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## RESEARCH ARTICLE

# Symbols for the Neolithization Process: Ritual Animals of the Eastern Fertile Crescent

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**Abstract:** Neolithic and food production from domesticated species has been one of the most important topics discussed and studied about prehistoric archaeology. Since the 1920s, or even much earlier, archaeologists tried to explain this great event that changed human life after millions of years of hunting-gathering. During these years, various theories based on technological, environmental, economic and sustenance, demographic, social, and evolutionary and, in recent decades, ideological, have been proposed by researchers. Some believe that Neolithic and food production is not an absolute and sudden process, but a long-term process, from knowing and choosing of species, management, and domestication of interdependence; this process is called Neolithization. The Neolithization process is not just the adoption of a new way of life due to environmental and demographic changes, but the beginning of human mental and worldviews changes. In this period, human manifests new behaviors, including rituals, which can be seen in burials, handicrafts, and architecture. Placing animal horns (domestic/wild) in the architectural space is one of these ritual behaviors. This symbolic behavior has been found in Fertile Crescent sites, from the Levant in the westernmost to Iran's easternmost borders. Some researchers believe that this behavior is to gain authority, while some believe that humans tried to use these ways to control the wild in their inner domestic world. In this research, the authors have tried to analyze this type of behavior from the perspective of Neolithization ideological theories.

**Keywords:** Neolithization; Neolithic; Animals; Horns/Antlers; skulls; Domestication; Ideology; Ritual; Fertile Crescent; Zagros.

## Introduction

About 10000 BP, some changes took place in parts of southwest Asia that had a significant impact on human experiences; economic and social changes that occurred in the sustenance of hunter-gatherer groups. At this time, most of the occupied areas of the world had such a way of life. These changes led to food production and settlement in small villages; this change was neither simple nor universal, but what happened changed the direction of human history. The set of these changes is called the “Neolithic Revolution”. In the Neolithic concept, there is a flexible range; chronological, economic symbol, and a way of thinking and looking at the world differently from the Paleolithic era. These events took place in small parts of the world and then spread to other regions. This important event in human life has given rise to various interpretations and theories over the past century. Some see it as just a technological transformation, while others go so far as to call it the beginning of a deep human connection

to ideological, emotional, symbolic, and self-conscious issues.

## Neolithization: A Great Mental Change

After the Paleolithic, the period of “Great Shift” or Epi-Paleolithic began (Mussi, 2001); a period in which significant changes took place in the economic structure of societies, and at the end of this period, the Neolithic Revolution, one of the greatest changes in human history. The path that this process has taken over thousands of years and eventually led to the domestication and food production through domesticated species has been called Neolithization. Numerous theories have been proposed for this process; Environmental theories (Childe, 1928, 1951; Braidwood, 1960; Shaikh Baikloo Islam, 2022), demographic (Binford, 1968; Flannery, 1969; Bar-Yousef & Meadow, 1995), social (Hayden, 1990; 1992; 1995), geographical (Diamond, 1394), co-evolution (Rindos, 1984; Zeder, 2006) and ideological (Cauvin, 2000; Watkinz, 2002;

2004; Hodder, 1990). Each of these theories represents only one aspect of this great process, and alone, does not fully address this global question.

In general, the issue of Neolithic and domestication origins are affected by three main groups of evidence: 1) Climate change just before agriculture and domestication that occurred in the ancient world; 2) Population density also increased just before this period; and 3) Human-made technologies have made significant progress over the entire history of their presence (Wenke & Olszewski, 2007). The role of the mind and the great symbolic changes that took place in this period have received less attention; whereas human beings in primitive societies are highly symbolic, but their behavior is part of the general behavior of the human species. Physiological actions such as eating, mating, work, etc., are not only organic phenomena for them, but also they are considered as a sacred and devotional behavior or in connection with holiness. They try to live as much as possible in the center of the holiness or in presence of sacred objects and beings because in their view the holiness is equal to authority and in the final analysis is equal to

reality and existence. For those with religious experience, the whole of “nature” has the authority and ability to manifest itself as a saint of the universe. The religious human strives deeply to exist, to enjoy reality, and to be hungover by the intoxication of the holy force.

Although we observe symbolic and perceptual theories for the Neolithization process and domestication more after the formation of the post-processual school, which emerged in opposition to the neglect of the role of human thoughts and perceptions in the processual school, but such theories have been proposed before. About a hundred years ago, Edward Hahn, in a theory, stated that some animals may have been domesticated for religious reasons; to illustrate his theory, he mentioned a wild bull, Urus (*Bos taurus*), and states that it was so gigantic and could not be used for farming or milking before be tamed. Instead, Hahn suggests that the animal was probably domesticated because of its curved, crescent-shaped horn for sacrifice to the moon goddess (Hahn, 1909; Anderson, 1954).

Cuavin explicitly rejects environmental, demographic, and even cultural approaches, stating that the origins of the Neolithic and the

spread of agriculture should be seen primarily as a revolution of symbols. He represents the societies of the Levantine Natufian, that willing to change, and such a desire can only arise from the social psyche; then, for evidence, Cuavin introduces the Early PPNA culture, Khiamian, which begins after the Natufian period, which is the period of symbolic drama, thus creating a clear perceptual distinction between the Paleolithic and Neolithic periods; this perceptual change has been called the symbols revolution and has been the precondition for economic change (Cauvin, 2000). Trevor Watkins, like Cuavin, rejects environmental and demographic approaches for Neolithic origins and considers symbolic changes in human life (focusing on architectural evidence and burials) prior to subsistence changes to be the Neolithic origin. Watkins' analysis provides new archaeological data on perceptual and evolutionary psychology and cultural anthropology. His main aim is to provide an evolutionary view of human perceptual abilities that allows them to reach an understanding of the revolution of symbols, as the modern human mind is capable; therefore Watkins, instead of focusing

only on agriculture, focuses on Neolithization. For this purpose, he studied the differences between cultural materials and the socio-economic structure of the two periods, Epi-Paleolithic and Neolithic, and as a start point, introduces the emergence of significant and symbolic architectures in development at the early Neolithic in the sites such as Qermez Dere in northern Iraq, Jerf el Ahmar in Syria, and Hallan Çemi and Gobekli Tappah in southeastern Anatolia. Watkins argues that these early architectures combined social, cultural, physical, and metaphysical features and that their design was primarily an expression of socio-cultural values. The growing and survival of sedentary hunter-gatherer communities increase the complexity of social relations and therefore encourage symbolic storage, mainly by structures that often built in the most essential space around us have the ability to "form" many ways and meanings; therefore, with the construction and use of houses, new concepts are designed and new worlds are created. Watkins emphasis the pattern of the "co-evolution of thoughts and cultures" as the main factor in Neolithization. He interpreted the Neolithic revolution in

terms of the emergence of humanity and analyzed the first pervasive human worldview with a perceptual approach (Watkinz, 2002; 2004).

But perhaps the best and most accurate form of ideological theory has been proposed by Ian Hodder (Hodder, 1990). Hodder believed that psychological, social, and symbolic factors properly have played a major role in the Neolithization of societies; the domestication of plants and animals, at least in the Middle East and Europe, should be considered in the context of "domestication" in relation with other domains (Hodder, 1987: 56). In his *Domus theory*, Hodder states that household life and its inner activities can be considered a metaphor for the domestication of human society. In the Natufian and PPNA period, the house was the push factor behind the evolution of nature into culture: "The process of domestication -the control of nature- is a metaphor and mechanism for controlling society" (Hodder, 1990: 12). Not only domestic activity but also death, animals, and plants became part of the "farm" culture and were controlled at home and the house became the center. This house was paved and

painted and later plastered and functionally the space has been divided. Death was placed under the floor of the house and became under control. With the advent of the PPNA period, wild animals -and wild plants- were brought into the house, "controlled" and turned into cultural production. The house became a conceptual and practical place for the transformation of "nature into culture" (Hodder, 1990: 39).

Home and community were logically related to the nature and domestication of society. Hodder, like Cauvin, thinks that "desire" (feelings and fears) was deliberately involved in these changes; then, the desire formed the control of wild nature. Apart from social factors, the climate and environmental changes have been suggested as possible pushes for agricultural transfer at the end of the Pleistocene; therefore, the gradual socio-symbolic process of "culturalization of nature" reached an important point at the end of the Pleistocene (culture was ready), and the interaction of this process with climate and the environment led to agriculture life (Hodder, 1990: 293). Common Neolithic practices, including the construction of houses and

settlements, the observance of details in dealing with the dead, the production of pottery and its decorations, all involve the transformation of nature into culture, by the expansion of cultural control and domination of nature.

In a more recent article on symbolism in the Neolithic period, Hodder (2003) offers other interesting ideas about the role of agriculture in the "Neolithic Revolution". He noted that the "domesticated" world was less represented in early Neolithic art, with more emphasis on nature in sites such as Çatal höyük and Gobekli Tappeh. Thus social relations and rituals are formed more around nature than in the domestic world; so the question is, what role, agriculture played in the Neolithic Revolution? Hodder points out that recent evidence suggests that the process, which began mainly in the Natufian period, was very slow, with different products and animals being domesticated at different times. In addition, there appears to have been considerable regional diversity in the process; therefore, it is probably not a "revolution" that has taken place, but rather a slow process of diversification of a region in which plants and

animals are important but do not represent only its constituent parts; Thus, for Hodder, the Neolithic Revolution was primarily a major social change. Climate may have had an effect, but a long-term socio-economic process that began in the Upper Paleolithic led to semi-sedentary, intensified pressures, and increased social complexity; finally, these processes, often "accidentally", give rise to domesticated plants and animals in some regions (Hodder, 2003: 135-136).

Briefly, Hodder put the concepts of culture and nature, along with the role of the human as an agent of transition from the wild world (nature) to the domesticated (culture), together. This is a symbolic transition that facilitated competition between groups. In the meantime, some groups became sedentary and some daily activities became symbolic in society. Fears, emotions, senses, and other psychological aspects of humans led to long-term dependence, which played a role in a play to change and control the wild world (nature); therefore social control of nature formed a mechanism to facilitate the storage, modification, and preparation of food, feasts, as well as agriculture and domestication; and

finally, humans were able to turn wild nature into a domestic culture.

### **Ritual Skulls and Horns/Antlers in Eastern Fertile Crescent**

Evidence of the use of horns/antlers and skulls can also be seen in other parts of the Fertile Crescent. In Anatolia, Turkey, in the site of Çatal höyük (7400-6000 BC), the inhabitants hanged out the skulls and horns of cows, deer antlers, bear claws, and boar fangs on the walls or benches of the northern part of the houses which seems to have been their sleeping place (Hodder, 2006; Anspach, 2019). The burial of a puppy and the burial of an adult male with an immature wild sheep have also been found in this site, building 3 (Russell & Düring, 2006). In the Neolithic site of Hallan Çemi (10100-9600 BC) in the northern region of Fertile Crescent and southeastern Anatolia, we see the use of wild bull skull on the wall of a building and three wild sheep skulls in the center of a structure (Rosenberg 1999; Matthews et al., 2013). In the western part of Fertile Crescent, Levant, there are also many sites where animal horns/antlers and skulls have been used as ritual objects; though, more often in burials. From the Epi-paleolithic sites

of Kharaneh IV (deer antlers and wild goat horns) and Ein Gev I (gazelle antlers) related to 19000 years ago, to Ain Mallaha (gazelle antlers attached to human skulls) and Azraq 18 (wild ox horns from the tombs of 8 people) related to the Natufian period; from Hatula (skull of a wild ox without horns in a woman's burial) belonging to the early PPNA period to Ghwair I (skull of a wild ox with its horns and skull of four wild goats in a room) belonging to the MPPNB period and Altit Yam (ox horn in an architectural structure) belonging to PPNC, are some of the sites that can be mentioned in the western part of Fertile Crescent (Maher et al. 2011; Bar-Yosef & Arensburg, 1973; Bocquentin & Garrard, 2016; Goring-Morris & Belfer-Cohen, 2011b; Simmons & Najjar, 2006; Galili et al., 2005).

### **Central Zagros**

In the eastern part of the Fertile Crescent (Table 1; Map 1), there is not much information about the existence of ritual objects at the Epi-Paleolithic period; However, Roger Matthews reports that ornamental objects, including wild sheep horns, have been found in the Epi-Paleolithic layers of the Zawi

Chemi Shanidar (Matthews et al., 2020: 646). In the most recent excavation of the Asiab, a pre-pottery Neolithic site (9300-9750 BC), by Hojjat Darabi, along a circular building (Fig. 3) from the previous excavation (1960), a shallow floor area formed and painted with red pigment. Inside this shallow floor, there was a bull horn (Fig. 1); two deer antlers were found, one on the mud wall and the other on the floor of the northern part of the trench; Remains of 19 wild boars were also found in the center of the structure, inside a pit (Fig. 2), which also includes evidence of the removal of the fangs of large male species as a trophy (Bangsgaard, *et al.*, 2019; Darabi et al., 2018; Darabi et al., 2019). The Ganj Dareh is another site that represents pre-pottery and pottery Neolithic periods in the Zagros. In this site, in one of the rooms of level D, which is the beginning of the pottery Neolithic period (late eighth millennium BC), two sheep skulls and horns were placed on top of each other in a niche on the wall (Fig. 4, 5) (Hole, 2009: 112; Smith, 1990). In the Sheikh-E Abad site and Trench III (7600-7500 BC), in the T-shaped building (Fig. 7) and on the south side of the building, there were skulls of four goats and one sheep

(Fig. 6), which was decorated with red ocher, painted on their teethes, and their faces were facing the inside of building (Mohammadifar et al., 2011; Matthews et al., 2013d). In the southern central Zagros and Deh Luran plain, in the Ali Kosh site, Buz Morde C2 phase (7581-7500 BC) and on the floor of one of the houses, the remains of the skull of a hornless female sheep were discovered (Fig. 8, 9) (Hole et al, 1969). In Bestansur, a site from the pre-pottery Neolithic period (7700-7100 BC) in the Iraqi Zagros, several horns (most likely caprine) have been found in the Neolithic layers in Trench 10, Building No. 5 (Fig. 10) (Matthews et al., 2020). Abbasnejad Seresti and Aryamanesh (2017) and also Miri and Aryamanesh Based on the findings of Sheikh-E Abad and Catal hoyük in Anatolia have Studied the views and theories of anthropologists and sociologists about religions, and symbolism and religion in in the beginning of the Neolithic period (Miri and Aryamanesh, 2022).

The horns/antlers and skulls of wild animals are not the only symbolic elements found in the sites discussed in this paper. In Sheikh-E Abad, there are 6 burials belonging to the late



Neolithic settlement (eighth millennium BC) that were located under the rooms and walls; the burials have no gifts, but two burials are covered with red ocher (Cole & Matthews, 2009). Ornaments objects such as necklaces and rings, a human clay figurine from Trench 2, and several clay tokens are other symbolic finds on this site (Matthews et al., 2013d). In Asiab, under the circular architectural space, several ornaments have been discovered, including marble beads, necklaces and bracelets, and animal and human clay figurines (in the form of plaques), and burials decorated with red ocher (Braidwood et al., 1961). In the Ganj Dareh, level D, goats, and sheep, as well as human clay figurines (mostly female), have been found (Singh, 1974); 26 burials (adults and children) found in this site were located below the residential space; in one burial, a mass grave of three people was reported (an adult, a teenager, and a child) in a brick coffin covered with flowers; Except for two burials, a child with a stone pendant and an adult man with a necklace consisting of 72 stone beads and shells, the rest of the burials were without gifts and objects (Malek Shahmirzadi, 2003). In Ali Kosh, Buz Mordeh phase, there are a large

number of animal figurines, mainly goats, as well as human figurines and ones that show male gender characteristics (Hole et al, 1969; Asadi & Abbasnejad, 2018). In Bestansur, Iraqi Zagros, some symbolic objects such as clay and stone tokens, a headless and handleless sitting clay figurine, similar to Jarmo's and possibly an animal figurine, beads made of clay, stone (white agate or jacinth, stone Varicose, red agate, limestone, marble, etc.), seashells and crabs and white marble bracelets were been found (Richardson, 2020).

## **Discussion and Results**

In searches on humanity's roots, the most important events are the emergence of symbols, languages, and thoughts, which are often considered as the constituent features of human culture. Culture, unlike genetic evolution, requires the transmission of information between individuals. Concepts of cultural origins often focus, especially among biologists, on the genetic evolution of social learning capacity. It is generally assumed that social learning affects the adaptation of cultural characteristics, but human culture is composed of many characteristics; so the question is,

when did humans get ready to “culturalization” the wild outside world, “the nature”?

In general, after the end of the LMG around 25000-15000 BC (Matthews et al., 2020) large animal species such as mammoths, Woolly rhinoceros, and deer (*Megaloceros*), which formed a large part of the human community's sustenance, became extinct and changed the food diet toward smaller animal species (Vahdati Nasab and Ariamanesh, 2015). Then, with introducing the hunter-gatherer groups, the Stone Age begins from 25,000 to 11,000 BP. This period marks the end of the Pleistocene, which is marked by a series of global cold and dry events that lead to glacial and glacial retreats in the northern latitude plateaus (Olszewski, 2014). Mortensen estimates this period in the Central Zagros of Iran 20,000-12,000 BP based on the chipped stone tools industry (Mortensen, 1993), while the results from the Zarzi Cave in the Iraqi Zagros shows a range from 15,000-12,000 BC (Matthews et al., 2013).

Based on warmer and wetter climatic conditions (Bølling-Allerød) in this period, which began 15000 BC, seems that the

settlement pattern of the region included the mobility groups looking for food sources from an area to another. The available data show that the settlements are concentrated in large room caves, located near the intersections of the rich environments and with a good view of the surrounding area in sites such as Shanidar, Palegwara, Warwasi, Yafteh and, Zarzi (Hole & Felannery, 1967; Matthews et al., 2020). Food diet in this period according to the findings of the Warwasi cave including such as zebras, goats, sheep, and boars along with small animals such as mice and rabbits, birds, aquatic species, and freshwater snails, along with plant sources. In the Palegwara site, animal food diets include zebras, red deer, Persian gazelles, boars, wild cattle, sheep, and goats (Turnbull & Reed, 1974; Turnbull, 1975; Olszewski, 2014).

Most Epi-Paleolithic sites such as Warwasi, Wezmeh, Palegwara, Shanidar, and Zarzi are cave or rock shelters located at altitudes above 1000 m. With the beginning of the Younger Dryas period, they seemed to migrate to the lower regions to escape from the cold and dry climate. On the other hand, all sites of the Central Zagros that have symbolic horns/antlers and skulls, have been found

outside the caves and in the architectural context, which is one of the reasons why they are symbolic. With the improvement of climatic conditions from 10,500 BC, which marks the beginning of the Holocene period, we witness the emergence of sites in open spaces in the Zagros such as Karimshahir, Zawi Chemi Shanidar, and Asiab along with the first known architecture in the region “Circular” (Matthews et al., 2020); From the ninth millennium BC, rectangular architecture appears in sites such as Chogha Golan, East Chia Sabz, Sheikh-E Abad, etc. Hole introduces this 2000-year gap at the same time as the Younger Dryas event and late Pleistocene and believes that it is a reason for the beginning of the domestication of animals (Hole, 1996; Matthews et al., 2013). At the end of the Younger Dryas, the Central Zagros, due to the improvement of the climate and the expansion of resources, occupied again, and the increase of settlements caused growth in population and gradual transition from mobility to semi-sedentary and finally permanent sedentary in 8500 BC. It seems that during the ninth millennium BC, the communities of the Central Zagros managed

food resources in response to their population growth, and finally in 8000 BC, they managed to completely domesticate goats and grains. This transition process lasted 1500 years and became known as “Transitional Neolithic” (Darabi, 2012).

However, the Younger Dryas and climate change cannot be the only reason for this cultural readiness. Regarding the beginnings of agriculture in Natufian communities, D. O. Henry states that the Younger Dryas was not the main factor, but the inherently unstable system of Natufian communities was; this means that the abandonment of mobility by Natufian communities led to populations becoming vulnerable and, under the pressure of resource scarcity and in response to population growth, intensifying production and eventually reach domestication (Henry, 2002). Goats and sheep, before 15,000 BC, have long been a species of interest in the Zagros. Evidence from Caves such as Shanidar D, Hazar Merd, and Mar Tarik in the Middle Paleolithic (100,000-40,000 BP) suggests that these two species, mainly mature and at older ages, are being hunted more than other animals. In the upper Paleolithic (40,000-

20,000 BP), hunting of sheep and wild goats continued extensively due to the findings of caves such as Shanidar C and Ghar-i Khar and Yafteh (Matthews et al., 2013; Matthews, 2000; Hesse, 1989; Hole and Flannery, 1967). Hunting of these species continued in the Epi-Paleolithic period with the same intensity and even more; so goats and sheep were not the species that early Neolithic communities suddenly became interested in after the end of the Younger Dryas, but there are at least 100,000 years of historical memory in the use of them.

On the other hand, goats and sheep were not only considered for sustenance but also have other benefits. It seems that the dungs of these animals were of great importance for the communities of this region. By studying animal remains in the Ganj Dareh, Brian Hesse states that the desire to use goat dungs as fuel has led to gathering them in a closed space before domestication (Hesse, 1984; Zeder & Hesse, 2000). In the lower layers at the Sheikh-E Abad and Jani, there is no report of animal dungs as fuel, however, in the upper layers, 8000 BC, the dungs of herbivores is mentioned next to wood charcoal; the supply of this

animal fuel through the keeping them at the Sheikh-E Abad site has also been confirmed (Matthews et al., 2013; ShahackGross, 2011). In Chogha Golan from layer AH III, 8100 BC, the first evidence of the use of dungs for fuel or construction is observed, which raises the possibility of keeping animal species on the site for easy access to this material (Riehl et al., 2015). Evidence of the use of caprine dungs for fuel has also been found in Bestansur (Elliot, 2020). At Ali Kosh, in Ali Kosh B1 phase, carbonized evidence of goat or sheep dungs, possibly used as fuel, was found inside a building space, next to a wall that was filled with ash (Hole et al, 1969).

Let`s return to the main question; when was human culture ready to domesticate the outdoor wild, the “nature”? As stated, Watkins sees the emergence of architecture as a symbolic behavior. Like Watkins, who compared the Epi-Paleolithic and Neolithic periods, if we look at these periods in the region, we see that a significant architectural change. In the Epi-Paleolithic period, communities lived in caves and rock shelters and somehow shared their habitat with other animals; but during the transition to the

Neolithic period and domestication, human-made rectangular and circular architectures appeared. All sites with symbolic horns/antlers and skulls in this region are present in human-made architectures dating back to after 10,000 BC. We do not know when and where exactly these new architectures (circular and rectangular) appeared -although the cold climate of the Younger Dryas can be a good reason- yet it shows that the new architectures are the result of the importance and human's deep thoughts about where they live. These new architectures later led to the formation of certain socio-economic-symbolic behaviors, such as the personal storage of resources, pens and barns for keeping animals, the formation of personal and private space inside the communities, and the construction of public buildings and other behaviors; Therefore, the goal of the new architecture was not just an innovation in response to climate change and escape from the cold, but, as said by Cauvin, was a symbolic behavior, voluntary and raised from the psyche of society, resulting from a change in thoughts and lifestyle based on climate and environment changes.

Need is a very powerful reason for the formation of human behaviors and during the transition period from Epi-Paleolithic to Neolithic (Neolithization period) we see the emergence of such behaviors in the region. The society's need for species whose horns/antlers and skulls are symbolically used in architecture is clear. As mentioned earlier, the communities of this region have been hunting wild goats, sheep, deer, and boars more than any other species since about 100,000 BP. This indicates their trust and needs for these species to provide sustenance. In addition, the use of goat and sheep dungs as fuel, which its evidence has been observed in the region, can also be a reason for the urgent need of these communities for such species. This need arises from the frequent burning of wood and trees and the destruction of the environment during this period (Matthews et al., 2013). Leaving the caves and living in new places with new architecture, probably made intervals, between the communities and the territory of these wild species that they desperately needed in terms of sustenance and fuel, that did not exist before; Therefore it seems that at this point in their lives, these communities thought about keep

species such as goats, sheep, and possibly boars in pens and barns, because of the benefits and perhaps that they are more easily accessible and manageable than other animals. Keeping of these species causes societies to leave behind the annual mobility cycle and humans change the animals' feeding, annual mating, and breeding; therefore, the need to provide plants such as grains and legumes and intervention in annual mating and breeding formed by humans, which in turn has a great impact on the domestication of both animals and plants (Riehl et al. 2012; Matthews et al., 2013).

Weber believes that man is inherently authoritarian and that authority is part of man's inexhaustible desires. Social theoreticians have always been interested in going a little further than usual and using a social motivational model to explain a social structure in which the importance of different methods of stimulating human motivation is addressed; therefore, authority, in the most general sense, is the ability to pursue and achieve goals by dominating the environment and society (Weber, 1968: 53). Human's domination of the wild outside world can be seen in the issue of his authority-seeking. The

new way of life that was formed by leaving the cave and living in new architectures made humans realize their authority of changing the surrounding environment. Living in caves and rock shelters (and perhaps feeding on carcasses leftover, hunting by other animals) placed them almost on the same level as animals.

But now humans had a personal and special space which was the result of their thought and the change of the surrounding environment; humans reach to understanding (culture) that they have the authority to change their environment as they please. They now had the choice of what kind of animals could live next to them. On the other hand, the need for food and fuel still forced him to choose the most suitable and easy species, like wild goats, sheep, and boars, for this purpose; therefore, now they had a choice, a subject that had previously been denied to them by environmental and climatic conditions. There was a change of authority in keeping these wild species. They no longer had to travel miles away from home to hunt these species and suffer a lot, but now they had these animals by their side and used them whenever and however they wanted; In confirmation of this ability, humans brought the fangs,

horns/antlers and skulls of these animals into the houses as a proof of their authority and took control of them. Humans brought the wild outside world, such as goats, sheep, boars, barley, wheat, and grains (nature) into his domestic world, houses, and residential spaces, made by their thoughts and hands, and gradually made them part of their domestic world (Culture).

## **Conclusion**

Neolithization is the process by which communities move from hunter-gatherers to food production from domesticated species, and the process that leads to this final event is called “Neolithization” or “Transitional Neolithic”. In most cases, researchers and archaeologists look for climatic, environmental, demographic, and technological reasons to explain this event, and neglect the role of humans and their thoughts and choices; Neolithization, on the other hand, is not a linear event, but the result of a set of nonlinear causes that in some cases lead to the domestication and production of food from domesticated species (Neolithic) and in some cases not. According to processual and post-

processual archaeologists such as Hodder, Cauvin, Watkins, Hyden, etc., the Neolithic must first be formed in the minds of societies and prepare them culturally, and then occur in the materials and environment around them. This cultural readiness of societies can be seen in the symbolism and abundant symbolic use of materials in this period compared to the previous period, Epi-Paleolithic.

East of the Fertile Crescent, especially the Central Zagros (Iran and Iraq), is one of the areas where evidence of domestication of animal species such as goats and sheep has been observed. The sites under discussion in this region include the Zawi Chemi Shanidar, Asiab, Sheikh-E Abad, Ganj Dareh, Bestansur, and Ali Kosh compared to the Epi-Paleolithic period, indicate a set of symbolic behaviors using a wide range of materials. Burials, human and animal figurines, ornaments, and tokens are evidence that in the transitional and early Neolithic periods appears in the collections of cultural materials of the societies. The peak of this symbolism can be considered the use of animal's horns/antlers and skulls that can be seen in new spaces, early architectures (circular and rectangular). Leaving the caves and using



human-made architectural structures, they realized their authority to change the environment; in this way, human beings formed the world inner and domestic of the village. In the next step, humans tried to bring the wild outdoor world of "nature", by keeping wild species such as goats, sheep, and boars beside them, which in Hodder words, is "culturalization the nature," and this led to a concentration on the cultivation of wild plants

and, therefore their introduction into the domestic world within the village. Therefore, to emphasize their new authority and culturalization of the wild world of outdoor to the inner domestic world, humans seem to have transferred the horns/antlers and skulls of these animals into houses and architectural spaces; eventually, these wild species gradually became domesticated.

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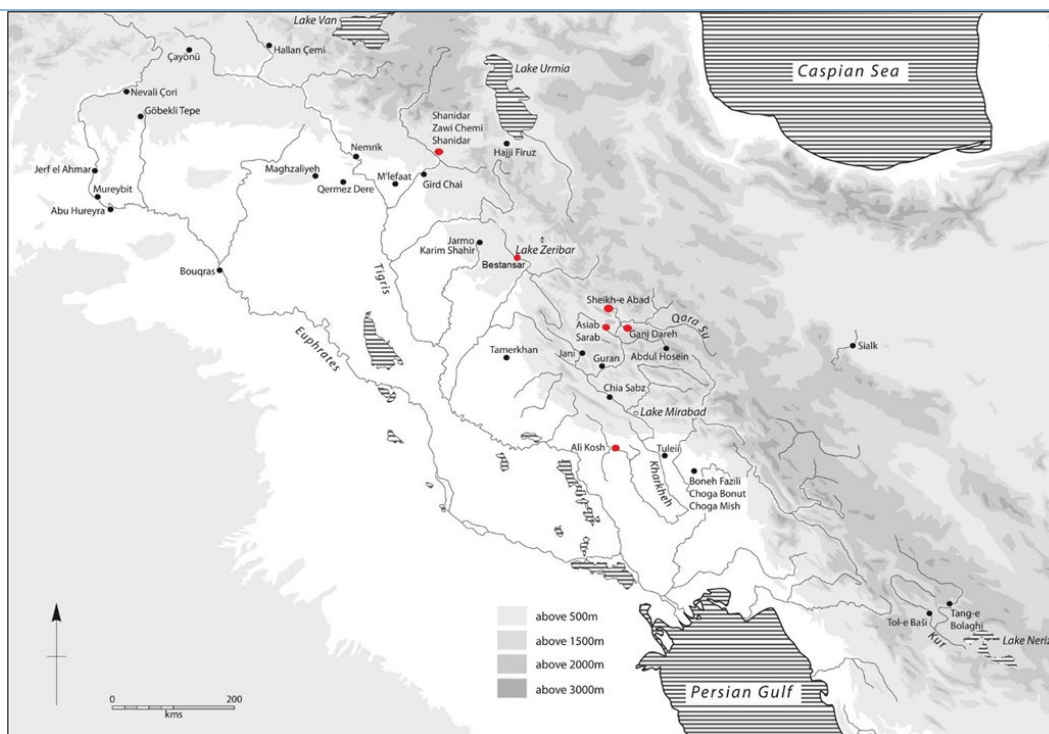
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**Table 1. sites with horns/antlers and skulls as symbolic items**

Sites	Animal	Elements	Dates	Space	Domestication or Managing Species
<b>Sheikh-e Abad</b>	Sheep, Goat	Skulls with Horns	7600-7500 B.C.	Inside of T shaped building	<b>Wild Goat Herding in Pens</b>
<b>Asiab</b>	Boar, Cattle, Deer	Horns (cattle & deer), Tooth (boar)	9750-9300 B.C.	Inside the house, on the wall (deer), on the floor (cattle), in a pit (boars)	<b>None</b>
<b>Ganj Dareh</b>	Sheep	Skulls & Horns	Late 8 <sup>th</sup> Millennium	Inside the house, on niche	<b>Domestication of Goat</b>
<b>Ali Kosh</b>	Sheep	Hornless Skull	7500 B.C.	Inside the house, On the floor	<b>Domestication of Goat</b>
<b>Zawi Chemi Shanidar</b>	Sheep	Horns	Late Epi-Paleolithic		<b>None</b>
<b>Bestansar</b>	Caprine	Horns	7000-7100 B.C.	Inside of building 5, in the corner	<b>Wild Caprine Herding</b>



**Map 1. Neolithic sites of eastern Fertile Crescent (Matthews et al., 2013)**





**Fig. 1.** cattle horn in the center of the circular structure, Asiab (Darabi et al., 2018)



**Fig. 2.** remains of wild boar, Asiab (Bangsgaard, et al., 2019)

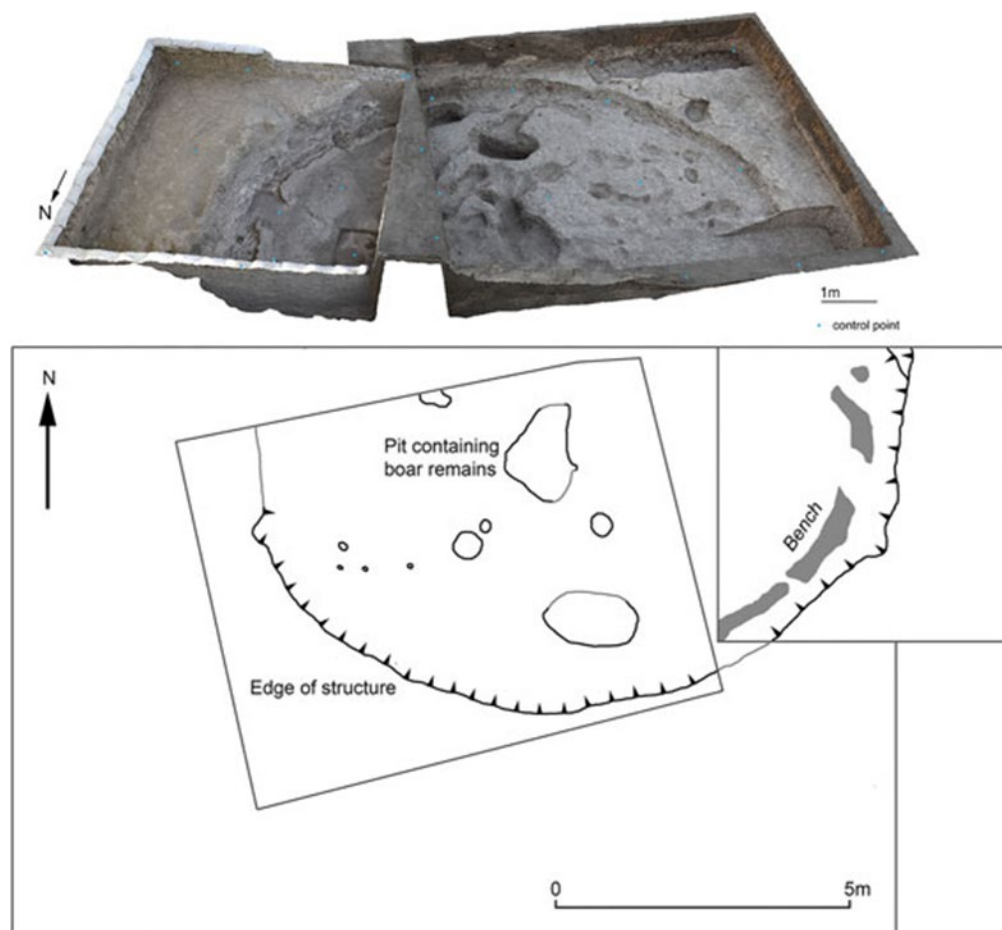


Fig. 3. circular architectural space, Asiab (Bangsgaard, et al., 2019)



Fig. 4. wild sheep horns, Ganj Dareh (Smith, 1990)

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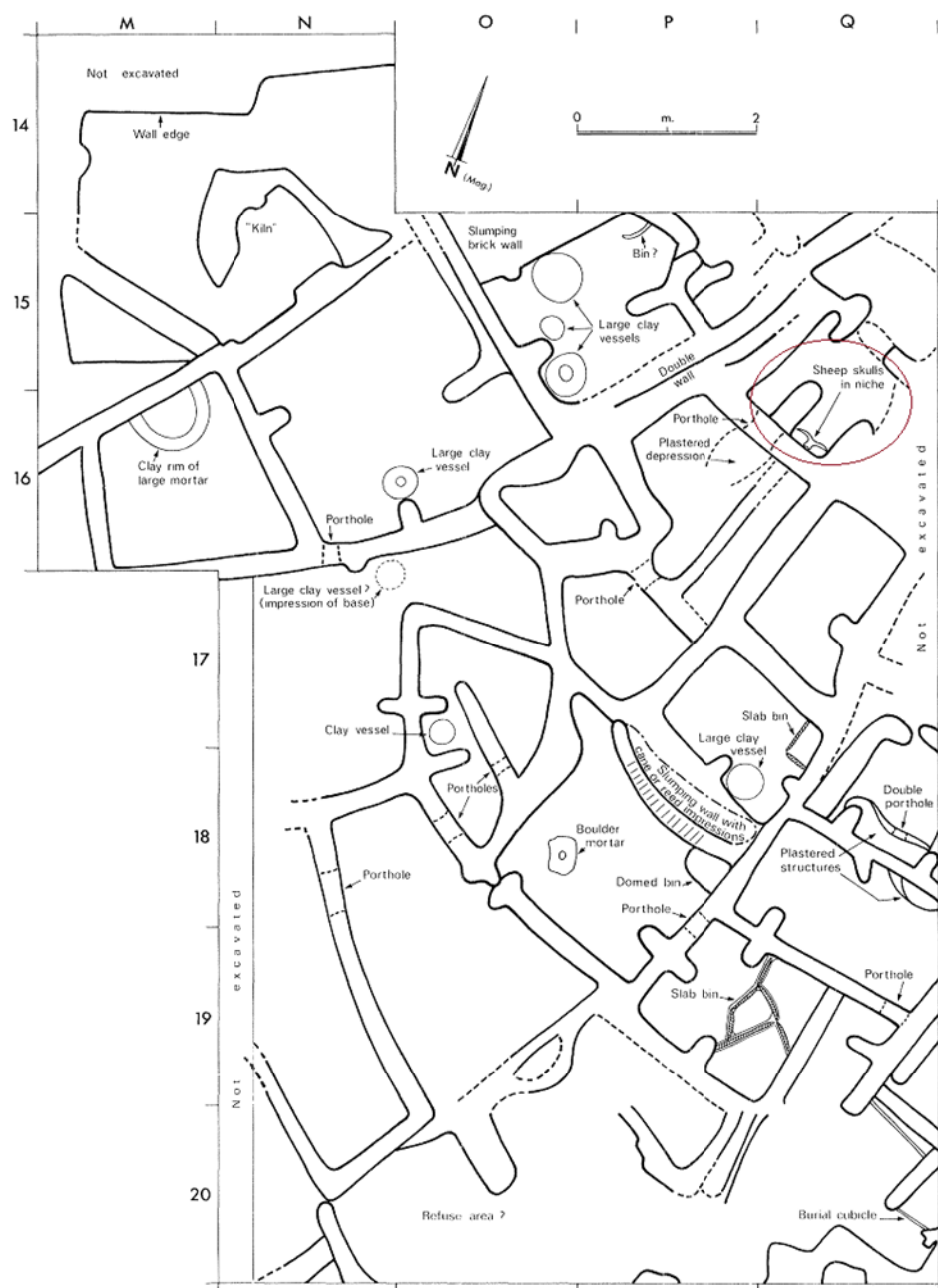


Fig. 5. the architectural plan of level D and location of the sheep horns, Ganj Dareh (Smith, 1990)





Fig. 6. skulls of wild sheep and goats in architectural space, Sheikh-E Abad (Matthews et al., 2013d)

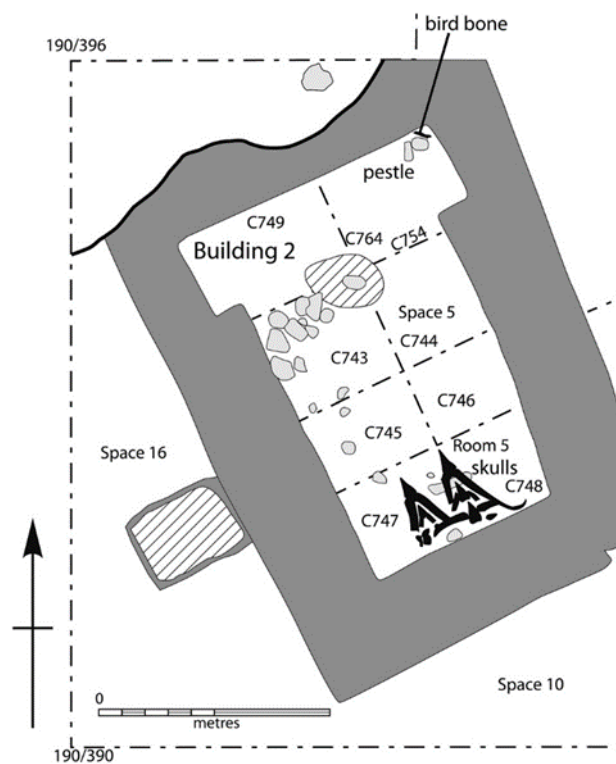


Fig. 7. T-shaped architectural with the location of skulls, Sheikh-E Abad (Matthews et al., 2013d)

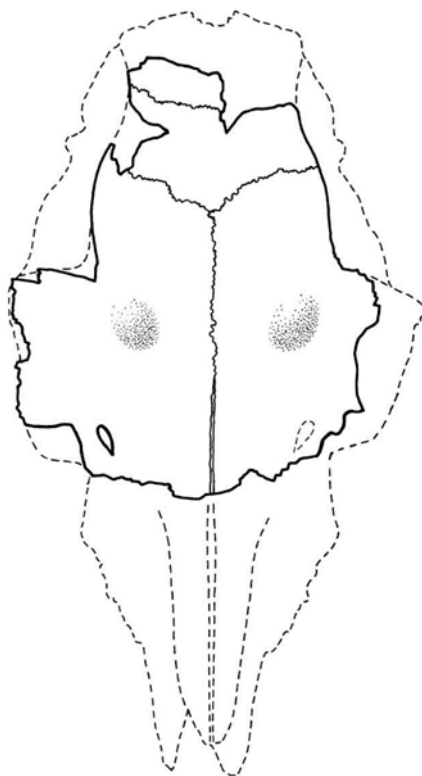


Fig. 8. a sketch of wild hornless sheep skulls, Ali Kosh (Hole et al., 1969)

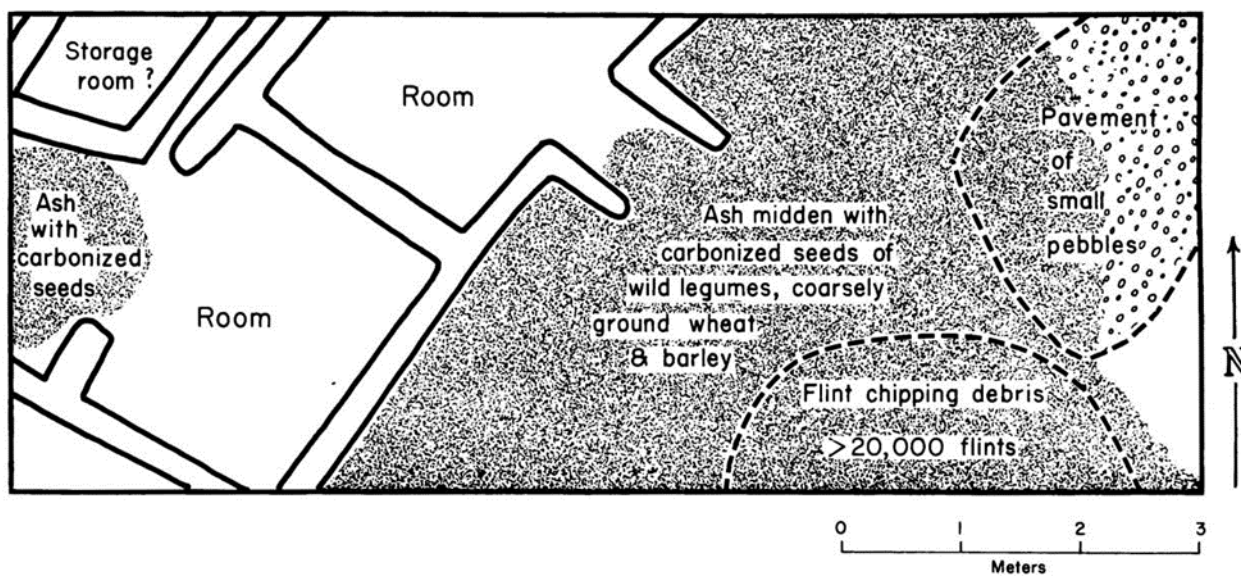


Fig. 9. Architectural plan of Buz Mordeh C2, Ali Kosh. Wild sheep skull remains found on the left along with ash and carbonized grains (Hole et al., 1969)



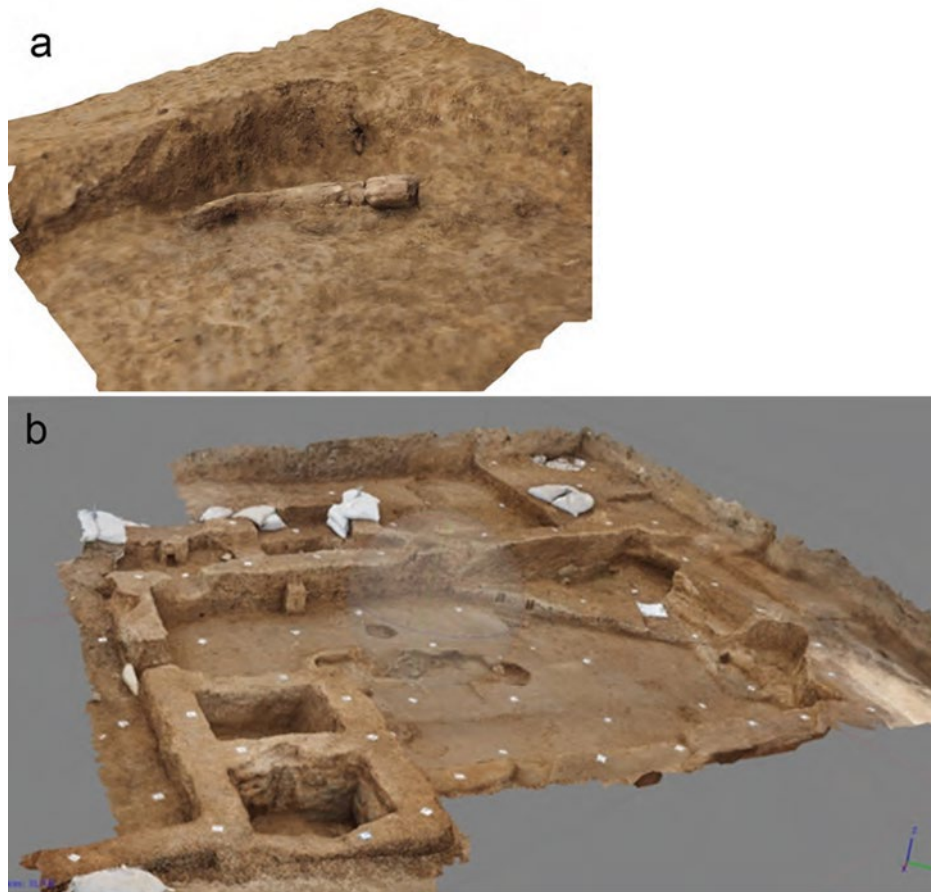


Fig. 10. a caprine horn (a); and its architectural space (b) (Matthews et al., 2020)



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## جمع‌ها و شاخ‌های آیینی، نمادهایی برای فرآیند نوسنگی شدن: شرق حلال حاصلخیزی

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**چکیده:** نوسنگی و تولید غذا از گونه‌های اهلی از مهم‌ترین موضوعات مورد بحث و مطالعه دوران پیش از تاریخ در طول حیات رشته باستان‌شناسی بوده است. از دهه ۱۹۲۰ میلادی تاکنون باستان‌شناسان تلاش زیادی برای توضیح این رخداد بزرگ که حیات بشر را بعد از میلیون‌ها سال شکار-گردآوری تغییر داد، داشتند. در طی این سال‌ها انواع نظریات بر پایه محورهای فناوری، زیست‌محیطی، اقتصادی و معیشتی، جمعیتی، اجتماعی، تطوری و در دهه‌های اخیر ایدئولوژیک از سوی پژوهشگران مطرح شده است. برخی از پژوهشگران معتقدند که نوسنگی و تولید غذا روندی مطلق و ناگهانی نیست، بلکه فرآیندی طولانی مدت، از انتخاب شناخت و انتخاب گونه‌ها، مدیریت و اهلی‌سازی وابستگی متقابل را شامل می‌شود؛ به این فرآیند نوسنگی شدن اطلاق می‌شود. روند نوسنگی شدن تنها یک اتخاذ یک روش معیشتی جدید به علت تغییرات آب‌وهوایی و محیطی و جمعیتی نیست بلکه آغاز تغییرات ذهنی و جهان‌بینی‌های انسانی است. انسان در این دوره رفتارهای جدیدی از جمله رفتارهای آیینی از خود بروز می‌دهد که می‌توان در تدفین‌ها و دست‌ساخته‌ها و معماری‌ها مشاهده کرد. قرار دادن شاخ حیوانات (چه اهلی و چه وحشی) در فضای معماری یکی از این رفتارهای آیینی است. این رفتار نمادین در محوطه‌های حلال حاصلخیزی، از لوانت در غربی‌ترین تا جنوب غرب ایران در شرقی‌ترین سرحد‌های این پهنه یافت شده است. برخی از پژوهشگران معتقدند این رفتار برای کسب قدرت از جانور مربوطه بوده و برخی بر این عقیده‌اند که انسان‌ها سعی داشتند با این روش‌ها به کنترل دنیای وحشی بیرونی در دنیای اهلی درونی خود اقدام کنند. در این پژوهش نگارندگان سعی کرده‌اند تا از منظر محورهای ایدئولوژیک نوسنگی شدن به تحلیل این نوع رفتار بپردازد.

**واژه‌های کلیدی:** نوسنگی، نوسنگی شدن، اهلی‌سازی، ایدئولوژی، آیین، حلال حاصلخیزی، لوانت، زاگرس.