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# Eye Beads from the Indus Tradition: Technology, Style and Chronology

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## Abstract
The "eye-bead" is a distinctive form of bead or pendant that has circular or concentric circular patterns that can be interpreted as representing one or more eyes. This article investigates the origin and development of eye beads in the Indus Tradition of northwestern South Asia. Although the origins of the eye-bead may date to around 7000 BC at sites such as Mehrgarh, the development of numerous different types of eye beads is clearly associated with the urban period of the Indus Civilization. The function of the eye bead cannot be determined from the archaeological record, but ethnohistorical evidence suggests that is was used to protect the wearer from evil thoughts and in

## Introduction
The term "eye-bead" is a very general label that can be applied to any bead or pendant that has circular or concentric circular patterns that can be interpreted as representing one or more eyes. Oval or lenticular patterns are also included in this general pattern, but the circular forms are the most commonly represented in ancient eye beads. Various types of eye-beads and pendants, as well as finger rings with eye motifs are used in many parts of the world as protective ornaments to ward off evil spirits or evil thoughts that might be directed at the wearer. This use is well documented historically (Beck 1928; Dubin 1987; Elsworthy 2004) and we can assume that this practice has its origins in the prehistoric period when the first eye-beads were being produced.

The discovery of beads with distinctive eye patterns is well known from the early excavations at the sites of Mohenjo-daro (Marshall 1931) and Harappa (Vats 1940), Pakistan, but a comprehensive study of their production and use as well as their chronology has never been undertaken. The excavations at the site of Harappa conducted by the Harappa Archaeological Research Project

(Dales and Kenoyer 1991; Meadow and Kenoyer 2005) have resulted in the recovery of a large assemblage of well documented beads that are being studied to understand the overall chronology and contexts for the use of different types of beads (Kenoyer 2005). This paper will provide a preliminary discussion of the eye beads found at Harappa and some other sites, as well as the variation in production and style over time. Very few eye beads have been found in primary contexts at Harappa where their function can be determined, but the use of these beads can be determined on the basis of depictions on sculptures, such as the so-called "Priest-King" from Mohenjo-daro, as well as contemporaneous civilizations. Additional information can be obtained from the use of eye beads in later periods and ethnographic examples.

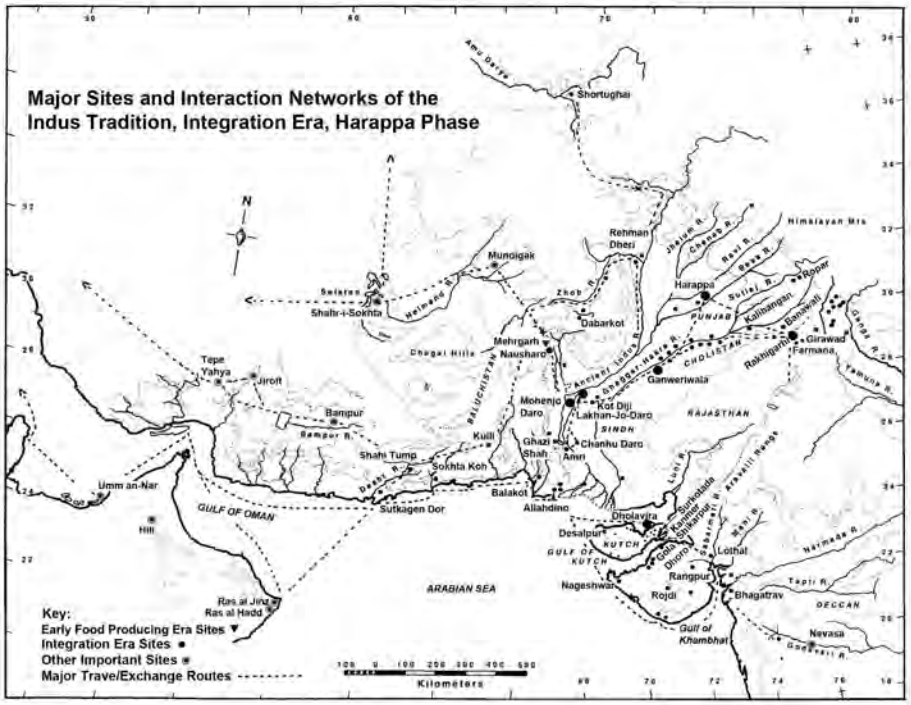


**Figure 1. Major Sites of the Indus Tradition**

**Table 1. Chronological Framework of the Indus Tradition**

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|---|---|---|
| **Foraging Era** | 10,000 to 2000 BCE | Mesolithic and Microlithic |
| **Early Food Producing Era** | 7000 to 5500 BCE | Mehrgarh Phase |
| **Regionalization Era** | 5500 to 2600 BCE | Early Harappan Phases Ravi, Hakra, Sheri Khan Tarakai, Balakot, Amri, Kot Diji, Sothi, etc. |
| **Integration Era** | Harappan Phase | 2600 to 1900 BCE |
| **Localization Era** | Late Harappan Phases | 1900 to 1300 BCE Punjab, Jhukar, Rangpur, etc. |

**Chronology**

In order to better document the creation, use and changes in eye-bead styles over time, it is important to clearly define the major chronological periods of the Indus Tradition of the northwestern subcontinent. The Indus Tradition represents the long trajectory of cultural development that includes the early settling down of hunter-gatherer communities and the eventual development of agriculture, animal husbandry and specialized craft technologies (Kenoyer 1991; Kenoyer 2008). The Indus Tradition is divided into five major Eras representing distinct subsistence practices, socio-economic and political-ideological developments (Table 1). Each Era is subdivided into Phases that are defined by pottery styles and also distinctive artifact styles. The regions encompassed by such diagnostic artifacts can be a small region or valley, or larger areas that encompass many regions. This framework provides an optimal tool for making broad regional comparisons without the confusion of individual site sequences and internal chronologies.

**Early Bead Making and "Eye Beads"**

Although no clear examples of eye beads have been reported from Upper Palaeolithic sites, the origins of the technologies used to make beads of shell and stone can be traced to the Upper Palaeolithic period of South Asia, some 10,000 to 30,000 years ago (Kenoyer 1992). Circular depressions in rocks that are situated in prominent locations on the landscape have been interpreted as eye motifs in the Swat Valley, but since there is no way to date their production or use, it is difficult to determine when they may have been made (Olivieri 2011). The use of

circle motifs and eye-like designs has been documented from rock art in areas along the Indus (Jettmar 1991; Dani 1995), as well as in peninsular India (Wakankar 1987), but it is not possible to assign specific meaning to such abstract motifs due to the lack of cultural context for interpretation (Haarmann 2005). It is possible that some of these motifs may reflect concepts of eye motifs, but this needs to be demonstrated with future studies.

There is no direct link between the Upper Palaeolithic cultures of the northwestern subcontinent and the later Indus Tradition, however, there is a possible connection between foraging communities of the Mesolithic or Microlithic (Misra 2002) period and later Indus cultures. These traditions are associated with the Foraging Era (Table 1) and were the communities that developed specific adaptations and technologies that contributed to the later developments related to the Indus Tradition. These communities were collecting raw materials and developing specific technologies such as stone working and fiber processing that would have been key to the later techniques associated with bead and ornament production.

The widespread development of bead manufacturing technology using soft stones and marine shell begins around 7000-5500 BC during the Early Food Producing Era of the Indus Tradition. This period is commonly referred to as the Neolithic, and represents a time when people began settling down and developing new subsistence strategies associated with domestic plants and animals and specialized craft technologies (Shaffer 1992). The most important excavated site associated with this Era is the site of Mehrgarh, Balochistan (Jarrige and Meadow 1980; Jarrige et al. 1995).

Beads of many different materials have been found in burials and in domestic areas at the site of Mehrgarh during the pre-ceramic and early ceramic phases (Mehrgarh Period 1 and 2). Various types of marine shell and soft stone, particularly steatite, were made into beads using chipping, grinding and drilling techniques that set the foundation for later developments using harder varieties of stone. During this early period no examples of eye beads have been reported from the site, but there are shell beads made from the apex of the Conus shell that have distinctive patterns which may have been used as a form of eye bead. These beads were probably made in some other settlement nearer

the coast of Balochistan and brought to the site in finished form (Kenoyer 1995). They were made by breaking off the body of the shell and leaving only the apex that was shaped into a rhomboid or diamond shape with the hole running laterally through the bead (Figure 2 and 3).

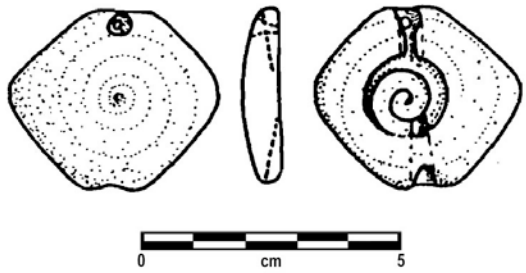


Figure 2. Conus Shell Beads from period 1, Mehrgarh

Figure 3. Indo-Pacific Conus shells with natural designs and replicas of ancient beads showing what they may have looked like originally

After being buried in the site for thousands of years the natural colors have disappeared, but it is possible to reconstruct what they would have looked like by studying modern Conus shells similar to those found along the Makran coast (Figure 3). The spiraling layers of the shell form a concentric circular pattern and the natural colored patterns of the shell may have contributed to an "eye" pattern.

During the subsequent Regionalization Era (5500-2800 BC) many different regional cultures emerged throughout Balochistan, the Indus Valley and adjacent regions. This is the time when we also see the emergence of Early Harappan communities who set the foundation for the later Harappan urban phase (Mughal 1990). Different regions have specific pottery and artifact traditions that include the development of new technologies of production. There are new techniques of drilling with hard stone drills (Kenoyer and Vidale 1992) and new ways of processing raw materials, such as the firing of steatite at high temperatures (>1000° C) to harden it and make it into a more durable material (Vidale 1995), and the manufacture of artificial materials such as glazed faience (Barthélemy de Saizieu and Bouquillon 1997; Barthélemy de Saizieu and Rodière 2005; Kenoyer 2008).

The earliest beads with circular patterns that could be interpreted as eye beads are found in the Kot Dijian phase at sites in the Indus valley, dating to between 2800-1900 BC (Table 1). Two different types of ornaments with circle and dot designs are found during the Kot Dijian Phase at the site of Harappa as well as some other sites in the Indus region. The first example is a carved steatite bead or button seal with circular motif (Figure 4a). This bead reveals an important new technological development in that the motifs were carved onto the soft surface of the bead and then subsequently fired and glazed to harden and color the surface. A thin silica glaze that may have been light blue or blue-green was found on the surface of the bead. The glaze is now eroded away, leaving only the pattern of circles that may reflect an eye motif. Two holes were drilled from the side of the ornament and it is assumed that the patterned surface would be visible when worn as part of a bracelet, necklace or headband.

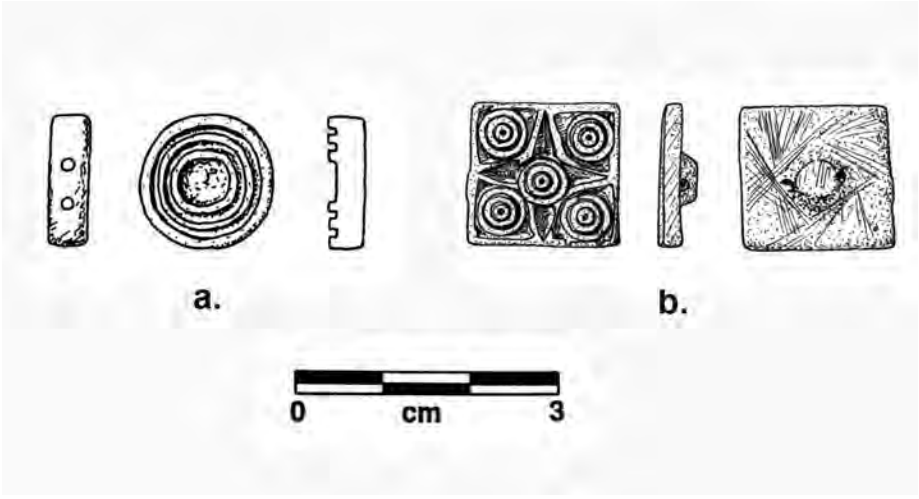


Figure 4. Kot Diji Period button seals, Harappa, Period 2, 2800-1900 BC.

Another variety of button seal with multiple circle and dot motifs could represent another variation on the eye motif (Figure 4b), though some scholars might interpret the circle and dot as a stellar or solar motif (Parpola 1994). This type of button seal was also carved from soft steatite and then glazed with a blue-green glaze that has eroded away, leaving a white rough surface. The example from Harappa has four circle and dots around a central circle and dot, with a four-pointed star pattern separating the five circles. Similar glazed steatite button seals with various patterns and combinations of circle and dot motifs have been reported from the sites of Rehman Dheri, Pakistan (Durrani et al. 1995), as well as Kunal, Haryana, India (Khatri and Acharya 1995; Khatri and Acharya 2005). This widespread distribution suggests that the tradition of making these seals and these designs is associated with the Kot Dijian Phase that represents the incipient urbanism prior to the development of the Harappan period. The fact that these motifs were made on button seals, which are generally associated with elite communities, suggests that the motifs reflect an important ideology that was becoming widespread during this time period. The use of circle and dot motifs continues on some button seals in the subsequent Harappan Period (e.g. H 1700, H1994, H 1537)

(Parpola et al. 2010) but not with the same types of designs as seen during the Kot Dijian period.

Although the use of patterned beads is not well represented archaeologically during the Early Food Producing and Regionalization Eras, it is important to note that natural patterns in shell and carved patterns on steatite were being selected for ornamentation and that they may have set the foundation for the later development of eye motifs.

**Integration Era**

During the Integration Era, there is only one Harappa Phase that represents the convergence of many regional cultural styles into an overarching urban phenomenon. The Harappa Phase or Period III at the site of Harappa can be subdivided into three periods (IIIA, IIIB, IIIC) that represent specific stages of urban development (Meadow and Kenoyer 2005). Similar stages can be identified at the site of Dholavira (Bisht 1997; Bisht 2000) and suggest that the Integration Era was a period of dynamic development and change, rather than a period of urban stagnation and uniformity.

At the larger cities, as well as smaller sites, there is a significant increase in the variety of raw materials used for making beads, which is possible because of the discovery of harder stones that could be used to manufacture drills. The use of constricted Ernestite drills (Kenoyer and Vidale 1992; Kenoyer 2005; Prabhakar et al. 2012) for perforating raw materials such as patterned jasper and agates made it possible for Indus bead makers to select and grind natural stones to create new patterns of ornaments. Raw materials with multiple bands were chipped, cut and ground to create vertical and horizontal bands as well as circular eye designs. One of the most unique types of bead found at Harappa was in a burial of an adult male who was wearing a necklace of steatite disc beads, and three stone beads of banded agate, turquoise and orbicular jasper, along with thee small gold beads (Figure 5). The orbicular jasper bead was shaped to accentuate the circular patterns of the jasper in order to create a bead with multiple eye motifs. The eye designs on natural stones are the most difficult to create due to the rarity of specific banding patterns in the raw material. This multiple eye pattern was may have had special meaning as it was sometimes copied in

painted steatite beads (Figure 6e) and sometimes carved and inlaid steatite beads.

Figure 5. Jasper eye bead from Harappan burial, Harappa Period, Harappa

Because of the fact that natural stones with suitable patterning were quite rare, Indus bead makers developed new ways to create eye designs. One technique involved the use of an alkali paint on red carnelian to bleach the stone (Beck 1933) (Figure 6a, b, c). This technique was originally referred to as etching and this term is still commonly used in the literature, though the term bleaching is more appropriate, since the beads are not actually etched, but only painted with a paint that creates a white color where there was once a red color. The technique for bleaching carnelian is thought to originate in the greater Indus region, which includes Balochistan and Afghanistan. It first becomes common during the Harappan period and beads with one eye (Figure 6a), two eyes (Figure 6b) or three eye (Figure 6c) motifs are common at many Indus sites. The trade of these bleached carnelian eye beads extends beyond the Indus to regions to the west, including the Persian/Arabian Gulf, Afghanistan, Iran, Iraq, Syria, Turkey, and even as far as Greece (Aruz 2003). These beads also were traded to Central Asia and into the Xinjiang region of western China (Ming 1974). Another technique was to paint white steatite with red slip to create eye designs in a reverse of the application of white as seen above with the bleached carnelian beads (Kenoyer 2007) (Figure 6d, e).

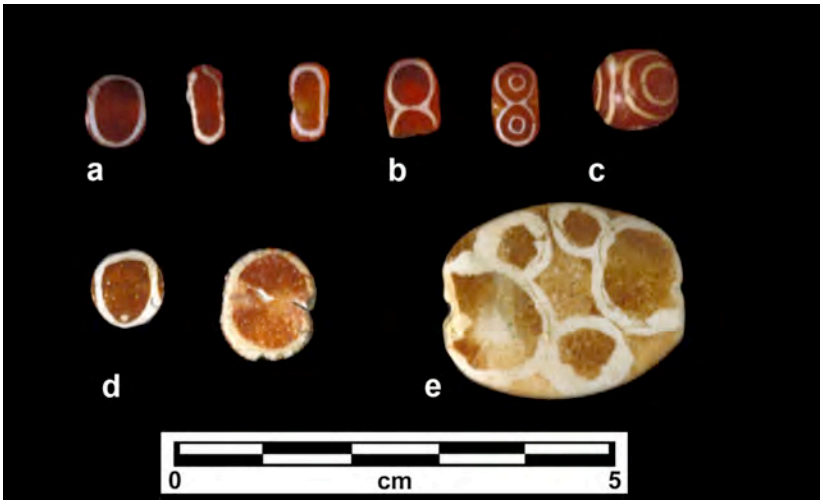


Figure 6. Bleached carnelian and painted steatite eye beads, Harappa Period, Harappa.

One of the most complex techniques used to make eye beads involved the use of red and white glazed faience (Kenoyer 2005) (Figure 7a, b). It is extremely difficult to make faience that is pure white and also a deep red-brown color and more difficult to make both glaze at the same temperature. This technique was perfected by Indus faience producers using what has been determined to be a form of iron to make the red-brown color and calcium, possibly from ground bone to make the white color (Kenoyer 1994).

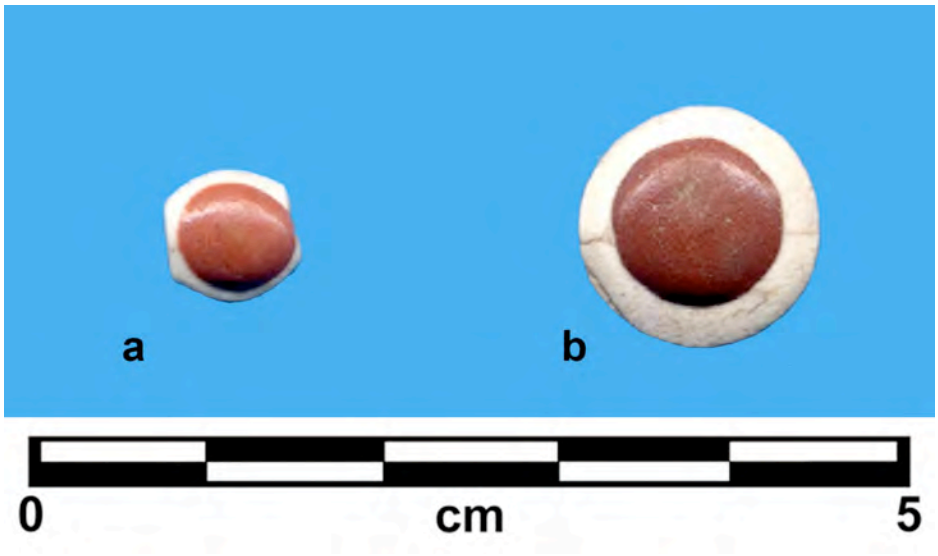


Figure 7. Faience eye beads, Harappa Period, Harappa

Composite eye beads were usually made by making inlays using red or reddish brown on a base of steatite and are reported from both Mohenjo-daro (Marshall 1931) and Harappa (Vats 1940). One rare example of different type of eye bead was found in excavations at Harappa, made from both gold and white steatite inlay. This ornament has a hole through the side and may have been worn on a headband or armband as is seen on the famous "Priest-King" sculpture from Mohenjo-daro (Figure 8).


Figure 8. Gold bead with steatite inlay, Harappa Period, Harappa.

The dramatic increase in methods to create eye designs during the Integration Era cannot be explained simply as a growth in technical expertise. There must have been a major demand from consumers for the production of eye beads and this assumes that there was a very specific belief that these beads had some important quality that was good for the person who wore them. We cannot know for sure what this property was, but based on later uses, we can assume that it was a form of protective amulet to ward off evil. The fact that this need emerges with the rise of urbanism is something that needs further research, but it does suggest that the development of urban society, with many different communities and also probably people with different belief systems, brought with it many uncertainties and perceived threats. The use of eye beads may have been one response to provide a generic protection to the wearer against any and all evil influence in these new urban settings.

Figure 9. Steatite sculpture with eye bead ornaments, Mohenjo-daro. (courtesy National Museum, Karachi and Department of Archaeology and Museums, Govt. of Pakistan.)

**Localization Era**

During the Localization Era, or Late Harappan Period (1900-1300 BC) the gradual decline of urban integration resulted in the breakdown of long distance trade and the reorganization of socio-economic and political-ideological systems. The disappearance of the Indus script, along with many diagnostic styles of Indus artifacts suggests that there was a major reorganization of ideology and political structures. However, many technologies of the earlier period continued to flourish, particularly the manufacture and artificial coloring of stone beads and the production of multicolored glazed faience beads. During the Late Harappan Period the use of eye beads did not decline but appears to have become more diverse.

One important discovery at Harappa was a small pot filled with beads that can be securely dated between 1900-1700 BC. This small pot of beads had 133 beads, pendants and other objects, including important varieties of colored faience and stone eye beads that belong to the Late Harappan Period (Figure 10).


Figure 10. Late Harappan pot filled with beads, Late Harappan, Harappa.

One new type of stone bead is black and white banded agate that was not commonly used during the Harappan period, and may be derived from a source to the east in the Ganga-Vindhya regions (Kenoyer 1998). This raw material with its distinctive banding was used to create single (Figure 10 and 11a, b) and double eye beads (Figure 10 and 11c) with white lines and black background. The Harappan bead makers had already experimented with black and white banded rocks to make zone beads and they also copied this pattern in faience using black and white faience as well as brown and white faience. However they did not use these patterns to make eye beads. This distinctive pattern of black and white eye bead design can be seen as a direct contrast to the red and white eye beads of the Harappan period and could indicate a new set of beliefs or new ideologies that were emerging during the Late Harappan period.

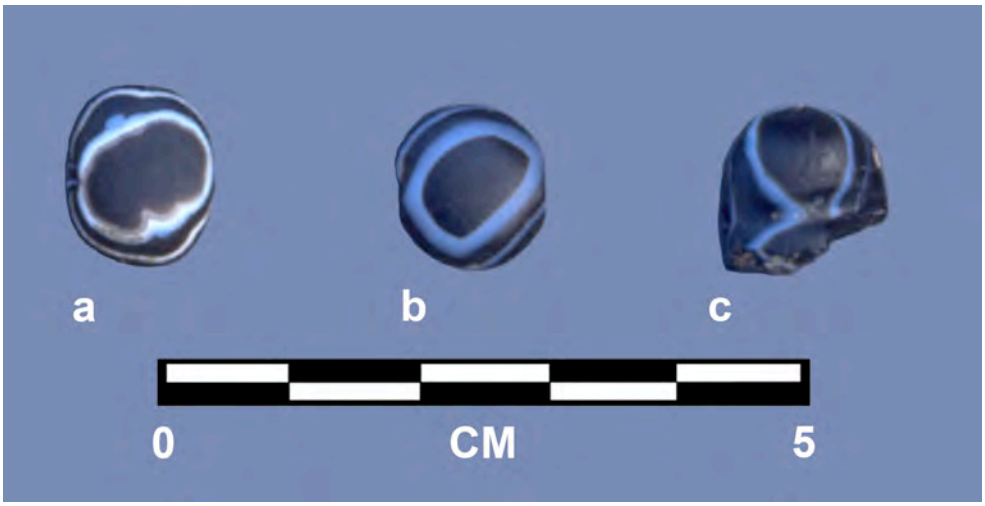


Figure 11. Black and white agate eye beads, Late Harappan, Harappa.

Advances in faience technology during the Late Harappan resulted in new colors, such as deep lapis blue as well as purple colors (Kenoyer 2005). The beads made with these colors include beads with white circles or eyes on purple background. Numerous faience beads with various types of eye designs have also been reported from the site

of Sanauli, near modern Delhi, India (Sharma et al. 2004). The types of bead designs that were made at Sanauli using faience included multiple eye beads and layered eye patterns that had never been used during the Harappan period. These innovations in stone and faience technology during the Late Harappan period began a new trajectory in eye bead design that continued on into the Early Historic period, circa 600BC to 300 AD. During the Early Historic period eye beads were made using a number of new technologies, including the use of artificial black and white designs as well as with multiple colors of glass (Kenoyer 2007). A more detailed discussion of the Early Historical continuities will be presented in a future article.

**Summary and Conclusion**

Based on the study of published reports from sites throughout the Indus region it appears that the use of shell beads with concentric circular patterns that could be interpreted as eyes begins around 7000 BC at sites such as Mehrgarh. Later, during the Regionalization Era or Early Harappan Period, new forms of eye designs were created using natural stones and also carved steatite beads and button seals. The use of eye motifs became more widespread during the urban period and continued to become more elaborate during the late Harappan and Early Historic periods.

The development and changing styles of eye beads during this long trajectory can be interpreted in many different ways. If eye beads were used in the past as they are today, as protective amulets against the "evil eye" or malevolent thoughts, then their connection with Indus urbanism needs to be more closely examined. Most people think of urbanism and the rise of cities as a positive development and a form of advancement in human culture. It is possible however, that the presence of larger and diverse populations in the cities may have resulted in superstitions regarding the "evil eye" or "nazar". This may have prompted the development of protective ornaments such as the eye bead. Even after the end of the major urban Indus period, the need for such ornaments does not seem to have declined. On the contrary, the production and use of eye beads increased. Based on archaeological surveys along the Indus and the now dry Ghaggar-Hakra-Saraswati River Valleys (Mughal 1982; Mughal 1990; Shinde et al. 2008; Kumar

2009; Dangi 2010), there is clear evidence for the continuity of Late Harappan urban centers and a vibrant local culture (Kenoyer 2005; Kenoyer 2006). The new evidence from the beads suggests that there was a continued need for protective amulets such as eye beads and provides further support for the idea that there were large and diverse populations during this time period. Instead of a decline and collapse, the Late Harappan Period represents a gradual transformation that sets the foundation for later social and political developments during the Early Historic Period (Kenoyer 2005; Kenoyer 2006).

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