

## Feasting and the earliest mass production at the dawn of cities

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New investigations in southeastern Turkey and northern Syria have provided ground-breaking evidence for the emergence of cities in the Near East. During the fourth millennium BC, sites in this area reached up to 130 hectares, with a large increase in pottery and obsidian production. This suggests the existence of large population centres five hundred years before the urban explosion of Uruk, the earliest city recorded and located in modern Iraq. Through the use of statistical and digital methods of pottery analysis, the Majnuna Project is investigating the introduction of the mass production of pottery at these early urban settlements.

Tell Majnuna, a mound on the outskirts of Tell Brak in northeastern Syria, has revealed more than 350,000 fragments of pottery in large mass graves, together with enough animal bones to indicate the serving of a meat-based meal for several thousand people. The dozens of human bodies found, some displaying signs of violence, indicate the celebration of large feasts in association with organised violent conflict.

The ceramics of this period are crucial to our understanding of intensive and complex craft production in early cities. The volume of ceramic production can inform us about population size and the exploitation of natural resources in ancient settlements.

### *Digging digital pots*

But how many pots are we talking about? How many feasting episodes can be identified in the many layers of burials and rubbish found at Majnuna? How many people can be fed from these pots? These are just some of the many questions we must ask ourselves when investigating the nature of populated communities at this time.

In order to answer these questions, the project aims to develop specific tools to treat large-scale ceramic samples in simple and efficient ways. Based on a digital database of all excavated sherds, a statistical protocol has been developed to provide a confident range of the possible numbers of vessels, their variation and size, taking into consideration different methods for these estimations and the difficulties in determining exact figures. Also, by digitally reconstructing the vessels from pottery drawings, we are able to understand approximately how many portions of food each vessel could carry and, therefore, the volume of discarded food and the size of each feasting event. The measurement of vectors via computer analysis is also used to assess how similar the pots are and how much ancient potters diversified or standardised the design of vessels for large-scale distribution. Computer simulations are also used to calculate how these pots could have been used over the course of a number of meals, and with different ration sizes, and this enables us to explore different models.

### *Cross-regional research and heritage protection*

Ongoing investigations in Turkey are part of a combined strategy aimed to improve our knowledge of pottery production in the fourth millennium BC. Fieldwork at Arslantepe, Malatya, was carried out in collaboration with the Italian Archaeological Expedition in Eastern Anatolia of the University of Rome La Sapienza, a leading team in the study of early complex communities and the analysis of ceramic mass production. During a fantastic season at Arslantepe, an extension of the late fourth-millennium (VIA phase) complex was discovered north of the main building corridor. It was also possible to compare the locally mass-produced bowls to the Majnuna sample, and to record various traces of the production techniques used for these pots.

Other potentially mass-produced assemblages will be identified through the study of written reports and archaeological materials at the British Institute at Ankara and other research centres in Turkey. Published and unpublished ceramic collections will be examined in order to understand similarities in production techniques and pottery types of this period. A digital geographical database will integrate all the information gathered during the investigation; this will allow us to visualise the density and evolution of different pottery types across northern Mesopotamia.

The emergence of mass production in this region reflects sophisticated social transformations not seen previously in human society. Moreover, it challenges the traditional view of southern Mesopotamia as the cradle of civilization, showing that craft specialisation and intense urban production activities took place contemporaneously in different areas of Mesopotamia. Furthermore, the Majnuna database is a concrete approach to safeguarding the heritage of countries in the event of armed conflict. The off-site study of Syrian antiquities along with the analysis of Turkish collections provides a unique opportunity to identify, classify and date previously excavated artefacts through cross-regional collaboration, providing greater chances of recognising authentic pieces acquired by illicit traffic and illegal digging.



Mass-produced bowl from Arslantepe, Turkey. Courtesy of the Italian Archaeological Expedition in Eastern Anatolia.