

BEVELED RIM BOWLS OF THE EASTERN HALF OF THE IRANIAN PLATEAU:
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Abstract: During the Uruk period, which was almost the same as Susa II, many economic, social, and technological developments took place. One of the most significant advances of this era was the production of a distinct type of pottery called the *Beveled Rim Bowl* (BRB). It is of paramount importance to the archaeology of Southwest Asia owing to the wide range of distribution, abundance, and variety in shape and size. During this period, this type of pottery was discovered in the most important areas of southwestern Iran and the plains of Susiana, Deh Luran, and Ramhormoz from the beginning of the fourth millennium to the beginning of the third millennium BC. Cylindrical seals, clay tablets, counting systems, Banesh trays, tubular and nose handle jars, multicolored pottery, and BRB appeared first in the Southwest and then in other parts of the Iranian plateau. This evidence is among the important features of the analysis of trans-regional relations between Iran and Mesopotamia in the fourth and third millennia BC. The authors of the current research have sought to examine the general distribution of BRB on the eastern half of the Iranian plateau, the purpose of which would be to provide the answer to one fundamental research question, that is, the manner of and the reason for the current distribution of BRB in Tepe Yahya, Tal-i-Iblis, Shahr-i Sokhta, Tepe Langar, Konar Sandal, and Kaleh Kub Sarayan regions, and the relationship between their production and distribution in this region, and their original production in southern Mesopotamia and southwestern Iran. Although a vast range of scholars has employed a superficial approach to declare the cultural, economic, and commercial interactions between these areas and other parts of Iran, including the eastern and south-eastern regions, as the reason for the current distribution of this type of ceramic, specialized research on the temporal differences of the emergence of BRB in different parts of the Iranian plateau has remained elusive. It may be attributed to the fact that the cultural and social developments of Susa II, including the production of BRB in the eastern and south-eastern regions, have chronologically occurred later. This postponement may be explained by the decline in trade routes of the Central Plateau of Iran in the second half of the fourth millennium BC. From the end of the fourth millennium BC and especially from the beginning of the third millennium BC onward, the east, southeast, south, and southwest of Iran became the main corridor for cultural and commercial interactions with Mesopotamia. Furthermore, the authors seek in this study to comparatively examine the BRB discovered from the areas of the Susiana plains and the semi-eastern areas of the Iranian plateau and those of the original birthplace of Southern Mesopotamia in terms of shape, size, application, frequency, and chronology. The findings indicate that the bowls discovered in the mentioned areas have differences and similarities in shape, dimensions, volume, weight, frequency, and function.

Keywords: Eastern Half of Iran, Beveled Rim Bowls, Bronze Age, Susiana, Southern Mesopotamia.

چکیده: در دوران اوروک که تقریباً همزمان با شوش II است، تحولات اقتصادی، اجتماعی و فناوری زیادی صورت پذیرفته است. یکی از تحولات خاص این دوران، تولید سفالی شاخص به نام کاسه لبه وارخته است. کاسه‌های لبه وارخته به دلیل گستردگی دامنه پراکنش، میزان فراوانی و همچنین تنوع در شکل و اندازه، دارای جایگاهی ویژه در باستان‌شناسی آسیای جنوب غربی هستند. این گونه سفالی در این بازه زمانی که از اوائل هزاره چهارم تا اوائل هزاره سوم ق.م را در بر می‌گیرد، در اغلب محوطه‌های شاخص جنوب غرب ایران و دشت‌های شوشان، دهلران و رامهرمز کشف شده است. مهرهای استوانه‌ای، الواح گلی، نظام‌های شمارشی، سینی‌های بانشی، کوزه‌های چهاردسته‌ای (دسته دماغی) و ظروف سفالی چندرنگ به همراه این سفال، ابتدا در جنوب غرب و سپس در سایر نقاط فلات ایران ظهور یافتند. شواهد مذکور در شمار شاخصه‌های مهم تحلیل ارتباطات فرا منطقه‌ای بین ایران و بین‌النهرین در هزاره‌های چهارم و سوم ق.م هستند. نگارندگان مقاله حاضر، ضمن بررسی گستره پراکنش سفال لبه وارخته در نیمه شرقی فلات ایران، به جستجوی پاسخ این پرسش اساسی پرداخته‌اند که پراکنش آن در این منطقه که در تپه یحیی، تل ابلیس، شهرسوخته، تپه یحیی، تپه لنگر، کنار صندل و کله-کوب سرایان کشف شده‌اند، چرا و چگونه انجام گرفته و رابطه بین تولید و توزیع آن در این منطقه با مراکز اصلی ظهور آن در جنوب بین‌النهرین و جنوب غرب ایران چیست؟ اگرچه اغلب باستان‌شناسان در بیانی عمومی، برهم‌کنش‌های فرهنگی، اقتصادی و بازرگانی میان مناطق یادشده و سایر نقاط ایران از جمله مناطق شرقی و جنوب شرقی را دلیل گسترش این گونه سفالی دانسته‌اند ولی بحث خاصی درباره تقدم و تأخر زمانی ظهور کاسه‌های لبه‌وارخته در بخش‌های مختلف فلات ایران نکرده‌اند. به بیان دیگر، تحولات فرهنگی و اجتماعی شوش II از جمله تولید کاسه‌های لبه‌وارخته در مناطق شرقی و جنوب شرقی، دیرتر روی داده است. این تأخیر را شاید بتوان با کم رونق شدن راه‌های تجاری بازرگانی فلات مرکزی ایران در نیمه دوم هزاره چهارم ق.م تبیین کرد. از اواخر هزاره چهارم ق.م و به ویژه از ابتدای هزاره سوم ق.م به بعد، شرق، جنوب شرق، جنوب و جنوب غرب ایران مسیر محوری و اصلی برهم‌کنش‌های فرهنگی و تجاری با بین‌النهرین شدند. مطالعه تطبیقی و بررسی شباهت‌ها و تفاوت‌های کاسه‌های لبه‌وارخته‌ی مکشوفه از محوطه‌های دشت‌های شوشان و محوطه‌های نیمه شرقی فلات ایران از نظر شکل، اندازه، کاربرد، فراوانی و گاهنگاری با یکدیگر از یک سو و با خاستگاه آن‌ها در بین‌النهرین جنوبی از سوی دیگر، از دیگر اهداف مقاله است. این مطالعه نشان داده است که کاسه‌های مکشوفه از محوطه مناطق مذکور از نظر شکل، ابعاد، حجم، وزن، فراوانی و کاربرد دارای تفاوت و بعضاً تشابهاتی هستند.

کلمات کلیدی: نیمه شرقی ایران، کاسه‌های لبه وارخته، عصر مفرغ، شوشان، بین‌النهرین جنوبی.

I. Introduction

After the collapse of Susa I, Southwest Iran befalls an era known as the beginning of Elamite or Susa II. During this period, the culture of the south-western region of Iran experienced some essential shifts. The dramatic increase in cultural interactions between Uruk and Susiana is one of the greatest events of this period. This settlement was formed into large hubs, small centers, villages, and hamlets. The main hubs of the settlement above included Susa, Abu Fanduweh, and Chogha Mish. Although autonomous in governance, the Susiana Plain was under the supervision of a well-established, properly managed, and strictly controlled system that became the origin of the old urbanization (Fig 1). The widespread application of numerical tools, clay balls, seals and seal impressions, tablets, and other evidence related to administrative management and political development eventually led to the emergence of writing and script later in the period. Another technology of this period is the production of multicolored pottery and various other ceramics. During the Susa II, four-handled jars were first manufactured, which were often decorated with distinct geometric motifs. The production of this type of pottery gained further momentum during Susa III. These small handles were placed parallel to each other on the four sides of the narrow top of the ceramic and seemed to have more of a decorative nature. The discovery of tools such as bronze needles and rods, gold and silver beads, and metal containers and figurines made using molding methods indicates the progress of metalworking in this period.

39% to 56% of all the ceramics discovered in the Susiana plains are similar (Abdi, 1999).



Figure 2. Example of a beveled rim bowl (Kaercher, 2009).

This pottery was first discovered by De Morgan in Susa in 1897, long before being introduced as Uruk pottery in the ancient world. Then, during the excavation of Tepe Musiyan by Gautier and Lamper, several samples of these ceramics were discovered. In 1928, numerous Beveled Rim Bowls (BRBs) were discovered from Susa excavations (De la Fuya *et al.*, 1928). Le Brun published a list of 16 sites in the plain of Khuzestan and its outskirts, from which BRBs were obtained (Le Brun, 1980). In 1999, this number increased to 45 sites (Abdi, 1999) and Potts has mentioned 107 archaeological sites in 19 regions in Iran and Pakistan as well (Potts, 2009). Outside of the Susiana Plain, this pottery was first reported by Ghirshman in Tepe Sialk (Ghirshman, 1938). The abundance of this pottery in all archaeological sites such as office buildings, religious buildings, cooking places, and industrial structures such as kilns, graves, private houses, and yards and alleys is of paramount inquiry interest (Alizadeh, 2021).

Concerning their application, they have been reportedly employed as child burial symbols (De Mequenem, 1943), bread baking molds (Burton-Brown, 1946; Baumgartel, 1947; Schmidt, 1982; Millard, 1988), containers for separating cheese from whey, plates for giving vows and offerings (Delougaz, 1952), containers for the storage of burnt aromatic substances near burial (Buchanan, 1967), disposable tableware for storing Uruk's aristocratic banquets (Forest, 1987), symbols for manifesting the religious or administrative domination of the Uruk era (Zagarell, 1986), and the standard of employment for workers in different regions (Rothman, 2004). These containers were produced in more or less certain sizes, and their capacity was 90%, 65%, and 45% of one liter. Their certain, somewhat standardized size and their abundance have led to the theory that these dishes were ration plates, which was probably set by the local administrative organization for workers of different ages (Nissen, 1970; Johnson, 1973).

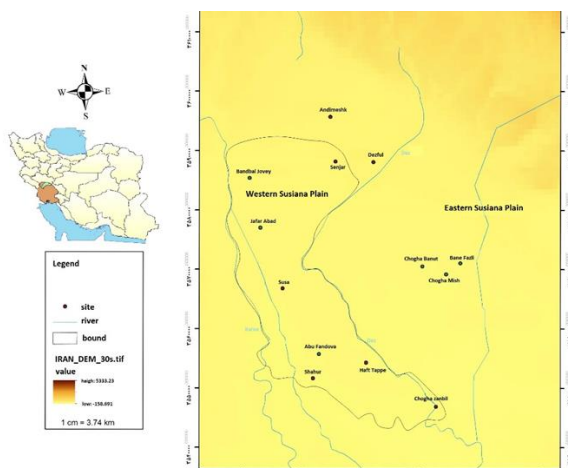


Figure 1. East and West Susiana Plains (Authors).

During the Susa II, simple rough pottery, made with a paste mixed with fine mineral particles, called the BRB, became increasingly prominent (Fig.2 and 3). This pottery appeared on the hill of Susa from layer 22, the frequency of which incrementally increased up to layer 17 (Le Brun, 1978). Evidence suggests that they were probably produced using molding methods. Nearly



Figure 3. Example of a beveled rim bowl (Alizadeh, 2021).

The most important point in this regard, which is also the main topic of the present article, is the close affiliation of this pottery with Uruk culture and the so-called Uruk expansion (Butterlin, 2003; Algaze, 2005; Stein, 1999; Collins, 2000; Rothman, 2001; Postgate, 2002). Its discovery in some ancient sites of Iran, Turkey, Syria, Levant, and even in the eastern parts of the Iranian plateau in areas such as the Miri Qalat site (Besenval, 1994) in Pakistan, without any prior evidence, may be indicative of the cultural affiliation of these regions with those of the Uruk.

II. BRBs in the southwestern region of Iran

The three prehistoric periods of Susa are identified in the following order: a) Susa I, which consisted of layers 27 to 23; b) Susa II, which consisted of layers 22 to 17; and c) Susa III, consisted of layers 16 to 14B. The study of administrative management documents and seal impressions resulted in the following chronological affiliation of Susa II with Uruk: layers 22 to 19 with old Middle Uruk, layer 18 with new Middle Uruk, and layer 17 with new Uruk (Pittman, 2001). In Susa, a large number of BRBs have been obtained. On Acropolis 25 to 22, rough bowl-shaped potteries with protruding edges have been discovered in Susa. Production of this type of pottery in the standard form of BRB continued until the 18th layer. The BRBs discovered in Layer 17 are almost identical to those discovered in Layer 18. However, it should be stated that significant potteries such as water jugs and wide-mouthed urns with carvings have also been found from this layer. From the settlement context of the northern part of the Susa, it can be concluded that it was a completely administrative application. In this section, large quantities of BRBs, small pots, goat and sheep bones, burnt remains of objects, and artifacts such as numerical beads and seal impressions were discovered (Wright, 1985).

Tappeh Jafarabad, 7 km from Susa, along the Shahour River and the Andimeshk-Ahwaz Road, was excavated in 1930, 1934, and 1969-1974 (Dollfus, 1975). This site was deemed one of the first settlements in western Susiana. The first period of Jafarabad coincided with the period of the historical era of Chogha Mish (Early Susa III) and Chogha Sefid (end of the transition phase of Chogha Mami). A pottery workshop has been

found from the second period, which coincides with the Middle Susa III era. The final phase of this period also coincided with the expansion of Chogha Mish as the first large center in Eastern Susiana. The third period of settlement in Jafarabad (Susa A) belonged to a small community that probably existed similarly in other parts of western Susa, such as Bandbal, and these communities depended on a large new center. During this period, Susa came into being, while Chogha Mish gradually lost its significance. Layers 1 and 2 of this area are exactly at the same time as layers 25 to 17 of Susa. Pottery, stone tools, calculi, seals, small figurines, perforated rings, and large decorative studs from this period indicate exchanges with adjacent regions. Large and bulky buildings, seals and seal impressions, buff ware, light gray or very light brown pottery, small cups, large and tall saucers, small bowls, and round and oval crockeries were among the most significant discoveries of the final period of Jafarabad, which were obtained along with BRBs.

The next stage of the development of civilization in the plain of Susa is characterized by cultural interactions between the plains of Susa and southern Mesopotamia, which the Sumerians occupied at that time. The first motifs found from Chogha Mish and Tepe Jouvi closely correspond to those of southern Mesopotamia, hence signifying the beginning of an industrial upturn in the region, which was probably the center of pottery production for subsequent distribution in these lands. The population of the region also increased, as a collective result of which Susa expanded as the largest urban center at the end of the fifth millennium BC.

Chogha Mish is the largest site in eastern Susiana between the two great rivers of Dez and Karun and is located in the south of Dezful (Fig. 4). Regular and extensive excavations have been carried out in 11 seasons (Delougaz *et al.* 1996). The stratigraphy of the Chogha Mish can be cited based on the chronology of the Susiana plain presented by H. J. Kantor and modified by A. Alizadeh (Delougaz *et al.*, 1996). About 250,000 pieces of BRBs were obtained in just two seasons of excavation in Chogha Mish (Alizadeh, 2021). Chogha Mish has an area of 29 hectares in its widest dimension (Alizadeh, 2008).



Figure 4. East Susiana, Chogha Mish (Personal archive of Mr. Seyyed Kamal Asadi Ojaie, 2015).

Many BRBs have been obtained from the layers of the fourth millennium BC in Chogha Mish (Fig. 5 and 6), especially in one of the buildings that was probably a pottery workshop (Alizadeh, 2008). In addition to tokens, a significant number of stamp seals have also

been retained from the corresponding excavations. Overall, direct evidence of the manufacturing of BRBs has been attained in archaeological sites of Iran, including Chogha Mish, around pottery kilns (Delougaz and Kantor, 1996). The discovery of examples of these bowls in a kiln at Tal Abuchizan east of the Gargar River in eastern Khuzestan is of high academic interest (Moghaddam, 2007). Tappeh Jouvi in the north of Tappeh Jafarabad and Bandbal in the north of Tappeh Jafarabad, northeast of Tappeh Jouvi, and on the left side of Andimeshk-Ahwaz Road are other areas in which BRBs have been recovered. Tepe Sharafabad is located in the central part of the north of the western Susiana plain, 15 km northeast of Susa (Schacht, 1975). Most of the evidence is obtained from Uruk structures and buildings that remain in three small areas (Wright *et al.*, 1980). Tepe Sharafabad is located in the central part of the north of the western Susiana plain, 15 km northeast of Susa (Schacht, 1975). Most of the evidence is obtained from Uruk structures and buildings that remain in three small areas (Wright *et al.*, 1980).

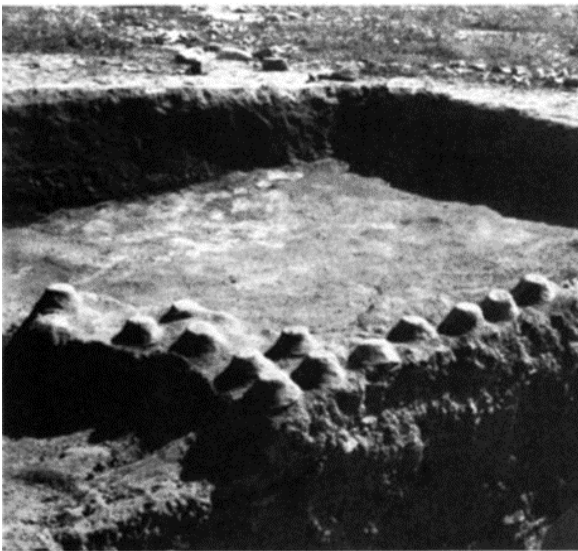


Figure 5: Chogha Mish, Discovery of beveled rim bowls during excavation (Alizadeh, 2008)

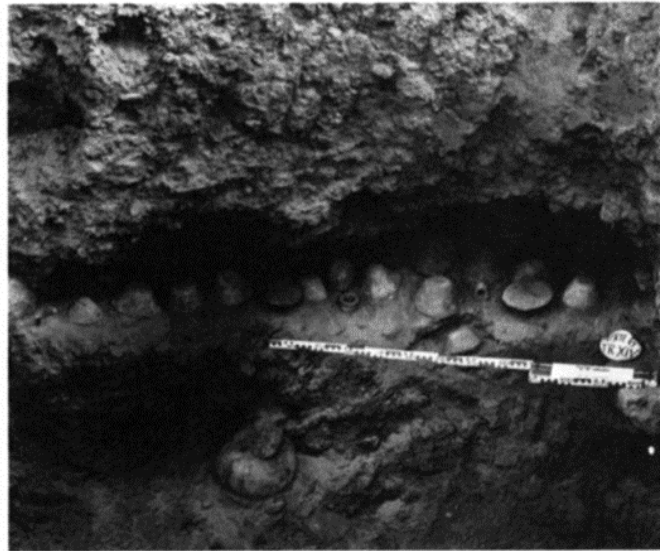


Figure 6: Chogha Mish, Discovery of beveled rim bowls during excavation (Alizadeh, 2008)

III. BRBs in other regions of the Iranian plateau

In north-western Iran, BRBs have been obtained on the surface of 5 sites, including Lavin Tepe (Nobari *et al.*, 2012), Tepe Goman, Tepe Ghalat-e-Walev, Tepe Badam Yar, and Molawosu in the Zab River Basin (Fig. 7 and 8). Although Tepe Badam Yar was chronologically attributed to the Chalcolithic, fragments of BRBs have been discovered therein. The evidence for BRBs, amassing a total of 350 pieces, can be deemed a clear indicator of the culture of the Susa II and Uruk periods. Overall, in the mentioned five areas, BRBs cover various shapes and forms, yet most are shallow and exhibit many similarities with their counterparts in Godin V (Binandeh, 2016).

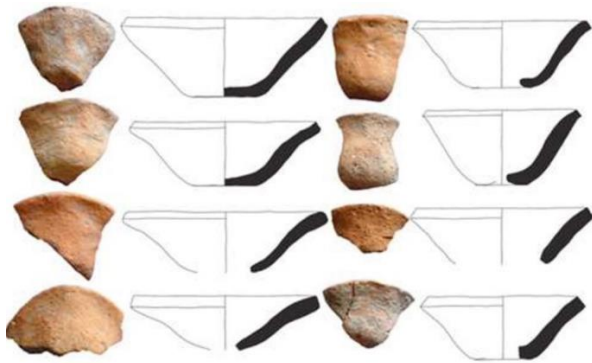


Figure 7: Tappeh Badamyar, beveled rim bowls (Abdi *et al.*, 2019)



Figure 8: Tappeh Badamyar, beveled rim bowls, and other Uruk pottery (Abdi *et al.*, 2019)

BRBs were first excavated from inside the Iranian plateau in 1933 through the excavations of Tepe Sialk (Ghirshman, 1938; Amiet, 1985). In addition, BRBs have also been discovered at the heart of the Iranian plateau in Arisman, in the west of Iran, and the central Zagros in Godin Tepe. It is also noteworthy that discovering this type of pottery in the Central Plateau region of Iran has caused a lot of controversies. Rather Weiss and Young suggested that Godin V was an Uruk community in the western Zagros, which may have housed small groups of merchants instead of highly developed urban centers. In line with this theory, Zagarell stated that this might not be the case for Tepe Yahya and is more applicable to the Zagros area (Zagarell, 1986). Nevertheless, Algaze introduced the findings of Uruk Godin V and Sialk IV as evidence of the Uruk border base in the surrounding areas and did not believe that they were imported from Mesopotamia or Khuzestan (Algaze, 2005). Evidence of late Uruk has been obtained in Godin VI and V in the Kangavar and Mahidasht valleys and most western parts in general. At the end of Godin VI, an architectural site with an oval wall was discovered in Godin, parallel to layers 17 and 18 of the Susa yet deemed contemporaneous with layer 17 in the Uruk. This building seemingly was of administrative, political, and economic nature. A total of 43 intact or broken tablets from the fifth period were obtained therefrom. Although Godin V has produced many similarities in writing methods between

Mesopotamia and Susiana, Godin tablets resemble Susa tablets more closely than Mesopotamian tablets in terms of shape, visual signs, and numerical style (Levine and Young, 1987). A large deal of evidence suggests that Godin-style cylindrical seals were highly similar to the contemporaneous seals of Susa. To these, one can probably add the production of BRBs and large four-handled jars since the frequency of discovered BRBs in Godin is very large, and the transportation of these large bowls from the Susiana plain to Godin was seemingly challenging. As such, it is safe to perceive that local potters were able to produce BRBs and four-handled jars in Godin. These bowls are of Mesopotamian origin (Gopnik and Rothman, 2008).

BRBs have also been reported from the Sialk IV period, which corresponds to the beginning of urbanization. BRBs have been recovered from Tepe Ghabrestan and other distinct pottery (Fig. 9).

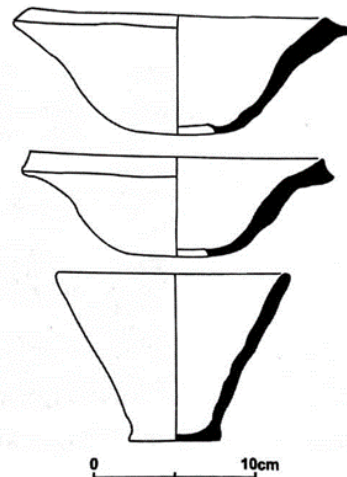


Figure 9: Old Bronze Age beveled rim bowl (Sialk IV) in Tepe Ghabrestan (Majidzadeh, 2008)

Majidzadeh believes that the cultural relations between the Tepe Ghabrestan and Tappeh Godin indicate that the BRBs must have been brought here from the Kangavar Valley. Elsewhere, he suggested that the Tepe Ghabrestan and Tappeh Godin inhabitants may have had similar cultures at the time. Following in the footsteps of Young and Weiss, he considers Godin V to be the main commercial center of the Susa (Majidzadeh, 1976). Although the number of these bowls in the Tepe Ghabrestan is rather small, they still indicate the connection between the Tepe Ghabrestan and Mesopotamia in the Uruk period. The profits and incomes of the inhabitants of the Central Plateau of Iran, those who had access to copper resources and thus could trade with distant communities, may have been received in BRBs (Matthews and Fazeli Nashli, 2004). As previously mentioned, Algaze refers to Sialk IV as the Uruk border base, suggesting that the presence of Uruk BRBs and conical cups on the Tepe Ghabrestan

was a hence by-product of copper mining by Uruk communities along the Khorasan Road (Algaze, 2005).

Along with other ceramics, BRBs have also been reported in Tappeh Shoghali in the east of Dasht-e Rey on the Varamin plain, near the Salt Lake and the communication route Khorasan Bozorg Road in Dasht-e Rey and near Pishva city (Hesari and Akbari, 2007). Moreover, on a particular inscription, three circular prominent crafts best indicate some economic content (Hesari and Akbari, 2007). Arisman was among the most significant centers for the production of pottery and metalwork in the fourth millennium BC on the central plateau of Iran. Arisman has not only been a site for metal mining, smelting, and casting; it also holds evidence of burial and settlement (Matthews and Fazeli Nashli, 2004). In area C in Arisman, several cylindrical seals similar to those discovered from the Sialk and Jemdat Nasr have been reportedly recovered. Despite discovering several tokens, inscriptions are yet to be reported in Arisman. In area C, BRBs and buff wares, painted pottery, and gray pottery have been obtained (Nokandeh 2004). Some of the pottery discovered from Tel Bakun, especially the late Bakun in Fars, are very similar to the vases found from the prehistoric sites of the eastern and western Susiana plain, where various motifs have been observed similar to those of late Bakun dishes in Chogha Mish, Jafarabad, and Bandbal. These include potteries that are very rough in nature and whose rims are beveled.

IV. BRBs in the East and Southeast of Iran

While BRBs have been reported in Susa, Tappeh Godin, Tal Malian, and Tepe Yahya, they are far more scattered from Mesopotamia to the east of the Iranian plateau (Haerinck, 1987). In a similar fashion to the collection of pottery found in layers 22-17 of Susa (Le Brun, 1971), examples of BRBs (Fig. 10 and 11) have been observed in Tepe Yahya, varying in size from small to large (Lamberg-Karlovsky and Tosi, 1973; Potts, 1977).

In 1967, Joseph Caldwell conducted various examinations on Tal-i-Iblis and Tepe Sialk and stated that the presence of BRBs, among other types of pottery, indicated a connection with Mesopotamia, further emphasizing the significance of the Iblis VI as being affiliated with Sialk IV, late Uruk and Jemdat Nasr (Caldwell, 1967). Ghirshman stated that Sialk IV was formed following the expansion of the Elamite government. Evidence strongly suggests the presence of BRBs as a reflection of the connection between the Iranian plateau and Uruk. In a preliminary report on Tal-i-Iblis, Caldwell and Shahmirzadi (1966) argued that the presence of BRBs may have been related to the export of copper from Iblis to Mesopotamia. Algaze (2005) questioned this theory by arguing that the copper

resources of the Tal-i-Iblis and south-eastern Iran were available to the Uruk communities in Khuzestan.

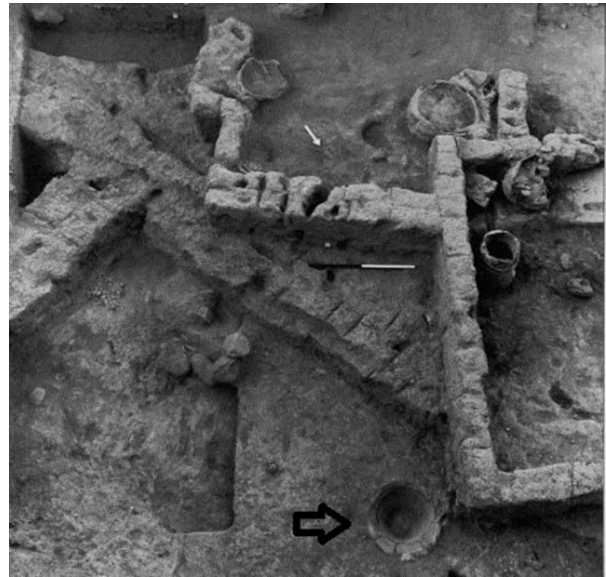


Figure 10. Tepe Yahya, a sample of a beveled rim bowl (Potts, 2001)

He established a relationship between several broken pieces of BRBs of the Tepe Yahya to the exploitation of Kerman copper mines by the Uruk communities of Khuzestan through the South-Central Zagros routes and the Kor River basin (Algaze, 2005). Algaze considers beveled rim bowls as a clear and common symbol of Uruk in Mesopotamia or Khuzestan on the plateau of Iran.

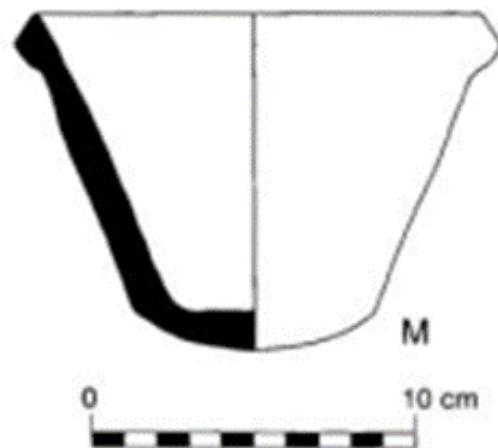


Figure 11: Tepe Yahya, a sample of a beveled rim bowl (Potts, 2001)

Recent surveys and excavations in different parts of Iran have yielded findings that indicate the relationship between south-western Iran and other regions of the Iranian plateau. The Khorasan Highway was a route through which raw materials such as lapis lazuli, agate, and steatite were sent from the east of the Iranian plateau, mines of Afghanistan, Neishabour region, and

around Mashhad, to the major urban centers of the lowlands of Khuzestan and ultimately to Mesopotamia. The raw materials of some cities located along these trade routes, such as Shahr-i Sokht, Tepe Yahya, and Hesar, were processed and hence transferred as semi-finished goods to urban centers in Susiana plains and southern Mesopotamia. In this area with such an extent, only in Tappeh Farhadgerd (near Fariman) a rough piece of this pottery has been discovered. It has been since classified as a beveled rim bowl and has been considered a sign of a commercial base in this region (Vahdati, 2015).

However, recent excavations at Kaleh Kub, in Sarayan of South Khorasan, revealed that this ceramic distribution seems more geographically extensive than previously thought (Fig. 12 and 13).

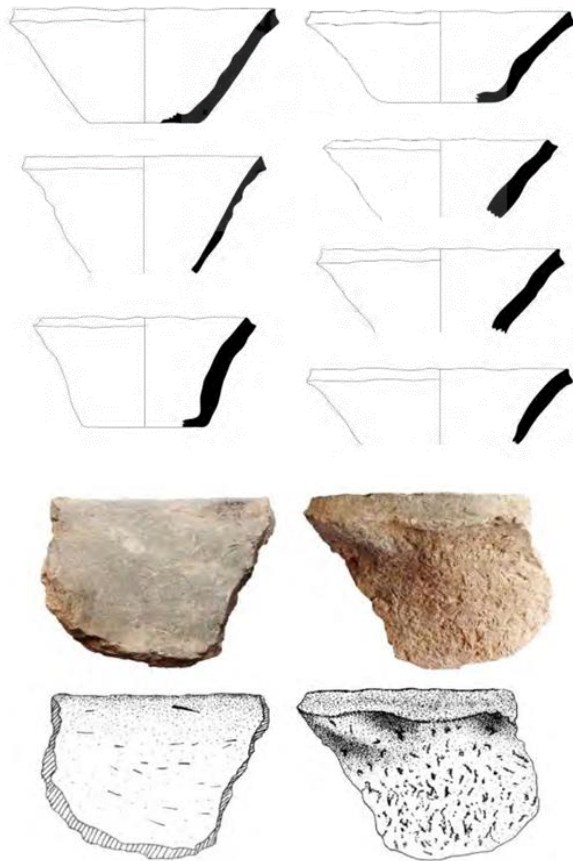


Figure 12: Sarayan, Kaleh Kub site, beveled rim bowls (Azizi Kharanaghi *et al.*, 2020)

This site is located east of the Iranian plateau, about 200 km from the modern Iranian-Afghan border (Azizi Kharanaghi *et al.*, 2020). The distribution of BRBs indicates the widespread of this pottery among the rivers and plateaus of Iran from southern Turkey to southwestern Pakistan (Mutin, 2013).

Overall, in terms of form, color, and motif, the pottery of the fourth millennium BC obtained from Kaleh Kub can be divided into several categories: BRBs,

rough Banesh trays, tubular pottery, nose handle jars, string-cut base bowls, gray pottery of the fourth millennium BC, and buff wares with simple black and brown patterns (Azizi Kharanaghi *et al.*, 2020).



Figure 13: Sarayan, Kaleh Kub site, beveled rim bowls (Azizi Kharanaghi *et al.*, 2020)

V. Discussion and Conclusion

A brief study of BRBs reveals that they were produced in more or less predetermined sizes and the capacities of these bowls were 90%, 65% and 45% of one liter. Considering the hypothesis of their use as a rationing container, the capacity of these bowls respectively pertained to a complete ration, three-quarters of ration and a half of a ration. Nevertheless, subsequent quantitative analyses by other researchers, such as Thomas W. Beale, cast doubt on the three-model ration bowl hypothesis (Beale, 1978). Based on what Beale considered the degree of volume or size variability in the samples, Anne Miller suggests this correlation in volume and size concerning the pottery found in Foroukhabad (Miller, 1981). Interestingly, the variation in the volume of the BRB is more consistent with the evidence discussed earlier, and therefore their actual size remains unclear (Englund, 2001).

On the other hand, the variation in the volume of pottery, which was previously considered a result of different manufacturing methods, corresponds closely to the grading in the grain measurement system. Suppose the hypothesis put forward by Englund, in that the bowls were used as measurement containers for pouring rations into plates or bowls, is to be accepted. In that case, other assumptions must be discarded as inadmissible.

Nevertheless, the exact usage of BRB is yet to be determined, and different researchers have proposed different theories based on the use and application of this pottery. Overall, BRB were daily utensils that ordinary workers made rather than professional potters (Gopnik and Rothman, 2008). In sites such as Godin, Sialk, and Tepe Yahya, where BRB remains are found more than in other sites, the hypothesis of them being used as measurement containers seems more reasonable. Considering that the first site was a production and industrial workshop, and the second was a site that extracted ore, they could have been ration

containers. In this regard, Johnson suggested an efficient system for the production of these bowls in the found areas based on the evidence of the production of BRB in the main urban centers, especially in southwestern Iran during the fourth millennium BC (Johnson, 1973). However, in Iran, evidence of applying these potteries as baking utensils or other applications remains inconclusive and requires further analysis.

The abundance of this pottery has led researchers to consider them disposable utensils in ancient times (Alizadeh, 2021). BRB outside the Susiana plains, and particularly in Marvdasht (Tal-e Malyan, Tal-e Koreh and Tol-e Gap Kenareh) (Sumner, 1986; Khanipour *et al.*, 2015; 2017), when found, are either sparsely populated or evenly distributed in the area. Anomalies in their distribution, however, can be deceptive. While the presence of BRB has been reported in Susa, Godin, Tal Malian, and Tepe Yahya, they seem to be far more scattered in eastern Mesopotamia than previously thought (Haerincq, 1987). As noted above, Caldwell (1967) has generally stated that the presence of BRB, among other ceramics in areas other than Susa, suggests an association with Mesopotamia. BRB has been found in such abundance in the southern areas of Mesopotamia and the Susiana plains that Alizadeh (2021) has used the proverb “a finger in every pie” to refer to them. Even though areas such as Chogha Mish alone contain 250,000 pieces of BRB, areas such as Tepe Yahya in Kerman have only 5% of this type of pottery, an issue that requires extensive follow-up examination.

According to the excavations carried out in the southwest and the Iranian plateau and considering the findings achieved from diggings in different areas, the presence of BRB in the different archeological sites is indicative of the relationship between the Iranian plateau and the Uruk in the fourth millennium BC (Caldwell and Shahmirzadi, 1966). In the VI and V periods of Godin, in the Kangavar and Mahidasht valleys, and most western regions, there has been extensive evidence from the late Uruk indicating the presence of the people of the low, i.e., the Susiana plains and Mesopotamia, in the highlands. Evidence includes Godin cylindrical seals that mimic seals from the Susa II, BRB, and large four-handled jugs. These bowls first appeared in the Early Banesh phase and, of course, have

been observed to a lesser extent in the Middle Banesh phase (Nicholas, 1980), which is perceived to be of the same era as that of the Susa II. In Foroukhabad, BRB was common in the Middle Uruk but continued until the late Uruk and eventually declined during the Jemdet Nasr Period (Wright, 1981). Although some of the characteristic pottery forms of Susa II appear in the Middle Banesh phase, similar Middle Banesh forms appear only in Susa IIIA. The date is strongly substantiated by the inscriptions and seals (Nicholas, 1980; Sumner, 1986).

Ghabrestan IV4-6 is equal to Sialk 6-7III (Majidzadeh, 1981). The similarities of the pottery found in Ghabrestan IV4-6 can be affiliated with the Godin VI and VI/V horizons (Young, 1969). On the other hand, Algaze called Sialk IV an Uruk border base and has deemed the reason for the presence of BRB and Uruk conical cups on the Tepe Ghabrestan to be the involvement of people from the low plains (southwest of Iran and Mesopotamia) in exchanges and trade via Khorasan Road, further arguing that such bowls are a clear symbol of Uruk elements from Mesopotamia or Khuzestan from the era of Susa II (Algaze, 2005).

Now the main question persists as to whether such a connection can be established between the presence of these bowls in the eastern and south-eastern areas of the Iranian plateau and even beyond such borders with such a system, although the connection of Uruk features, including BRB with the administrative and labor management system. The rational response would be that, given the current evidence, establishing such a connection would be bordering on the impossible. Although the east and southeast of the Iranian plateau hold various metal mines and precious and semi-precious stones that confirm the existence of a management system in establishing a production chain and employing different workers to extract and process the relevant mines and raw materials, the corresponding office-related administrative, numerical tools, and office recording supplies are so few and far between that it simply makes it impossible to back this theory for these areas. However, future discoveries in these areas should seek to analyze the presence of BRB regardless of other evidence.

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