl & Ramminger 2012; Kozatas *et al.* 2018), as well as ceramic petrography, which can provide insights into manufacturing techniques in addition to information about raw material selection and preparation (Quinn 2013: 176). The overall high preservation of organic residues in early pottery from East Asia suggests that compound-specific radiocarbon dating of absorbed residues (Casanova *et al.* 2020) may be a viable method for dating pottery from the region. High resolution chronological information will be vital for determining when and where the earliest pottery was made and how it may have spread to other regions.

Understanding where and when pottery was invented in East Asia is an important topic. This is the region of the world's earliest pottery so it can provide exceptionally long-term insights into how pottery was used and how it developed during later millennia with the advent of social complexity, resource intensification and increased specialization. The topic has wider implications as well. Jordan and Zvelebil (2009) proposed the idea that pottery technology originating in East Asia dispersed westward across the Eurasian continent, leading to the adoption of pottery by hunter-gatherers all the way to north-western Europe (see also Gibbs & Jordan 2013; Jordan *et al.* 2016). Understanding how and why pottery was first invented in East Asia and how it may—or may not—have dispersed between regions can provide important insights into the adoption of pottery by hunter-gatherer communities in other parts of the continent.

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土器を地域に結びつけて考える：東アジアにおける土器の起源は何か所あったのか

ケビン・ギブス

和文要旨

近年の研究により、狩猟採集民による土器の発明は、東アジアでは約18,000年前までさかのぼることが明らかになった。日本、中国南部、ロシア極東地域のアムール川流域からは、特に古い土器が報告されている。これら土器出現期の資料について、近年、その編年上の位置づけとともに、残存脂質分析などによる機能分析や、景観・環境条件の時間的変化の影響についての研究が進んでいる。さらに、東アジアにおける土器の起源は一か所だったのか、あるいは複数だったのかという議論も重要である。

複数起源説の立場に立つ研究者は、その根拠として、いくつかの理由を挙げる。第一に、何人かの研究者は、複数の起源候補地から出土した土器の間には、技術的・様式的類似が認められない点を指摘する。第二に、これらの起源候補地の間には、古い土器が出土していない空白地帯が存在する。特に、朝鮮半島と中国北部からは、出現期の土器は報告されていない。第三に、各地域から出土した最古級の土器は、いずれもその焼成温度が低く、作りも単純であることから、複数起源説と矛盾しない。複数起源説の支持者は、日本・中国南部・ロシア極東地域の3か所から報告された出現期の土器がほぼ同年代に位置づけられる理由は、類似した経済・文化的発展段階をたどってきた各地の狩猟採集民が独自に土器を発明したからだ、と主張する。

しかし、現時点における資料が限られていることを考えると、単一起源説の可能性を否定することも問題である。本稿では、狩猟採集民が従来の技術体系に新しい発明を組み込んでいく過程と、可能な伝播経路、土器の機能、環境データの検討を通じて、現段階では複数起源と単一起源の論争に決着をつけることはできない、と主張する。たとえば、近年における残存脂質分析の結果が土器と水産資源との深いつながりを示していることを考えれば、出現期の土器が、海岸ルート沿いに伝播した可能性がある。その場合、伝播ルートとなった地域は、最終氷期以降の海面上昇に伴って水没した可能性が高い。

狩猟採集民における土器の拡散に関する研究の重要性は、東アジア考古学だけでなく、世界の考古学にとっても重要である。近年、複数の研究者が、東アジアにおける土器の発明がアジア全域と北部ヨーロッパにおける土器の出現に関与した可能性を指摘している。

キーワード：土器、土器の機能、土器の製作技術、発明、東アジア、拡散、景観