




Project Gallery

New evidence for sealing in the Pre-Pottery Neolithic from Tol-e Sangi, Iran

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During the excavation of Tol-e Sangi in southern Iran, tokens and a sealing were discovered in Pre-Pottery Neolithic (PPN, *c.* 7050–6900 BC) layers. As the oldest sealing found in Iran, this artefact suggests that storage and sealing practices were used during the PPN period in South-west Asia.

Keywords: West Asia, Pre-Pottery Neolithic, sealing, token, storage

Introduction

Seals and sealings are indicators of some degree of social complexity, a topic at the centre of substantial archaeological debate. Surplus production and the concomitant need to store and monitor this surplus led to the practice of storing and sealing items in containers or warehouses. Clay sealing is where a piece of clay is used to secure an object, this could be a store-room door or a container such as a pot, basket or sack (Matthews 1993). The oldest evidence of sealing in the western part of the Fertile Crescent dates to the late Pre-Pottery Neolithic (*c.* late eighth millennium, Akkermans & Duistermaat 1997), while the use of sealing appears to be more recent in the eastern part. Around 25 seals and 140 sealings retrieved in Tol-e Bakun in the Fars cultural zone of southern Iran indicates that the Chalcolithic society of the fifth millennium BC in this region was increasingly complex (Alizadeh 2006). Small clay and stone objects, which may have been used for accounting and sealing, have also been found at the nearby site of Tol-e Sangi. These objects are substantially older than sealings previously found in Iran, dating to the end of the PPN.

Tol-e Sangi

Tol-e Sangi is located in Safashahr County, in southern Iran (Figure 1). In 2019, five trenches were dug in different parts of the site. The most extensive stratigraphic sequence was obtained from Trench 3, where 14 settlement phases were identified from both the PPN and the Pottery Neolithic (PN, *c.* 6900–6700 BC), making this a key location for studying the transition

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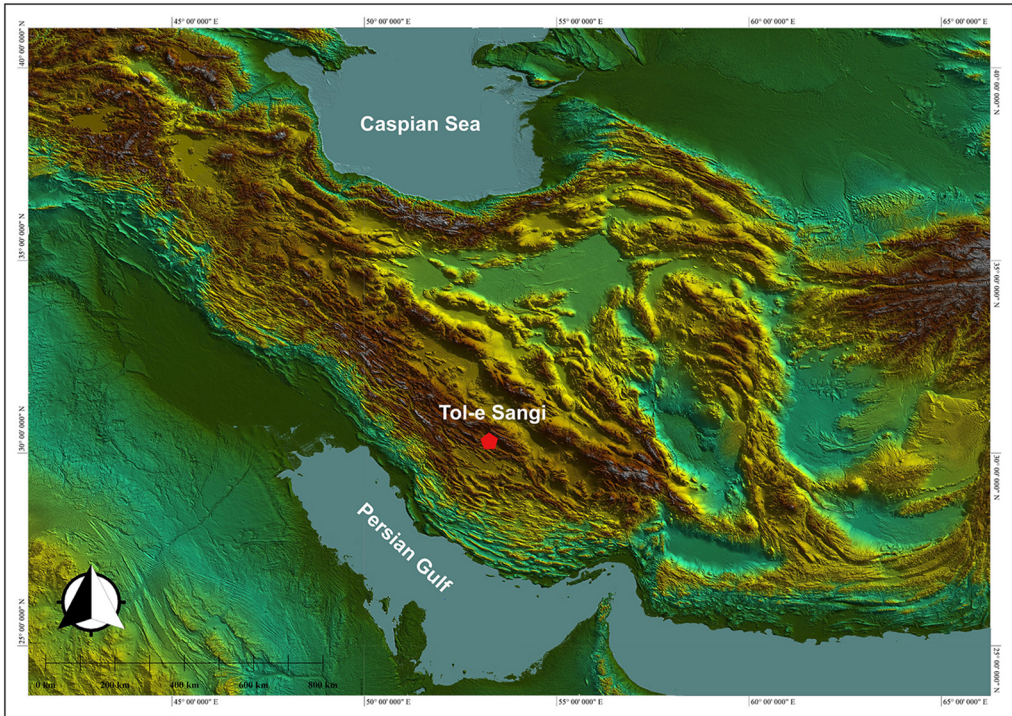


Figure 1. The location of Tol-e Sangi (figure by authors).

between these periods in South-west Asia. Radiocarbon dating indicates that pottery was used for the first time in this region around 6900/6850 BC.

The remains of mudbrick, chineh (clay) and stone walls were uncovered during excavation. Some of the floors and walls had been painted red. Stone tools, beads and shells for jewellery, ground stones, stone vessels and numerous small clay and stone objects were discovered. Every trench contained small clay and stone objects; here, we focus on the examples found in a pit (Context 4025) in Trench 4 to help us understand their potential function.

Sealing and token

Trench 4, located in the northern part of the site, yielded 17 clay objects from its lower layers (Context 4025) (Figure 2). These objects were rounded, sub-rounded or oval. The clay was thoroughly kneaded, then shaped, and the surfaces were smoothed; all have a similar texture. Sixteen have a diameter between 12 and 16mm and a thickness of 3mm (Figure 3), while one is larger, 24 × 15mm, with a thickness of 4mm (Figure 4). Although similar in texture and form to the others, this larger clay object displays an inward curve on its edge and a linear depression on its reverse face (Figure 4).

There are no notable impressions on the obverse face. This object seems to have been applied as a sealing before it was completely dry (Figure 5); after initial shaping, it was probably placed on a basket and pressed slightly, impressing a reed into its reverse face, before it

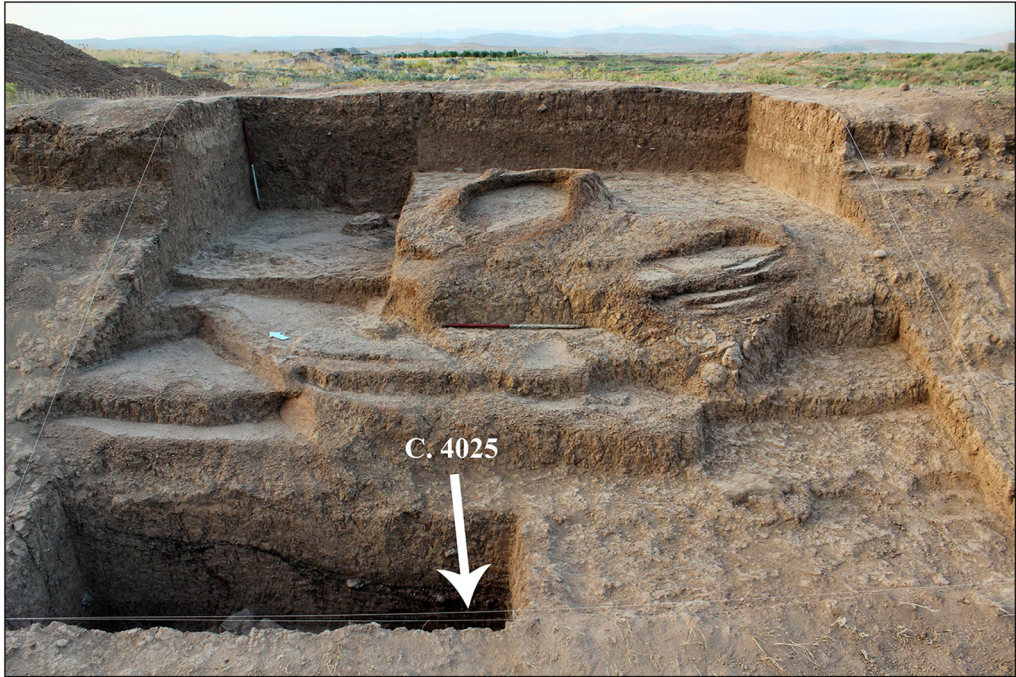


Figure 2. Overview of Trench 4 and the location of Context 4025 (figure by authors).



Figure 3. Neolithic tokens from Tol-e Sangi (figure by authors).

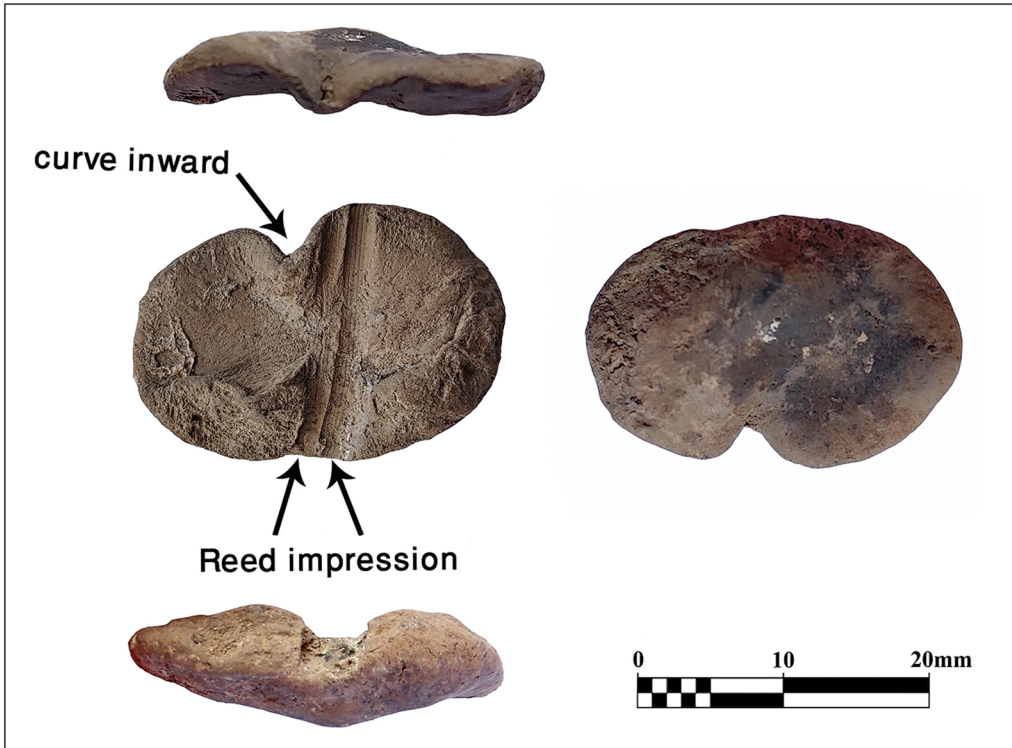


Figure 4. Neolithic sealing from Tol-e Sangi (figure by authors).

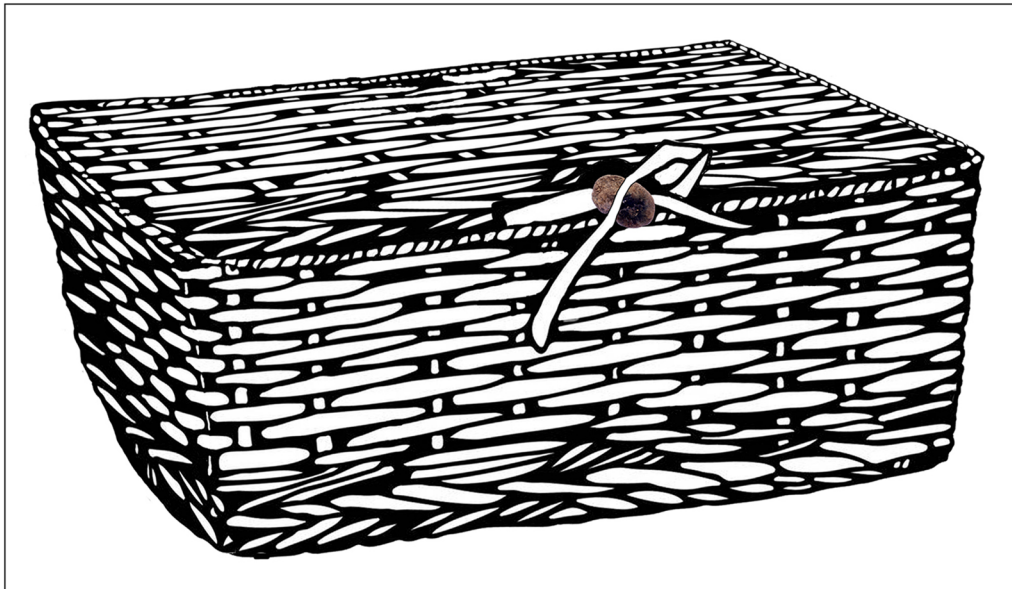


Figure 5. A hypothetical reconstruction of the basket showing the placement of the sealing (figure by authors).

was tied to the basket with cord, causing the edge to curve inward. After losing its function, it was discarded in the pit among ashes, which, if still hot, may account for the baking and burning of the object. Archaeobotanical analysis identified the remains of reeds at Tol-e Sangi. Reed baskets are still used in this region today and this finding could indicate that similar containers were made and used during the Neolithic period. A radiocarbon date on a charcoal sample from Context 4025 provides a date of *c.* 7050–6900 BC for the clay objects, placing them within the PPN (Figure 6).

Artefacts similar to the clay tokens have been found in various sites across south-western Asia, although the different shapes invite varied interpretations regarding their function. The discovery of such items near the mouth and ears in burials at Boncuklu Tarla (Türkiye) indicates that some of these objects were used as ear ornaments or labrets (Kodaş *et al.* 2024), but other interpretations suggest their use as tokens for accounting (Schmandt-Besserat 1992). The different shape of the larger object from Context 4025 suggests a different function; the reed impression and inward curving edge indicate that this object was attached to a basket and likely served as a sealing.

Similar small clay objects were found at the Neolithic site of Chogha Bonut in south-western Iran. The simpler forms from this site are also classified as tokens but two have the impressions of reed and matt on their reverse faces and are identified as sealings/tokens (Alizadeh 2003). The presence of reed impressions on objects from both sites reduces the likelihood that these marks were created accidentally, and similarities in shape suggest they had a specific function. Additionally, the edge of the sealing found at Tol-e Sangi shows a

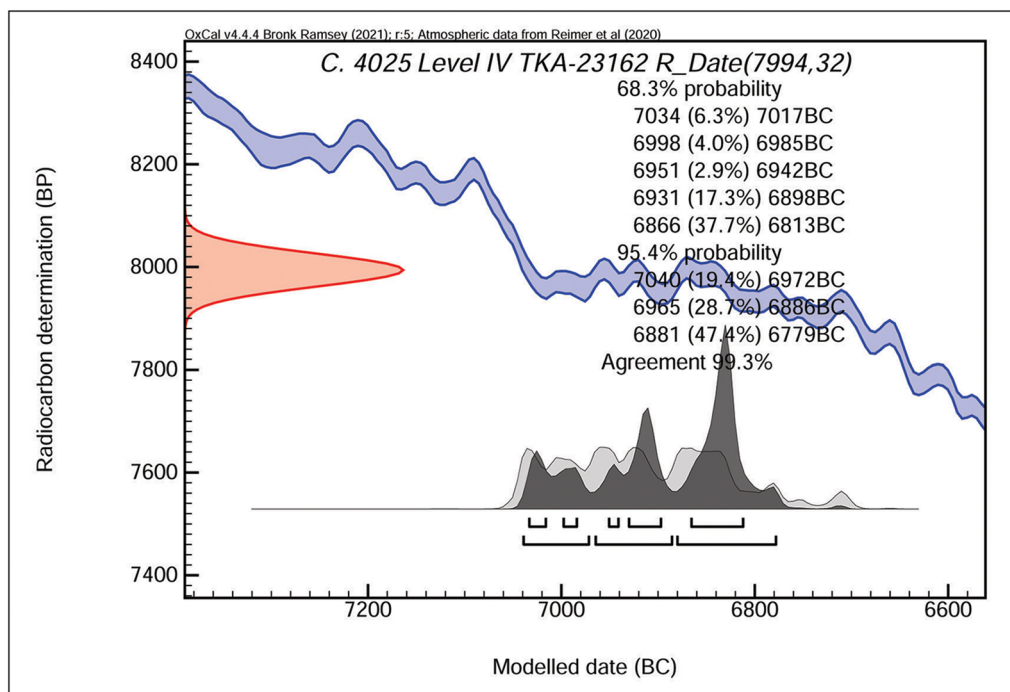


Figure 6. Radiocarbon date for Context 4025 (figure by authors).

curve inward that likely resulted from the pressure of a cord used for sticking. This evidence supports the idea that the objects from Tol-e Sangi and Chogha Bonut are indeed sealings.

Given the similarity of the small clay objects to other artefacts in South-west Asia, their function can be associated with accounting, storage and systems of control. Pieces of clay sealings, with reverse impressions of containers and no impressions on the obverse faces, were also found alongside clay and stone tokens at the later Neolithic site of Hajji Firuz in north-western Iran (Voigt 1983), and similar clay tokens at the Pottery Neolithic site of Tepe Khalesh in north-central Iran date to *c.* 6000–5600 BC (Valipour *et al.* 2013). The Tol-e Sangi sealing indicates that the practice of sealing is 1000 years older than previously presumed for the eastern part of the Fertile Crescent.

Conclusion

Seventeen clay objects were discovered during the excavation of a Pre-Pottery Neolithic pit at Tol-e Sangi, in southern Iran. Based on their form, size and surface evidence, two functions can be attributed to these objects: tokens and sealing. The tokens have a flat surface and were used individually, while reed impressions on the larger sealing indicate it was attached to a basket. Sealing was used to manage storage, while tokens were employed for accounting purposes. The sealing from Tol-e Sangi is one of the oldest yet discovered in Western Asia, pushing the practices of sealing and storage back into the PPN in this region of the world and demonstrating that the presence of sealings and tokens alone does not necessarily indicate the functioning of complex systems of economic administration. Societies without complexity or hierarchy may also have had storage and control systems.

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