

THE ORIGIN OF THE SERPENT MOTIF IN CULTURAL MATERIALS OF SOUTHEASTERN IRAN DURING THE THIRD MILLENNIUM BC: A SIGN OF RELATIONSHIP WITH ELAM AND MESOPOTAMIA

Hossein MORADI¹[™]

¹ PhD in Archaeology, University of Tehran, Iran; Assistant Director of Shahr-i Sokhta Expedition, Independent Researcher, (h_moradi57@yahoo.com)

Received: 21 August 2023

Accepted: 28 November 2023

Available online: 20 December 2023

Abstract: In the case of the Archaeology of southeast Iran, many archaeologists have paid attention to the objects that were produced there and considered them as commercial items in Susa and Mesopotamia. This commercial relationship, in its trans-regional form, caused the transference of beliefs and Ideologies. The evidence of such relationships can be seen in the evidence of Tepe Yahya, Shahdad, South Konar Sandal, and Shahr-i Sokhta all are located in southeastern Iran. However, there is some evidence of a kind of relationship between Mesopotamia and the inhabitants of southeast Iran, but there is no evidence of direct contact between them. Based on the classic interpretation of the intercultural material it seems that this relationship was not limited only to raw or processed materials and meantime some ritual and ideological notions were transferred directly or indirectly between these two worlds. A good example is the presence of the serpent motif in southeast archaeological sites in Iran that comes with different forms and concepts over seals, metal vessels, painted and plastic pottery, and other products of the existing cultures like Tepe Yahya, Shahdad, Jiroft, Bampur, and Shahr-i Sokhta. The serpent-like motifs have been seen from the 6th and 5th millennium BC as a sign or symbol of the underworld god. Perhaps no other motif like the serpent can represent the transference of beliefs and thoughts from low to high lands and it seems as we move farther from the borders of cultural Iran, it declines in importance and presence.

Keywords: Bronze Age, Southeast Iran, Susa, Mesopotamia, Serpent motifs.

چکیده: در مورد باستان شناسی جنوب شرقی ایران، بسیاری از باستان شناسان به اشیایی که در آنجا تولید می شد توجه کرده و آنها را از اقلام تجاری شوش و بین النهرین دانسته اند. این رابطه تجاری در شکل فرامنطقه ای خود باعث انتقال باورها و اید تولوژی ها شد. شواهد چنین روابطی را می توان در شواهد تپه یحیی، شهداد، کنار صندل جنوبی و شهر سوخته مشاهده کرد که همگی در جنوب شرقی ایران قرار دارند. شواهدی دال بر نوعی رابطه بین بین النهرین و ساکنان جنوب شرقی ایران وجود دارد، ولی شواهدی دال بر تماس مستقیم بین آنها وجود ندارد. بر اساس تفسیر کلاسیک از ماده بین فرهنگی به نظر می رسد که این رابطه تنها به مواد خام یا فرآوری شده محدود نبوده و در این میان برخی مفاهیم آیینی و اید تولوژیک به طور مستقیم یا غیرمستقیم بین این دو جهان منتقل شده است. نمونه بارز آن وجود نقش مار در محوطه های باستان شناسی جنوب شرقی ایران است که با اشکال و مفاهیم مختلف بر روی مهرها، ظروف فلزی، سفال های منقوش و نقش افزوده و دیگر محصولات فرهنگ های موجود مانند تپه یحیی، شهداد، جیرفت، بمپور و شهر سوخته آمده است. نقوش مار مانند از هزاره ۶ و ۵ قبل از میلاد به عنوان نشانه یا نماد خدای عالم اموات دیده شده است. شاید هی موجود مانند تپه یحیی، شهداد، جیرفت، بمپور و شهر سوخته آمده است. نقوش مار مانند از هزاره ۶ و ۵ قبل از میلاد به عنوان نشانه یا نماد خدای عالم اموات دیده شده است. شاید هیت توش دیگری مانند می ایران گرون در سواه در ایند تپه یحیی، شهداد، جیرفت، بمپور و شهر سوخته آمده است. نقوش مار مانند از هزاره ۶ و ۵ قبل از میلاد به عنوان نشانه یا نماد خدای عالم اموات دیده شده است. شاید هیچ نقوش دیگری مانند مار نتواند بیانگر کیدواژه: عصر مفرغ، جنوب شرقی ایران، شوش، بین النهرین، نقشمایهٔ مار

I. Introduction

Some archaeologists believe that the archaeology of southeast Iran has been over-focused on trading issues (Kohl, 1978: 463) and some use the term "imposition of trade insanity" for the archaeology of the Iranian plateau (Lamberg-Karlovsky, 1977: 40). This is because many archaeologists have paid their attention to statusbearing objects that were produced in southeast Iran and considered them as commercial items in Susa and Mesopotamia. This commercial relationship, in its trans-regional form, caused the transference of beliefs and Ideologies (Kohl, 1979: 77). However, it appears that during the late 4th and early 3rd millennium BC, the availability of valuable raw materials in the Iranian plateau turned Mesopotamian city-states to establish commercial relationships with this region (Beale, 1973: 133). This can be easily apprehended through relics that have been found in the Ur royal cemetery and other Mesopotamian cities such as chlorite vessels, semiprecious stones like lapis-lazuli, etc. (Majidzadeh, 2002; Fig. 160-162, 326-327). Meanwhile, Susa, as an intermediary between the Iranian plateau inner regions and Mesopotamia had a lucrative commercial activity in geopolitics of the region.

The evidence of such relationships (not only exchange relationships) can be seen in proto-Elamite tablets, cylindrical seals, and beveled rim bowls of Tepe Yahya (Lamberg-Karlovsky & Potts, 2001: 195-199) and proto-Elamite tablets and cylindrical seals impressions at Shahr-i Sokhta (Tosi, 1974a: 13; Moradi, 2022; Sajjadi & Moradi, 2022). Based on different studies, three valuable natural materials were exported to Elam and Mesopotamia: chlorite and copper from the Kerman region (Beale, 1973: 133) and lapis-lazuli from Badakhshan in Afghanistan through Shahr-i-Sokhta (Tosi, 1974b: 155-157). There has been some evidence of a kind of relationship between Mesopotamia and inhabitants of southeast Iran

(Pitman, 2008; Ascalone, 2020), yet, the presence of Susa artifacts such as proto-Elamite tablets (Amiet & Tosi, 1978: fig. 16; Lamberg-Karlovsky & Potts, 2001: 195) in these sites is much more prominent than direct cultural signs of Mesopotamia.

It seems that this relationship was not limited only to raw or processed materials and meantime some ritual and ideological notions were transferred directly or indirectly. A good example is the presence of the serpent motif in southeast archaeological sites in Iran that comes with different forms and concepts over seals, metal vessels, painted and plastic pottery, and other products of the existing cultures like Tepe Yahya, Shahdad, Jiroft, Bampur, and Shahr-i Sokhta.

II. Mythological Background of Serpent Motifs

As a Mythological background, the serpent, in many ancient cultures, is one of the oldest animal motifs with various meanings including immortality, fecundity, and in some cases a symbol for other world's spirits (Frazer, 1919: 66). The serpent was a symbol for water among farmer societies of the ancient Middle East (Golan, 1991: 205) and the figure of two inter-twisted snakes is a sign of fertility, welfare, and prosperity (Van Buren, 1934). The serpent-like motifs have been seen from the 6th and 5th millennium BC as a symbol of the underworld god (Leak, 2007: 182-183). Perhaps no other motif like the serpent can represent the transference of beliefs and thoughts from low to high lands and it seems as we move farther from the borders of cultural Iran, it declines in importance and presence.

III. The Evidence of Serpent Motif in Mesopotamia

The serpent-like motifs have been reported much less in the cultural materials of Mesopotamia compared to the southwest and center of the Iranian plateau during the 6th and 5th millennium BC. It is most likely that, in Mesopotamia, the first serpent motif was found over a fragment of Halaf (5000-4000 BC) pottery, showing a two-headed coiled serpent (Mallowan and Rose, 1935: fig.77). The important point is that this fragment is the only shard in Halaf pottery assemblage bearing the serpent motif (Fig. 1A). The fragment, probably, was not found in the stratigraphic context and the archaeologist does not give any comment about this issue (Maiseles, 1999: fig. 3.2). The main evidence about the presence of the serpent motif in Mesopotamia belongs to the Jemdet Nasr period (Rankin, 1959: 28-33) which together with proto-cuneiform tablets and beveled rim pottery have been seen all through the Iranian plateau and Mesopotamia. In the cylindrical seal collection of the Morgan museum that is from late Uruk IVA (3200-3000 BC), there is a motif of two doubleheaded, inter-twisted serpents (Frankfort, 1939: 20) (Fig. 1B) that can be compared with proto-writing motifs of southwest Iran and Choghamish from early literature period (Delougaz & Kantor, 1996: Plt.27). Other older examples of this serpent-like motifs have been Susiana plain (Susa A/I) from 5th and 4th millennium B.C (Pittman, 2013: 297).

Meanwhile, there is no obvious trace of the serpent motif in the cylinder seals of the Diyala region from the protoliterate period (3400-2900 BC), north of Iraq (Frankfort, 1955). However, from the Early Dynasty III (2600-2350 BC) there is some evidence that can be interpreted as a stylistic serpent motif¹ (Ibid: Plate 39: 416). Unlike Mesopotamia, in Susa and southwest Iran that serpent motif can be seen individually or in combination over seals and seal impressions, here it is totally absent and only from early dynastic periods I-II (2900-2600 BC), we start to see serpent motif over the seals. Among different motifs, the motif of a doubleheaded serpent with two inter-twisted bodies emerges for the first time in this period and perhaps it is a prologue for the motif to become a symbol for the Neo-Sumerian (2150-2000 popular BC) god, Ningizida². The style of this seal is similar to Jiroft's chlorite vessels from the mid-3rd millennium B.C (Ibid: Plate, 24: no. 244). On another seal from the early dynastic period II, there is a serpent with five heads with a man in front of it holding two other serpents (Ibid: no. 497). This picture is complete with another seal from early dynastic period III over which a man stands full-faced holding two serpents in his hands (Ibid: no.535). This motif had already been seen in a seal from Susa A and Hakalan & Parchineh cemeteries (White & Dyson, 2003: 37). Furthermore, in these works, we face a double-headed serpent with an upward twisted body in the Akkadian period (Ibid: nos. 590-593).

The serpent motif can be found in large numbers over proto-literate seals of Tepe Gawra. The emergence of this motif in Tepe Gawra, as a key site for understanding the cultural process in northern Iraq, is quite remarkable (Speiser, 1935). Many seals and pottery-bearing serpent motifs similar to Susa's examples have been found from Gawra VII-XI (3300-3000 BC) (Speiser, 1935: Pl.LXXVI)³. For instance,

³ The stratigraphy of Tepe Gawra published by Speiser 1935 are unreliable. For new chronological proposals see:

¹ Only two pieces of cylinder seals impression with a realistic serpent motifs can be seen in the collection of ED from Dylala region that not linked to reliable chronology of ED (See Francfort 1955: plates 47 and 51).

² NIN-G□ IŠ-ZID-DA

other specimens belonging to Gawra IV-VI (3000-2250 BC) have plastic serpent motifs over the body while the heads are lying on the rim (Ibid: Pl.LXXVI, nos. 7,12,13). Gawra VI is concurrent with early dynasties. On the other hand, White and Dyson hinted at great similarities among seals of Hakalan and Parchineh in Lurestan (Zagros Mountains) and Gawra XII (White & Dyson, 2003: 100). It appears that the presence of such seals in the Iraqi Zagros foothills was mostly under the influence of eastern regions and Iranian Zagros rather than Mesopotamia.

Southern Mesopotamia, unlike its north, has a completely different history regarding the serpent motif. In this region, the serpent motif apart from its meanings and mythological or legendary backgrounds is a symbol for Ningizida that emerged from late Uruk (Frankfort, 1939: 20) and flowered in the Neo-Sumerian period. Indeed, the application of inter-twisted serpents began in late Uruk and transferred to the early Akkadian period (Lambert, 1966: 68) and finally in early Sumer, after the invasion of Guteans⁴ to Mesopotamia, King Gudea popularized it as the symbol of his favorite god, Ningizida (Ward, 1910: 131; Van Buren, 1934: 73; Buchanan, 1971: 5). It is noteworthy that Guteans were Zagros dwelling tribes who described by Sumerians as ferocious, savage, serpents of the mountain, and sacrilegious people (Cooper, 1983:31) and only after their hegemony over Sumerians, Gudea fostered serpent motif as the symbol of the most favored god of Ur III (Ningizida) (Buchanan, 1971: 5). Guteans ruled over Mesopotamia from 2200-2100 BC and there are 21 Gutean names in the list of Sumerian kings (Potts, 1999: 129). Apparently, Sumerian gods as serpents were institutionalized in south Mesopotamia during this period (Ward, 1910: 131). Although Ningizida is a second-degree god in the order of Sumerian gods, in the Neo-Sumerian period earns a high status and is portrayed as a serpent (Frankfort, 1934: 8-13) and stands next to the first-degree gods, but later attracts less attention and at the end vanishes during the Babylonian and Assyrian period (Van Buren, 1934: 61-70) (Fig. 1C).

According to Amiet, Guteans transferred the seal engraving style with an expression of the master of animals to Mesopotamia (Amiet, 1993: 31). Before that, depicting the figure of gods had no place in Mesopotamian art, and the master of animal's motif in its mythological background emerged on the cylindrical seal of Susa A from 5th and 4th millennium B.C (Amiet, 1993: 41; Majidzadeh, 2002: 4). Also, the picture of a hero controlling serpents first appeared in Iranian art

Rothman, Tepe Gawra. The Evolution of a Small Prehistoric Center in Northern Iraq, University Museum Monograph, Philadelphia 2002. iconology during the 5th millennium BC (Pittman, 2015:37). In Susa A/I the serpent motif has been seen over pottery frequently and the fine snifter of Susa A/I in the Louvre museum is a good example of the art of depicting serpent in 5th millennium BC (Hyut, 2010: Fig 123). It can be suggested that this motif penetrated into Mesopotamian art from the southwest and west of Iran. Hints, also, points out that Mesopotamians were unfamiliar with the motif of the serpent with a human head and its ritual concept, and suggests it first emerged in Elam (Hints, 1992: 47-48).

Finally, based on the existing evidence about Mesopotamian Art, it seems the emergence of the serpent motif in Mesopotamia dates back to the late Uruk period or 3300 B.C and from this period on the double-headed, inter-twisted serpents appear in the region's art. In the southeast and central Iranian plateau, the serpent motif probably appeared in Sialk II and then concurrently in Susa A/I, Bakun A, and Sialk III during the 5th millennium BC. This is an indication of the importance of this motif in material relics and beliefs of human societies of southwest and central Iran that will be discussed in the following sections.

IV. The Central Plateau, Susa Plain, and Southwest Iran

In the central plateau and southwest Iran, the serpent motif had a quite different situation than in Mesopotamia. There is remarkable evidence showing the importance of this motif in those regions and when compared with Mesopotamia we are dealing with extensive and various applications of this motif over pottery and seals. This situation continued until after the proto-literate period and the constant and complicated contacts between the west and southwest Iran with Mesopotamia.

The first evidence should be tracked in Sialk II (5500-5000 BC) pottery. It appears that in Sialk II the origin of the serpent is from wavy vertical lines paired next to each other (Ghirshman, 1993: 57). According to Ghirshman, Sialk II continued its evolution process without any influence from contemporaneous cultures and this stage was part of its normal progress (Ibid: 80). He rejects the presence of any foreign element completely and adds contemporaneous cultures were not acquainted with the Idea of the depiction of the animals creatively and artistically (Ibid: 82) and this period, chronologically, precedes the realistic depiction of animals in Susa A (Ibid: 83). In Sialk III, those animal motifs are repeated copiously over pottery and therefore Sialk III can be considered as the evolution

⁴ Gu-ti-um

stage of the previous period. In Tepe Qabrestan, north of Sialk, the serpent motifs have been seen numerously in a horizon concurrent to Sialk III (5000-4500 BC) (Talai, 2011: 369, Fig. 89). To the west, the seals of Godin VII show a close relationship with Sialk III4-5 and the hook-like handle vessels are comparable with Godin VII specimens (Ibid: 143) showing the relationship between Sialk and Godin (Zagros). The form of some Sialk III4-5 is comparable with Susa A Seals (Ibid: 37) indicating relationships with southwest Iran.

The first evidence of the serpent motif over cultural materials of southwest Iran comes from Susa A/I (4200-3800 BC) (Alizadeh, 2010: table. 1). The motif can be seen in Susa A/I (Vanden Berghe, 1959: fig. 201) and Tal-i-Bakun A (Alizadeh, 2006: fig. 51) under the influence of middle and late Susiana pottery (Alizadeh, 1992: 22-26) Showing the stylistic ties with Susa, southern and central Zagros(Alizadeh, 2003: 88) (Fig. 2A). The relationship between Susa A and Mesopotamia is also examinable via their seals. Over a stamped seal from Susa A, a man with an Ibex head holds two serpents in his hands and Pittman believes this is the first time this motif to emerge in the Iranian plateau (Pittman, 2013: 37) (Fig. 2B). The relationship between these seals and Lurestan is so prominent that Amiet studied the seals of Susa A and Lurestan as a distinct Seal-making tradition (Amiet, 1972: 5-36).

The iconography of gods using the serpent symbol is considered a characteristic of the art in Elam and Susa plain by Hinz and he introduces serpent and woman as two Elamite religious elements (Hints, 1992: 48). Furthermore, in Hakalan and Parchineh cemeteries there is clear evidence for the presence of different pottery styles such as Mesopotamia, Susa, and central plateau suggesting multilateral relationships of the herders and pastoralists of this part of the Zagros Mountains (Alizadeh, 2013: 62). It is likely that due to high similarity between seals of this region and Gawra XI-XII in northern Mesopotamia and late Susiana in the southern side of the Zagros range, Hakalan and Parchineh had a key role in transferring beliefs and artistic traditions in the Middle East, especially from low lands of southwestern Iran to the northern Mesopotamia.

Another piece of evidence that can be useful in rooting out the origin of the serpent motif and many other prevalent motifs in Uruk art is the collection of the seal impressions from the 6th millennium B.C up to Susa A/I and early and middle Uruk that has been discussed in a paper by Pittman, comprehensively. (Pittman, 2013). She believes that the art of engraving seals with the scenes of legendary stories, figures of gods, and mythological characters first emerged in Susa A/I and served as controlling sources, then traveled to southern Mesopotamia and during the late Uruk period became the main engraving style over the seals (Ibid: 294). She mentions that the specific iconology of Uruk (discussed above) appeared for the first time on seal impressions of the Susa plain during the 6th millennium BC in places like Jafar Abad and Jooy (Ibid: 296). It was then completed during Susa A/I and in early and middle Uruk served for administrative purposes finally the Jemdet Nasr and late Uruk penetrated into south Mesopotamia. These developments continued until the beginning of the early dynasties I and at this period that iconographical style got fixed and earned the Mesopotamian identity. Indeed, the art of engraving seals which was customary in Susa plain was totally absent among Halaf and Ubaid relics (Ibid: 296). In the sequence of Susa Acropolis I.27 which is concurrent with Susa A/I, the first evidence for the application of stamp seals in administrative affairs is a broken seal impression showing a serpent-like god (Ibid: 297) (Fig. 2B). The new art of engraving in the Susa II period applied for cylindrical seals and the scenes are similar to Susa A/I (Le Brun, 1999). Amiet prompts that the art of engraving over the seals of late Uruk in Mesopotamia has indeed its origin in the Susa Plain, specifically Susa A/I (Amiet, 1972: 37) because not only the pottery of Susa A/I has realistic animal motifs of serpents and other reptiles but also the seals depict different animals including serpents in a mythological context that made many scholars believe this representation for the first time emerges in the Iranian plateau (Amiet, 1993; Majidzadeh 2004; Pittman 2015) and is absent in the Mesopotamia at the same time (Halaf and Ubeid).

Moreover, a seal impression with the serpent-like motif has been unearthed from Acropolis I.20 which is older than the king-priest motifs of Uruk and seems to be a pre-depiction of this god in the art of the Uruk and Sumer (Pittman, 2013: 299). Among pottery relics of Choghamish, the motif of two inter-twisted serpents can be seen in the mid-4th millennium B.C which might be a pre-depiction of the god Ningizida (Delougaz and Kantor, 1996: Plts. 27,156,158) (Fig. 2D). A plastic serpent over the pottery (Ibid: Plt. 28) and a serpent attacking a goat (Ibid: Plt. 26) are two other examples from Choghamish in the proto-literate period that also have been seen in Susa A (Delougaz and Kantor, 1996: Plt.142.F; LeBerton, 1957: fig.8. nos.7and11) and Uruk (Rashad, 1990: Abb. 5-8) seals (Fig. 2C).

Dittmann believes that depictions used over the seals of the Susa plain during the 4th millennium B.C (Susa A/I) are related to the economic situation of the region. He recognizes many of these motifs that later became prevalent during the late Uruk period in south Mesopotamia as Susa style from southwest Iran and introduces only two of them as inter-cultural motifs (Dittmann, 1986).

V. The Serpent Motif in Southeast Iran

Southeast Iran was increasingly in contact with Elam and Mesopotamia through inter-regional commerce that aimed to transfer luxurious goods and rare raw materials from the inner lands of the Iranian plateau (Alden, 1982: 613). During the first half to the mid-3rd millennium B.C, trans-regional commerce linked the human societies of Mesopotamia and the Susa Plain with the inner regions of the Iranian plateau which were rich in raw materials and natural resources (Beale, 1973: 143-5). The high demand for these goods such as chlorite vessels, semi-precious stones like agate and lapis-lazuli, and copper objects pushed the wealthy Elamites and Mesopotamians to trade with faraway lands. The abundance of the serpent motif among artistic works of South Konar Sandal and Shahdad, similarities between Khafajeh and South Konar Sandal and Tepe Yahya chlorite vessels (Amiet, 1974: 106; Majidzadeh, 2004: 7); human figurines buried with corps in Shahdad (Pittman, 2013: 37); and tablets of Konar Sandal the south which are compositions of similar Elamite and local specimens (Desset, 2014: 92), are powerful aspects of the relationship with Susa plain and Elam. The reflection of this operation has been recorded in the Arata myth in Mesopotamian sources (Majidzadeh, 1976: 105-107). It appears that some Ideologies, beliefs, and thoughts have been transferred through this inter-regional trading (Kohl, 1979: 76).

In southeast Iran, the serpent motif can be seen for the first time over Iblis 0 or on the rough Lalehzar pottery (4300-4000 BC). Over two pottery fragments of Lalehzar type, the plastic serpent motifs are shown both horizontally and vertically (Caldwell, 1967: fig.3). The Lalehzar phase (4300-4000 BC) in Iblis is concurrent with Yahya VI and early Yahya V (White & Dyson, 2003: 72). The style of these pottery is comparable to Bakun B and has been compared by the excavator to the pottery of this site located in Fars province (Ibid:120). In Tal-i-Iblis these two fragments from the 5th millennium BC are the only ones bearing the serpent motif and unlike the Susa plain the motif kept its presence up to the Neo-Elamite period, there is no trace of this animal over the pottery of the following periods (Fig. 3A).

There has been no sign of serpent motif in older phases of Tepe Yahya (Lamberg-Karlovsky & Beale, 1986), but from Yahya IVC that is contemporary to Jemdet Nasr (late 4th and early 3rd millennium BC), there is a great deal of evidence such as cylindrical seals and pottery showing this motif over artistic works. For instance, a plastic serpent motif over the body of a buff ware from the IVB period (Lamberg- Karlovsky, 1970: fig. 28) and a pottery fragment with a serpent that its head approaches the tail, are considerable examples of this period (Ibid: fig. 32). An etched serpent motif over a pottery fragment from Yahya IVB5 is another example worth mentioning (Lamberg-Karlovsky and Potts, 2001: fig. 4.30). From the same period in Yahya, also serpent-like motifs over pottery have been found (Ibid: figs. 2.22, 7.1). The serpent motif has also been seen in Yahya IVC on many chlorite objects like vessels and weights (Ibid: figs.5.16,9. 9, 9.14) (Fig. 3B).

A cylindrical seal from Yahya IVB shows two faceto-face deities and underneath them, there is a serpent with two inter-twisted bodies and two heads (Pittman, 2001: fig.10.48). Stylistically, it is similar to Mesopotamian seals and can be attributed to the early dynastic II period (Potts, 1981: 135-136) (Fig. 3C). This seal has been found in the so-called Persian Gulf room and Kohl recognizes the style of the chlorite vessels of this room as inter-cultural style (Kohl, 1978: 464). Amiet believes that the styles of both seal and chlorite vessels are inter-cultural and reflect the influence of Akkadian and southeastern Iranian art (Amiet, 1974: 106). He introduces the seated deity as Ningizida, but Potts rejects this opinion and reminds that the Ningiszida symbol is a man, yet the deity in Tepe Yahya's seal is a woman (Potts, 1981: 138). Indeed, the cylindrical seal of Tepe Yahya has an Iranian style, and only some Mesopotamian artistic elements were included in it (Ibid: 138). Finally, it is concluded that based on existing evidence the seal-maker of Tepe Yahya, having a full understanding of the Mesopotamian beliefs, made this seal with an Iranianadopted style (Ibid: 140) which shows the cultural relationships between Southeast Iran and Mesopotamia. It should be noted that after the conquest of Akkadians over the Elam and Susa plain many Sumerian and Akkadian gods were worshiped in their original or Iranian forms (Ibid: 141). This seal reflects the extensive relationships between Tepe Yahya and Mesopotamia and Elam during the 3rd millennium BC. The other seal found in Jalalababd (Fars Province) shows a strong relationship with the eastern Iran plateau, Central Asia, and the Indus valley (Ascalone, 2008: 254)

important Another archaeological site in southeastern Iran that presents numerous serpent-like motifs in its cultural material is Shahdad. The serpentlike motifs can be seen in a realistic style over pottery, metal works, and chlorite (Hakemi, 1997). As an example, there are plastic serpent motifs over the pottery of Shahdad which are similar to Iblis Lalehzar (Caldwell, 1967: fig. 3) but date back to the 3rd millennium BC (Hakemi, 2006: 667). Another example is a plastic motif of a winder serpent around the belly of the vessel with the serpent taking its tail in the mouth (Ibid: 777). The serpent motif can also be seen over bronze objects of Shahdad (Meier, 2008: Tafel 81) for instance a coiled serpent over a bobby pin (Hakemi, 2006: 751) or a man holding two serpents in his hand again over a bobby pin which resembles Elamite, Mesopotamian and Konar Sandal specimens (Hakemi, 2006: 789) (Fig. 3D). There is also a serpent over the bronze plaque or banner of Shahdad (Ibid: 747) and a coiled serpent over a model building made out of chlorite (Hakemi & Sajjadi, 1988: fig.6) (Fig. 3E). A similar motif can be seen inside a bronze vessel from Shahdad (Ibid: fig. 3). The stamp seals of Shahdad contain depictions of animals like goat, serpent, and birds and the cylindrical seals show mythological, astrological, animal and plant motifs (Ibid: 146) (fig. 3F).

Konar Sandal on the Halil bank, Kerman province presents valuable evidence of the 3rd millennium BC art of southeast Iran (Majidzadeh, 2004). The most considerable works in Jiroft include engraved and inlaid motifs over the body of vessels and chlorite objects that date back to the mid-3rd millennium B.C (Majidzadeh, 2004: 3). These motifs mainly show the master of animals including the encounter of two wild animals like eagle Vs serpent, eagle Vs leopard, or serpent Vs leopard (Ibid). There are also plenty of scenes showing an encounter between a man and two serpents and the serpents are in the hands of the man (Fig. 3G). According to Pittman the scene of a hero holding two serpents in his hand first emerged during the 5th millennium B.C in the iconography of central Iranian plateau art (Pittman, 2013: fig. 6). Moreover, the cylindrical seals like the Jalalabad cylinder seal that were produced locally suggest relationships with Indus valley, central Asia, and Mesopotamia (Ascalone, 2008: 256) and the diversity of the seals indicates that Konar Sandal located at the center of this active trans-regional commercial network (Pittman: 2012: 55). Many of these seals are comparable with the seals of the Ur royal cemetery and have been dated to the same period (Ibid: 56, fig. 2). For instance, on three seals from Konar Sandal, three characters can be seen: A god, a woman, and a bird. The bird attacked the serpent and took it in the beak (Ibid: 57). A similar scene has been found in layer VIIA of the Inanna temple in Nippur (Aruz, 2003). The mythological motifs in Halil art divulge that in the mythology of bronze age inhabitants of the Halil basin, there were epic characters of both humans and animals who controlled the natural and supernatural forces and the realistic style over the seals shows that they were transferred from Iranian plateau to Mesopotamia (Pittman, 2015: 37-44).

Bampur valley and some archaeological sites are located in the east of Kerman province, inside the Iranian Baluchistan region but I did not have an important role in trans-regional trading (Tosi, 1974c: 60-61). Although there is no sign of the serpent over the pottery of Chah Hosseini horizon and concurrent site (5th and 4th millennium BC) (Moradi, et al., 2014; Mutin et al., 2017), the motif is still visible on the pottery of Bampur I-VI of 3^{rd} millennium B.C. An example of this is a horned serpent that is depicted over a pottery fragment from the 2^{nd} period of Bampoor (Moradi, et al., 2014; Mutin et al., 2017) (Fig. 3H & I). This horned serpent reminds us of the serpent motifs of Elam and Mesopotamia. On another pottery from Bampur IV, the serpent motif is depicted in simple and stylistic forms and similar to the plastic serpent motif on Shahdad (the serpent taking its tail in the mouth) (De Cardi, 1970: fig. 23, nos. 173 & 191). Khurab ax with the motif of a Bactrian camel from a grave in Khurab, a site near Tepe Bampur (Maxwell-Hyslop, 1955: 161) made this connection more believable.

In Shahr-i Sokhta, a 3rd millennium BC site in Sistan, the serpent motif has been seen over cylindrical seals, buff wares, and a special game board. The serpent motif can be seen over a cylindrical seal from the period I (3200-2800 BC) and pottery of the periods II and III. The former shows a serpent with some stylistic motifs that might be quadrupeds and it is comparable with a seal from Susa (Amiet, 1983: Plt. LXXXIV, fig. 2). In addition, the serpent motif is one of the relatively abundant animal motifs in over the buff wares of Shahri Sokhta period II and III that has been depicted in both realistic and stylistic forms. In most cases, the potter of Shahr-i Sokhta focused on the head of the serpent and using a big triangle and a simple body, depicted the animal (Biscione & Bulgarelli, 1983: 233, nos. 0115-0118, figs. 9-11; Vidale & Salvatori, 1997: figs. 112, 126) (Fig. 3]). The serpent motif has also been found over a game board in the cemetery of Shahr-i Sokhta (Piperno & Salvatori, 1982: figs. 3-5) (Fig. 3K) that is similar to a board from Ur royal cemetery (Piperno & Salvatori, 1983: 172; Seyed Sajjadi, 2010: 117) and is an exceptional specimen hinting to the relationship with Mesopotamia during the 3rd millennium BC.

Far away from southeast Iran, some pieces of evidence of the presence of serpent motifs on cultural materials have been found in Afghanistan and the Oxus region. For example, a stamp seal with the motif of a man holding two serpents in his hands (Pittman, 1984: fig. 29a) or a stamp seal with the motifs of a bird and a pair of serpents (Tosi & Karlovsky, 2003: fig. 263), both from central Asia and also a broken golden beaker with the motif of an eagle and two serpents from Tepe Fullol in Afghanistan (Lamberg Karlovsky & Tosi, 1989: fig.53). These are all signs of the distribution of serpent motif with Iranian concepts in the northeastern regions of the Iranian plateau. The serpent motif has been rarely seen in the art of the Indus Valley and Harappa.

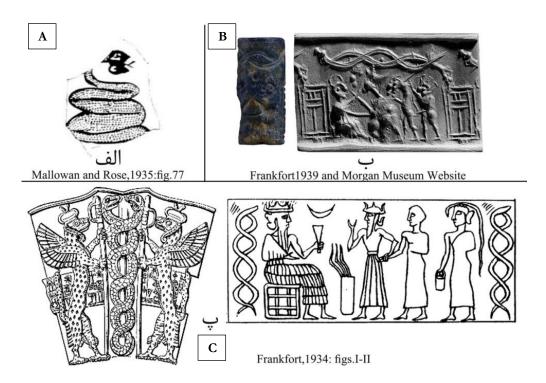
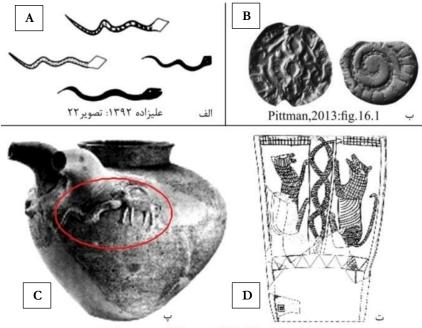


Figure 1: The serpent motif in Mesopotamia. (A) The only serpent motif found over the Halaf pottery; (B) A cylindrical seal from Jemdet Nasr in south Mesopotamia with a double-headed serpent motif; (C) Depiction of Ningizida on the seals of Lagash rulers.



Delougaz and Kantor, 1996: Plts. 26 and 118

Figure 2: The serpent motif in southwest Iran. (A) The serpent motif over Susa A and Bakun B pottery; (B) A stamp seal from Susa A with two inter-twisted serpents; (C) A spouted jar from proto-literate Choghamish with plastic double-headed serpent motif; (D) A should end pottery jar from proto-literate Choghamish with inter-twisted serpents similar to Ningizida depiction in Fig 1C.

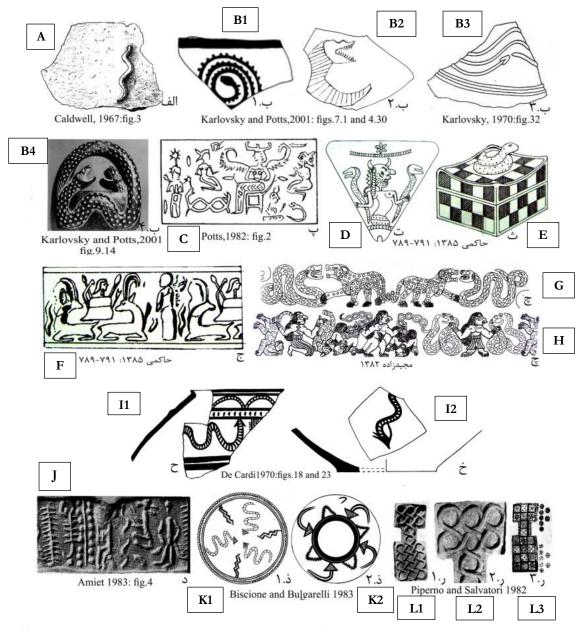


Figure 3: The serpent motif over the cultural materials of southeast Iran. (1) A plastic serpent motif on Iblis (rough Lalehzar) pottery. (B1-3) The serpent motif over Tepe Yahya IVB pottery. (B4) The serpent motif over chlorite objects from Tepe Yahya IVB. (C) A cylindrical seal from Yahya with a serpent motif and Elamite deities. (D) A bronze plaque from Shahdad with a man holding two serpents. (E) A chlorite building model with a serpent figure from Shahdad. (F) Cylindrical seals with serpent motif from Shahdad. (G & H) The serpent motifs over chlorite objects from South Konar Sandal, Jiroft. (I1-2) Horned serpent motif over Bampur II-IV pottery. (J) A cylindrical seal from Shahr-i Sokhta I similar to Susa. (K) A buff ware from Shahr-i Sokhta II-III with a serpent motif. (L1-2) A wooden game board with an inter-twisted serpent motif from grave No. 731 Period I. (L3) A game board from Ur royal cemetery.

VI. Conclusion

Although it is difficult to demonstrate where the serpent motif first emerged in the ancient Middle East, it is only natural to think that in the semi-arid terrain of Iran life is dependent on springs and underground waters, an animal like the serpent who lives underground, earned special attention and was considered as the god of underground waters. It appears the motif emerged almost simultaneously in a vast region of the Iranian plateau. The realistic depiction of the serpent was first reported from Sialk III4-5, Susa A/I, and Bakun A in the Middle East and during the late Uruk period, the motif penetrated into south

Mesopotamia and became a part of the artistic tradition. The presence of this motif in northern Mesopotamia such as Tepe Gawra is undoubtedly due to the extensive relationship with the nomads of the Zagros and the evidence of such relationships has been demonstrated by the seals and pottery of Hakalan and Parchineh cemeteries with Gawra.

However there is no firm evidence for the political, economic, or military dominance of Mesopotamia over the Susa plain during the proto-literate period, but after the establishment of the first Mesopotamian city-states, Southwest Iran became culturally and politically part of south Mesopotamia. In this period, during the mid-3rd

millennium BC, the cultural stream reversed, and the elements that had been Iranian earned Akkadian identity in the new belief system and returned to their homeland. The serpent motif is one of those artistic elements that can be discussed in the context of longterm cultural-material transactions between the Iranian plateau and Mesopotamia. The motif first emerged in the Iranian artistic works, then went to Mesopotamia and returned to the Iranian plateau with a new and redefined form in the religious context of Mesopotamia. The acceptance of this motif as an important symbol by Elamites was not due to the political dominance of Akkad over the Susa Plain, but it was because of the long cultural-ritual background of this motif among the inhabitants of the Iranian plateau. Many shreds of evidence indicate that in Elam both Sumerian-Akkadian (in their Iranian forms) and Elamite gods were worshiped by Elamites (Potts, 1981: 140-41).

On the other hand, the emergence of this motif in the art of southeast Iran should be considered a result of the trans-regional relationships done by Susa plain inhabitants across Iran after the proto-Elamite period. Although the serpent motif has no place in the cultural materials of southeast Iran before the 3rd millennium B.C widely but since the early 3rd millennium BC. At the beginning of period IV at Teppe Yahya (late 4th and 3rd millennium BC), there is a lot of evidence of a relationship with western regions. Cylinder seals, seal impressions, and engraved chlorite vessels are the indicators of such relations that are all depicted by serpent motifs and particularly show an artistic depiction of serpents in an epic-mythological context. The situation in Shahdad and Jiroft was similar to Tepe Yahya and signs of this motif can be seen on cylindrical seals, bobby pins, etc.

References

Alden, J. R. (1982). Trade and politics in Proto-Elamite Iran., Current Anthropology, 23(6), 613-640.

Alizadeh, A. (1992). Prehistoric Settlement Patterns and Cultures in Susiana, Southwestern Iran. University of Michigan, Ann Arbor.

Alizade, A. (2003). The Origin of State in the Prehistoric Fars, Tell Bakun, Nomadism and the Formation of the States, Translated by K. Roustai, CHTO of Fars Province, The Research Foundation of Parseh, Pasargad(2). (Persian)

Alizadeh, A. (2006). Tall-e Bakun A: The origins of state organizations in prehistoric highland Fars, southern Iran, Illinois, Oriental Institute Publication of the University of Chicago. Vol.128, Chicago.

Alizadeh, A. (2010). The rise of the highland Elamite state in southwestern Iran, Current Anthropology, 51, 353-383.

Alizade, A. (2013). The mixing of opposite and complementary agricultural and animal husbandry livelihoods in the southwest of Iran. The Archaeology of Iran, 3(3), 41-74 (in Persian).

Amiet, P. (1972). Glyptique Susienne, MDP 43, Paris, Geuthner.

Amiet, P. (1974). Antiquités du désert de Lut. RA, 68, 97-110.

Amiet, P. (1983). The archaic glyptic at Shahr-i Sokhta (period I). In M. Tosi(ed.), Prehistoric Sistan 1, Rome, ISMEO, 199-210

Amiet, P. (1993). The History of Elam. Translated by S. Bayani, University of Tehran pub, Tehran (in Persian).

Amiet, P. (2010). The relations of Elam and Mesopotamia from 3500 to 1600 BC. In Early Mesopotamia and Iran in Antiquity: Contact and Conflict 3500-1600 BC. Proceeding of Seminar in Memory of Vladimir Lukonin, J. Curtis (ed.), translated by Z. Basti, SAMT pub, Tehran, 25-37 (in Persian).

Amiet, P., and Tosi, M. (1978). Phase 10 at Shahr-i Sokhta: excavation in square XDV and the late 4thmillennium B.C.assemblage of Sistan, East and West, 28 (1-4), 9-41.

Aruz, J. (2003). Intercultural style carved chlorite objects. In Aruz, J. and Wallenfels, R., (eds.), Art of the First Cities, the Third Millennium B.C. From the Mediterranean to the Indus, The Metropolitan Museum of Art, New York, 325-345.

Ascalone, E. (2008). Cultural Interactions among Mesopotamia, Elam, Transelam, and Indus Civilization. The Evidence of a Cylinder-Stamp Seal from Jalalabad (Fars) and its Significance in the Historical Dynamics of South-eastern Iran. In H. Kuhne et al. (eds.), Proceedings of the 4th International Congress on the Archaeology of the Ancient Near East, Berlin, Eisenbrauns, Winona Lake, 255-276.

Ascalone, E. (2020). Pesi dall'Iran orientale. La metrologia a Shahr-i Sokhta e Konar Sandal Sud all'interno di un sistema culturale integrato. In M. Vidale, D. Usai, S. Tuzzato (eds.), Tales of three worlds. Archaeology and beyond Asia, Italy, Africa. A Tribute to Sandro Salvatori, Padova, 3-16.

Beale, T. (1973). Early trade in highland Iran: a view from a source area. World Archaeology, 5(2), 133-148.

Biscione, R., & Bulgarelly, M.C. (1983). Painted geometrical decoration on the Shahr-i Sokhta buff ware: an approach to systematic classification. In Tosi, M., (ed.), Prehistoric Sistan, 211-257.

Buchanan, B. (1971). A snake goddess and her companions: a problem in the iconography of the early second millennium BC. Iraq, 33 (1), 1-18.

Caldwell, I. R. (1967). Investigations at Tal-i Iblis, Illinois State Museum Preliminary Reports 9, Springfield: Illinois State Museum Society.

Cooper, J.C. (1983). The Curse of Agade. Baltimore and London.

De Cardi, B. (1968). Excavation at Bampur, S.E Iran: a brief report. Iran, VI, 135-156.

De Cardi, B. (1970). Excavation at Bampur, A Third Millennium Settlement in Persian Baluchistan 1966, Anthropological Papers of the American Museum of Natural History, 51(3), New York.

Delougaz, P., & Kantor, H. (1996). Chogha Mish (Vol. I): the first five seasons of excavations 1961-1971. In Alizadeh. A., (ed.), The University of Chicago, Oriental Institution Publication, Vol.101. Desset, F. (2014). A new writing systems discovered in 3rd millennium B.C.E. Iran: the Konar Sandal geometric tablets, Iranica Antiqua, XLIX, 83-109.

Dittmann, R. (1986). Susa in the Proto-Elamite period and annotations on the painted pottery of Proto-Elamite Khuzestan. In Finkbeiner, U., and Rollig, W., (eds.), Gamdat Nasr period or regional style? Tiibinger Atlas des Vorderen Orients Beiheft B 62. Wiesbaden: L. Reichert Verlag, 171-198.

Eliade, M. (2011). Pictures and Symbols, Translated by M.K Mohajeri, University of Tehran pub, Tehran (in Persian).

Frankfort, H. (1934). Gods and myths on Sargonid seals. Iraq, 1(1), 2-29.

Frankfort, H. (1939). Cylinder seals. Chicago, Chicago University Press.

Frankfort, H. (1955). Stratified cylinder seals from the Diyala region, Chicago. The University of Chicago Press, Vol. LXXII.

Frazer, J. G. (1919). The Folklore in the Old Testament (Vol.1). London, Macmillan.

Girshman, R. (1993). Sialk in Kashan (Fouilles de Sialk près de Kashan). Translated by A. Karimi, Vol.1. CHTO, Tehran., Iran (in Persian).

Golan, A. (2003). Prehistoric religion-mythologysymbolism. Jerusalem,

Hakemi, A. (1997). Shahdad: archaeological excavations of a Bronze Age center in Iran. In S.M.S Sajjadi(ed.), Roma: Istituto Italiano per il Medio ed Estremo Oriente Centro Scavi e Richerche Archeologiche, Reports and Memoirs, Vol. XXVII.

Hakemi, A. (2006). The Results of 8 Seasons Excvavtion at Shahdad (Lut Desert): 1347-1354, M. Mosavi (ed.), RICCHT, ICAR, Tehran (in Persian).

Hakemi, A, & Sajjadi, S.M.S. (1988). Shahdad Excavations in the Context of the Oases Civilization. In G. Ligabue and S. Salvatori (eds.), Bacteria, an Ancient Oasis Civilization from the Sands of Afghanistan, 142-153.

Hints, V. (1992). The Lost World of Elam, Translated by: F. Firouz Nia, Elmi Farhangi pub, Tehran (in Persian).

Hyut, J. L. (2010). Iran 1. Translated by M. Golzari and M. Vazirpour, Ketabdar pub, Tehran (in Persian).

Kohl., P. (1977). The Balance of Trade in Southwestern Asia in the Mid-Third Millennium BC. Current Anthropology, 19(3), 463-492.

Kohl, P. (1979). The World Economy of West Asia in the Third Millennium BC. In Maurizio Taddei (ed.), South Asian Archaeology 1977(1), 55-85.

Lamberg-Karlovsky, C.C. (1970). Excavations at Tepe Yahya, Iran, 1967-1969. Progress Report 1. American School of Prehistoric Research, Bulletin 27. Cambridge, Mass.: Peabody Museum, Harvard University.

Lamberg- Karlovsky. C.C. (1977). Foreign relations in the third millennium at Tepe Yahya. In Deshayes. J. (ed.), Le Plateau Iranen et l'Asie Centrale des Origines a' la Conquete Islamique, Paris, 33-43.

Lamberg- Karlovsky. C.C. & Beale, T. (1986). Excavation at Tepe Yahya: 1967-1975, the Early Periods, Peabody Museum of Archaeology and Ethnology, Harvard University, Bulletin 38.

Lamberg- Karlovsky. C.C, & Tosi, M. (1989). Shahr-i Sokhta and Tepe Yahya: Tracks on the Earliest History of the Iranian Plateau. East and West, (39), 21-57. Lamberg- Karlovsky. C.C., & Potts, D.T. (2001). Excavations at Tepe Yahya, Iran:1967-1975, the Third Millennium, With contributions by Holly Pittman and Philip L. Kohl, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts.

Lambert, W. G. (1966). Ancient Near Eastern Seals in Birmingham Collections, Iraq, 28 (1), 64-83.

Leak, G. (2007). The Encyclopedia of Myths in the Ancient East. Translated by R. Behzadi, Tahouri pub, Tehran (in Persian).

Le Breton. L. (1957). The Early Periods at Susa, Mesopotamian Relations. Iraq, 19(2), 79-124.

Le Brun, A. (1999). hacinebi et suse. Paléorient, 25 (1), 139-40.

Madjidzadeh, Y. (1976). The Land of Aratta, Journal of Near Eastern Studies, 1(2), 105-113.

Madjidzade,Y. (2002). The History and Civilization of Mesopotamia, Vol. 3. Art and Architecture, Markaz e Nashre Daneshgahi, Tehran (in Persian).

Madjidzade, Y. (2003). la découverte de Jiroft. dossiers d'archéologie, 287, 19–26.

Madjidzade, Y. (2004). Jiroft, The Oldest Civilization of the East, the Centre of Publication in Vezarat e Farhang va Ershad e Eslami, Tehran (in Persian).

Maisels, C. K. (1999). Early Civilizations of the Old World, The formative histories of Egypt, the Levant, Mesopotamia, India and China, New York.

Mallowan, M.E.L. & Rose, J.C. (1935). Excavations at Tell Arpachiyah, 1933. Iraq, 2, 1–178.

Maxwell- Hyslop, K.R. (1955). Note on a Shaft-Hole Axe-Pick from Khurab, Makran. Iraq, 17(2), 161.

Munn-Rankin, J. M. (1959). Ancient near eastern seals in the Fitzwilliam Museum, Cambridge. Iraq, 21(1), 20-37.

Moori, P.R.E. (2010). If Iran was the Sumerian El Derado?. In Early Mesopotamia and Iran in antiquity: Contact and Conflict 3500-1600 BC, Proceeding of Seminar in memory of Vladimir Lukonin, J.Curtis (ed)., translated by Z. Basti, SAMT pub, Tehran, 38-61 (in Persian).

Moradi. H, Sarhaddi Dadian, H., & Abdul Rahman, N. H. (2014). Development and Fall of the Bampur Valley, Based on the New Archaeological Evidences in Prehistoric Period. Iranian Studies, Journal of the International Society for Iranian Studies, 47(2), 263-287.

Meier, D.M.P. (2008). Die Metallnadeln von Shahdad – eine funktionstypologische Untersuchung,Abschlußarbeit zur Erlangung des GradesMagister Artium (M.A.) im Fach Vorderasiatische Archäologie am Dekanat für Kulturwissenschaften der Eberhard- Karls Universität Tübingen,Gutachter: PD Dr. Mirko Novák und Prof. Dr. Ernst Pernicka.

Piperno. M., & Salvatori. M. (1982). Evidence of Western Cultural Connections from a Phase 3 group of Graves at Shahr-i Sokhta. Hans-Jorg Nissen and Johannes Renger (eds). Mesopotamien und seine Nachbarn, Politische und kulturelle Wechselbeziehungen im AltenVorderasien vom4. bis1. Jahrtausend v.Chr, Oietrich Reimer Verlag. Berlin, 79-92.

Piperno. M, & Salvatori. M. (1983). Recent Results and New Perspective from the Research at Graveyard of Shahr-i Sokhta, Sistan, Iran. Annal. 43, 173-0191

Pittman, H. (1984). Art of the Bronze Age, Southeastern Iran, Western Central Asia, and the Indus Valley. The Metropolitan Museum of Art, New York. Pittman, H. (2001). Glyptic Art of Period IV. In C.C. Lamberg-Karlovsky and D.T. Potts (eds.), Excavations at Tepe Yahya, Iran: 1967-1975, the Third Millennium. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts, 231-268.

Pittman, H. (2008). The art of sealing in Konar Sandal: The gods, the rulers and relationship by marriage. In Papers on first international congress of Halil Rud Civilization 2004, Y. Majidzade (ed.), Kerman, HCT of Kerman province:53-78 (in Persian).

Pittman, H. (2012). The Bronze Age Art of Iran: New capture of Konar Sandal in Halil Roud archaeology in southeast of Iran. In The Papers of Second Congress on Civilization of Halil Roud Basin in Jiroft. Y. Majidzade and M.R. Miri (eds.), Fahangestan e Honar pub, Tehran, 53-78 (in Persian).

Pittman, H. (2013). Imagery in Administrative Context: Susiana and the West in the Fourth Millennium B.C. Cameron A. Petrie (ed.), Ancient Iran and Its Neighbours, Local Development and Long-Range: Interactions in the Fourth Millennium B.C. British Institute of Persian Studies, Archaeological Monographs Series III, Oxbow Books, Oxford, UK, 293-336.

Potts, D. T. (1981). Echoes of Mesopotamian divinity on a cylinder seal from southeastern Iran. Revue d'Assyriologie et d'archéologie orientale, 75(2), 135-142

Potts, D. T. (1999). The Archaeology of Elam, Formation and Transformation of an Ancient Iranian State, Cambridge University Press.

Rafifar, J. & Malek, M. (2013). The iconography of leopard and snake on Jiroft cultural material, 3rd millennium BC. In Journal of Archaeological Researches of Iran, 4(3), 7-36, (Persian)

Raikes, R. (1979). Prehistoric Iran and Baluchistan: The environmental constraints. In: Maurizio Taddei (ed.), South Asian Archaeology, 1977(1), Naples, 553-560.

Rashad, M. (1990). Die Entwicklung der Vor- Und Fruhgeschichtlichen Stempelsiegel in Iran, Jahrttausends V. Chr, Dietrich Reimer (eds). Im Vergleich Mit Mesopotamien, Syrien Und Kleinasien- Von Ihren Anfangen Bis Zum Beggin Des 3. Verlag in Berlin.

Sajjadi, S.M. (2010). A Mental game of Shahr-i Sokhta (Sistan), Bastan Pajouhi Journal, 6, 113-124 (in Persian).

Salvatori, S., & Vidale, M. (1997). Shahr-i Sokhta 1975-1978: Central Quarters Excavations, Preliminary Report. Roma: Istituto Italiano per l'Africa e l'Oriente.

Speiser, E.A. (1935). Excavation at Tepe Gawra, Vol.1. Philadelphia, University of Pennsylvania Press.

Talai., H. (2011). 8000 Years of Making Pottery in Iran, SAMT pub, Tehran (in Persian).

Tosi, M. (1974a). The Lapis lazuli Trade across the Iranian Plateau in the 3rd Millennium BC Gururajamaiijarika: Miscellanea in onore di Giuseppe Tucci, Napoli: 3-28

Tosi, M. (1974b). The Problem of Turquoise in Proto Historic Trade on The Iranian Plateau. Memorie dell' Istituto Italiano di Paleontologia Umana, VoI.II – Anno, 1974, 147-162.

Tosi, M. (1974c). Bampur, a Problem of Isolation. East and West, 24(1-2), 29-61

Tosi, M. (1979). The Proto-Urban Cultures of Eastern Iran and the Indus Civilization. Notes and suggestion for a spatio-temporal Frame to Study the Early Relation between India and Iran. In: Maurizio Taddei (ed.), South Asian Archaeology, 1977. Napoli, 149-171.

Tosi, M., & Lamberg-Karlovsky, C.C. (2003). Pathways Across Urasia. In: J. Aruz and R. Wallenfels (eds.), Art of the first cities: The third Millennium B.C From the Mediterranean to the Indus. The Metropolitan Museum of Art, New York, 347-376.

White, M., & Dyson, H. (2003). The Chronology of Iran Since 8000 to 2000 BC. Translated by A. Pour Faraj and A. Chaichi Amir Khiz, Nasl e Baran pub, Tehran (in Persian).

Van Buren, E. D. (1934). The God Ningizzida. Iraq, 1(1), 60-89.

Vanden Berghe, L. (1959). Archéologie de l'Iran ancien. Leiden. Brill.

Ward, W. H. (1910). The Seal Cylinders of Western Asia. Carnegie Institution of Washington.