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JONATHAN MARK KENOYER*

INDUS SEALS: AN OVERVIEW OF ICONOGRAPHY AND STYLE

INTRODUCTION

This paper will examine the nature of Indus seals and examine the different aspects of seal iconography and style in order to better understand their overall role in the Indus civilization. Although seals have a very specific function that involves the stamping of a design or motif on another material, they also represent a unique aspect of graphic design in the Indus civilization. Many of the designs and motifs seen on seals have links to earlier pottery motifs and petroglyphic carvings that date to earlier periods. Other motifs appear to have been invented or modified during the period of the Indus cities, to meet the needs and reflect the ideology of the Indus people.

Looking first at the origins of graphic art in the greater Indus region, we can see that its roots extend deep into the prehistoric periods of ancient South Asia. Cave paintings dating from 30,000 to 10,000 years ago found in Balochistan and throughout peninsular India were made with mineral pigments such as charcoal and ochre. Large boulders with geometric and naturalistic motifs created by pecking or incising (called petroglyphs) have been found along the upper Indus River and in various parts of Balochistan and Afghanistan. The earliest petroglyphs date from around 10,000 years ago and continued to be made through the prehistoric and protohistoric periods (Bandini-König, 1997; Bednarik, 2002; Hassan, 1996). Many of the motifs appearing on cave paintings and petroglyphs represent aspects of the natural environment in which people lived, plants, animals, mountains, and the people themselves. Abstract geometric and floral symbols were also created and though it is not possible to know the precise meaning of these symbols, they probably reflected religious beliefs or ideologies about the structure of the universe or of society as a whole. Stepped cross symbols may have indicated sacred mountains, circle and dot motifs could have been astral or solar symbols, while the endless knot and stylized trees could have indicated concepts such as eternity and the branching tree of life that encompasses all creation.

In later historical times, travelers, pilgrims and invading armies carved their messages and symbols on top of earlier prehistoric motifs, revealing a continuity in the use of some symbols over thousands of years. Many of these same symbols were repeated on painted pottery, and various types of ornaments made from shell, bone, ivory, stone and metal. These various categories of preserved materials provide a rich repertoire of graphic design from the prehistoric and protohistoric periods, but one type of object, the seal, stands out as particularly important. The seal is a unique type of object because it was used both as an ornament that bore a design, as well as a tool to replicate that design or symbol on other surfaces.

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Archaeologists who study seals usually divide them into two basic types, stamp seals that are pressed vertically to create a design and cylinder seals that are rolled across the surface of a material to create an endless repetition of a design. Both stamp and cylinder seals were created and used in different parts of ancient South Asia, but in this essay the focus will be on stamp seals of the Indus valley region (Figure 1). Stamp seals can be subdivided into two major types based on their design and possible function: button seals and intaglio (reverse image) seals.

Button seals are generally decorated with deeply carved geometric, floral, animal or rarely human motifs. These objects have one or more perforations through the body of the seal or a knob (boss) on the back with a small perforation so that the seal can be worn on a cord or sewn onto clothing. These seals were usually made of soft materials such as bone, soapstone or terracotta. While it is not certain if the early button seals were ever used for impressing clay, later examples were clearly used to seal containers.

Intaglio or reverse image seals were designed specifically for pressing into clay, stamping on textiles or foods such as bread, or even on the human body. They represent a unique form of graphic design that could be used to create multiple sets of identical images. Once a seal was created, the owner of the seal could create the same motif again and again, either to indicate personal ownership or control of another object such as trade goods. If the seal symbol had a ritual meaning the sacred sign could be stamped on goods for protection or good luck.

These various types of button seals and intaglio seals, used either as ornaments themselves or as tools for creating designs and communications on other surfaces, served as visual symbols to communicate messages or ideas to the viewer. All communities use graphic design as a form of communication that can be expressed non-verbally and recognized by both literate and non-literate viewers. In addition to their non-verbal message some designs may represent one or more verbal expressions. These graphic symbols and their various verbal meanings are used to reinforce and legitimize the social order and the ideology of a community. The precise meaning of specific symbols is difficult to determine as symbols have different meanings to different people and a single symbol may represent many different verbal expressions. However, it is possible to gain some insight into the general meanings of ancient symbols by looking at how such symbols have been used in later cultures in South Asia and other world regions (Kenoyer, 2000; Kenoyer, 1995).

Button seals with geometric, floral and narrative motifs began to be used in early prehistoric agricultural settlements such as Mehrgarh (circa 3300 BC) (Figure 1) (Jarrige, 1991) and continued in use throughout the prehistoric and proto-historic periods. By around 2800 BC, the first seals with script combined with various animal motifs were created in the proto-urban settlements of Harappa (Kenoyer and Meadow 2000) and Rehman Dheri (Durrani, 1995). During the period of the Indus Civilization (2600-1900 BC) a wide variety of seals combining various design motifs with Indus script were created and used at large

urban centers such as Mohenjo Daro, Harappa and Dholavira, as well as at smaller towns and villages. With the decline of the Indus cities, the Indus script disappeared, but button seals without script continued to be used throughout the Late Harappan times (1900-1300 BC) and on into the Early Historic period (circa 600 BC). The continuities and changes in styles of seals reflect larger social, economic, religious and political processes that were going on in the larger Indus region.



Fig. 1: Major sites of the Greater Indus Region.

In the following essay we will examine the origin and development of graphic design on seals of the greater Indus region. Two major categories of Indus seals will be presented; button seals and intaglio seals. A range of geometric, floral or naturalistic and narrative motifs will be presented in order to reveal the complexity of Indus design repertoire. The precise messages being communicated by these motifs is not possible to determine, but some general interpretations will be presented along with some suggestions on future research directions.

BACKGROUND AND CHRONOLOGY

The greater Indus Valley of what is now Pakistan and western India was the birthplace of the Indus Civilization (2600-1900 BC), also known as the Harappa Culture (Kenoyer, 1998), an urban society that was contemporaneous with the great urban civilizations of ancient Egypt, Mesopotamia and China. The roots of the Indus Civilization can be traced to the early Neolithic settlements located along the edges of the Indus Valley,

such as the site of Mehrgarh in Balochistan and later Early Harappan (Chalcolithic) cultures that grew up along the banks of the Indus and Ghaggar-Hakra Rivers and their tributaries.

The earliest button seals are found during the later Chalcolithic period at starting around 3300 BC at Mehrgarh (Period V) (Jarrige, *et al.* 1995) and also at the site of Harappa (Ravi Phase, circa 3300 BC) (Kenoyer and Meadow 2000). These earliest examples of button seals may have served as ornaments sewn onto clothing or worn as amulets. These seals were generally made of terracotta and occasionally of bone or soft soapstone. While it is possible that these button seals could have been used for occasionally impressing designs into clay or other materials, no traces of such sealings or impressions have been found.

The Kot Diji Phase, 2800-2600 BCE, represents a period during which regional cultural styles of pottery and early urban centers were established throughout the Indus and Ghaggar-Hakra region. Kot Diji settlements such as Harappa and Rehman Dheri (Gomal Plain) emerged as regional urban centers each with distinctive types of button seals, some of which were decorated with combinations of animal motifs and script. At the site of Harappa, a seal impression in clay indicates that some of these seals were used for more than just decoration. Clay sealings were made to close storerooms or seal containers used for trade.

The Harappa Phase (2600-1900 BCE) is the major period of urban expansion that is commonly referred to as the Indus Civilization or Harappa Culture. On the basis of excavations at Harappa itself, this phase can now be divided into three sub-phases characterized by major rebuilding and site expansion, as well as changes in artifact and writing styles, particularly on seals. Seals with Indus script and naturalistic carvings of animals are one of the hallmarks of the Indus cities. However, a wide variety of other seals were also used, including seals with various types of narrative scenes and also seals with a wide range of geometric motifs. In addition to the discovery of actual seals, seal impressions have been discovered on lumps of unfired or low-fired clay. Other types of impressions were made on various shapes of clay tablets that were subsequently fired to create permanent molded tablets. These tablets contain unique narrative scenes that have never been discovered on actual seals and therefore may have been made with wooden seals that are no longer preserved. Due to the lack of careful recording during earlier excavations at Mohenjo Daro and Harappa, the detailed chronology and context of many of the seals excavated by earlier archaeologists is unknown. However, the recent excavations at Harappa have provided a general chronology that can be applied to these earlier discoveries.

The Late Harappa Phase (1900-1300 BC) represents a transitional period during which many distinctive features of the Indus civilization began to change or disappear. The Ghaggar-Hakra River began drying up and people moved to the Indus Valley or to the Ganga-Yamuna Valley or to parts of Gujarat. In addition to the changing river patterns various factors led to the decline in major urban centers and long distance trade. Regional styles of pottery once again emerged throughout the greater Indus region reflecting a change in focus to local economic and political processes. Seals with animal motifs and script were

no longer used in the Indus region after around 1900 BC, but geometric and floral motif seals continued to be used throughout the Late Harappan period. The regional styles of Late Harappan button seals represent some continuity in geometric designs from the Harappan times as well as the introduction of new symbols. The use of seals with script was not revived until the Early Historic period with the invention of the Brahmi script around 400 BC.

With this brief overview it is now possible to present some specific examples of different types of seals and impressions from different chronological periods. The selection presented below is by no means exhaustive, but is intended to represent some of the major variations and styles of Indus seals.

BUTTON SEALS

Button seals were made from a variety of materials during the Early Harappan, Harappan and Late Harappan periods. The most common material used for button seals at the site of Mehrgarh was terracotta, but a few examples were made of bone as well as soft stone, and one seal was made of what appears to be marine shell (Jarrige, *et al.* 1995). One unique button seal was made from bitumen, a natural form of tar. Unlike the later seals, which have a relatively narrow range of motifs, the button seals from Mehrgarh reveal a wide range of motifs, many of which are totally unique (Figure 2). Most of the button seals have been decorated with symmetrical designs radiating from the center of the seals. Circular or square seals with a cross or stepped cross motif (Figure 2c) are relatively common and this design continued to be used throughout later periods in the Indus region. One example of a seal in the shape of a stepped cross has a swastika motif in the center combining both the stepped cross motif and the well-known swastika design (see below for more discussion). During the Harappa phase, stepped cross motifs were generally made on square seals made with either faience or fired steatite (Figure 6a and b) and occasionally on circular seals. This motif continued to be used during the Late Harappan period at sites such as Chanhudaro and Mohenjo Daro (Jhukar Period occupation). A variation of the stepped cross motif also appears on compartmented seals made of copper and on terracotta button seals as seen in examples from the site of Pirak, dating to around 1800-1300 BC (Figure 3a and b) (Jarrige and Enault 1976). On the one hand, the simplicity of the design may contribute to its long life, but the fact that other simple designs disappear, suggests that this motif may have had specific ritual or religious meaning that was passed down from generation to generation.

Some seals from Mehrgarh (not pictured) have human figures radiating from the center, and one has what appears to be narrative scene of a water buffalo attacking humans. Other seals are bilaterally symmetrical, with mirrored designs on both sides of a central line. The absence of any standardized material and the use of many different motifs suggests that button seals were made by many different people for personal use and that they must have had many different uses and meanings. Most of these seals were discovered in the fill in and around houses dating to between around 3300-2800 BC (Mehrgarh, Periods V to VII) (Jarrige, *et al.* 1995).

At the site of Harappa, the earliest button seal was found in the Ravi occupation levels and consists of a fragmentary bone seal that may represent a swastika design (Figure 4) (Kenoyer and Meadow 2000). The swastika motif is found painted on pottery in Mesopotamia from even earlier periods, and this motif is widespread throughout the world. However, its specific meaning may have been quite different in each world region. Based on comparisons with later uses in South Asia in Buddhist, Jain and Brahmanical rituals, the symbol of the swastika represent order out of chaos. The chaos of the world is divided into four quarters and turned either to the right or the left. Where there is order, there is wealth and profit, and in South Asia, the swastika is associated with good luck and various deities that bring wealth, such as Ganesha and Saraswati.

The swastika was later used by Adolf Hitler to represent Indo-Aryan culture and became the symbol of the Nazi regime. Although Hitler used it as a symbol of Aryan culture and good luck symbol, the context of its use by the Nazis has given the swastika a totally different connotation in Europe and the Americas, where it is generally taken to represent an evil and totalitarian regime. The swastika is not associated with any single religious tradition and was widely used by many different cultures which are in no way linked to Aryan traditions or religion. For example it is found in Mesopotamia as early as 4900 BC on pottery of the Samarra culture (Black and Green 1992:171) and also in the New World (Heller 2000) where there is no evidence of Old World contact. These examples should be taken as a cautionary note to avoid projecting modern meaning onto ancient symbols without taking into account cultural, ideological and social contexts.

Swastika and stepped cross button seals (Figure 6c) as well as actual seals were widely used during the Harappa phase. The button seals were generally made in faience or terracotta, while the seals were carved into soft steatite that was then fired to harden it. One unique example of a swastika seal from the site of Mohenjo Daro has a short horned bison motif with script on the obverse (Figure 7). This seal was perforated laterally so that a cord could be passed through the seal. By using the cord as a handle both faces of the seal could have been used to make impressions. No swastika seals have been found from the Late Harappan phase, but the motif reappears during the Early Historic period on seals as well as in decorative motifs on architecture and sculptures.

During the Kot Diji Phase at Harappa button seals were made using soft steatite that was then fired to harden it and some examples have traces of a blue green glaze. In firing steatite the outer layer of the seal was hardened, but eventually even fire hardened steatite can be worn down by repeated impressing into clay. One small seal from Harappa appears to have been used for impressing in clay and eventually the edges became rounded (Figure 5a). The geometric motif on this seal may represent a form of house with a double pointed roof. Similar motifs are found on later Harappan seals (Figure 18a) as well as on molded tablets. Another very distinctive motif that may represent stars or sunbursts consists of double concentric circles with a central dot, arranged around a four-pointed star (Figure 5b). This type of fired steatite seal appears to have been covered with a blue green silica glaze, traces of

which can still be seen along one edge and on the face of the seal. Similar seals with circle and dot motifs have been found at the sites of Tarakai Qila (Allchin and Knox 1981) and also at the Early Harappan site of Kunal, Haryana, India (Khatri and Acharya 1997). While it is possible that craftsmen were making similar seals in more than one Kot Dijian site, the very precise nature of manufacture suggests that these similar seals may have been made in highly specialized workshops at one or two major sites and traded throughout the northern regions of the Indus Valley.

A third variety of button seal has carved floral motifs on the front as well as circle and dot motifs on the back (Figure 5c). The steatite is well fired with a thin glaze, and the overall surface of the seal is very finely smoothed, but the carved lines themselves have not been carefully smoothed, leaving traces of the incising. The precise dating of this seal is not possible since it was found in disturbed layers at the top of the mound at Harappa, and stylistically could belong to either the Kot Dijian or the Late Harappan period. Recent analysis of the seal carving technique compared to seals of the Harappan period 3C suggests that this button seal should be dated to around 1900 BC or later.

During the Harappan Phase (2600-1900 BC) button seals continued to be used along with many other types of seals, but the range of motifs appears to have declined. Most button seals were made with faience and the swastika motif (Figure 6 c) was the most common form of decoration, followed by the stepped cross (Figure 6a and b) and circle and dot motifs. Some button seals have simple geometric designs such as cross hatching or concentric circles, squares or triangles, but more complex designs are quite rare. This reduction in motifs during the full urban phase of the Indus cities could indicate a widespread uniformity in ideology and beliefs as well as some degree of centralization in the production of seals.

During this time period steatite seals with script as well as molded faience tablets were being produced in highly restricted workshops and this pattern may have resulted in the standardization of button seal production. At the end of the Harappan phase, with the disappearance of writing and consequently the production of inscribed seals, button seals with many different types of geometric and floral motifs began to be produced once again. The Late Harappan button seals were made of faience or more commonly of terracotta, a material that was much more widespread in the Early Harappan than during the Harappan period.

As can be seen from this brief summary of button seals, the range of variation in materials and designs reflects the many different ways in which these objects were created and used. The fact that button seals continued to be used alongside seals with animal motifs and writing suggests that they served an important parallel role in legitimizing social order and ideology.

SEALS

In contrast to button seals, with symmetrical geometric or floral motifs, seals with writing and animal motifs represent a totally new form of design that was first created during the Kot Diji Phase (2800-2600 BC) and continued to be refined throughout the Harappa phase (2600-1900 BC) (Kenoyer 1998). The animal symbol is thought to represent a clan or official position in the social or political hierarchy of the Indus society. The most common animal symbol is the mythical unicorn, while other animals such as the humped bull and elephant are relatively rare. These animals were sometimes depicted with an offering stand or feeding trough that may have been used in special rituals. A short inscription in the enigmatic Indus script was generally carved above the image, but some signs were placed below the image or sometimes on the edges of the seal.

The Indus script has not yet been deciphered and yet the linear sequence of signs and the non-random nature of their use suggest that these symbols represent a form of writing. While some symbols such as the fish, pipal leaf, and the human form, appear to be pictographs, most scholars agree that the symbols were not used as pictographs, but rather as graphemes that represented a spoken word or the symbol of a larger belief or idea. Various types of diacritics or qualifiers appear to have been used to change the meaning of specific signs and it is thought that these signs represent words or syllables that when combined together with other signs would form a meaningful communication in a language that has yet to be determined (Parpola 1994). A more extensive discussion of the Indus script is not possible here, but this writing system is itself an extremely interesting form of graphic design and distinctive styles of writing were used on different types of objects. As will be discussed below, the style of writing used on seals changed over time, becoming more standardized and precisely carved towards the end of the Harappa phase (2200-1900 BC). By 1900 BC, after a period of more than 900 years seals with writing and animal motifs disappeared along with the elite communities of the Indus cities who used them.

Impressions made by the square seals with both animal motifs and script carries two distinct messages. An illiterate person could see the animal motif and understand the meaning of the motif, while a literate person could read the script and understand the details of who owned the seal or the commodities being traded. Sometimes the clay sealings on goods had more than one seal impression and invariably the animal motifs of the earlier seals are obliterated by the later seal impression. This means that the writing portion of the seal was the most significant feature of the impression and that it did not matter to the merchants and traders if the animal motif of some impressions was obscured.

EARLY ANIMAL SEALS

Most of the seals found from excavations at large sites such as Mohenjo Daro and Harappa, derive from the later phase of urban occupation, between 2200-1900 BC. Recent excavations at Harappa have been able to recover seals from earlier periods that reveal some stylistic changes in both the animal motifs as well as the writing style (Meadow and Kenoyer

1997; Kenoyer and Meadow 1997). Unfortunately, due to the difficulty of reaching the Early Harappan and initial Harappan occupation levels, only a few fragmentary examples of the earliest type of animal and script seal have been recovered. The earliest seal dating to the Kot Diji phase, has an elephant motif but the upper portion is broken so the style of script is not known (Figure 8a) (Meadow and Kenoyer 2001). The use of the elephant motif is not very common on Indus seals and only 38 examples are known from Mohenjo Daro (Figure 9) and 10 examples (including the Early Harappan one) have been found at Harappa. In later times the elephant came to be a symbol of great power and elephants were used to carry gods and rulers in procession or into battle.

The carving the Early Harappan elephant motif is quite crude compared to the elegant lines of the later seals (Figure 9), but all the basic features, of trunk and tusks are clearly indicated. It is possible that this early broken seal was a practice piece and since it was never fired it may have been intentionally broken and discarded. The elephant is facing to the left on the seal and when impressed in clay the animal would be facing to the right.

The other early example of an animal motif carving found from Harappa is also fragmentary. This seal reveals sharp lines for the body of the animal facing to the right (left when impressed into clay), which may be some type of bull or buffalo (Figure 8b) very similar to a recently discovered buffalo seal from the site of Farmana, Haryana, India (Shinde *et al.* 2008: Fig. 107). In later Indus iconography the bull, particularly the humped zebu (Figure 10), is one of the most finely carved animal motifs and like the elephant it may have represented great power and authority. The carving of the “V” shaped script is slightly curved while in later examples the shape is more rounded “U” and symmetrical.

UNICORN SEALS

The earliest evidence for the use of the mythical unicorn as a motif on seals comes from the site of Farmana, and is relatively dated to the beginning of the Harappan period, around 2600-2450 BC. (Shinde *et al.* 2008: Figs. 108). The actual object is a sealing made by a seal with what appears to be an early form of unicorn, similar to the buffalo seal found from corresponding levels. A second sealing with a unicorn motif has also been found from Farmana (Shinde *et al.* 2008: Fig. 109), but this artifact may come from later levels and date to the middle or last part of the Harappan based on its iconography. By the middle of the Harappan period (circa Period 3B, 2450-2200 BC) the mythical unicorn motif is widely used on seals and is in fact one of the most common motifs found (Figure 9a). The unicorn is a mythical animal created by the Indus people and a symbol that disappeared from the iconography of South Asia after the end of the Harappa period when the ruling elites of Indus cities along with their writing disappeared. Unicorn seals carried to Mesopotamia by Indus merchants may have spread the idea of the unicorn to the Near East. The spread of the unicorn motif to later historical times is quite complicated since there are two different sources for the unicorn that come from the Achaemenid and Greek traditions as well as the Hebrew and later Christian traditions. It is not possible to discuss this in this here and will be addressed comprehensively in a later article.

While some scholars continue to refer to this image as a bull seen from the side, several three dimensional figurines of unicorns have been found at sites such as Harappa, Mohenjo Daro and Chanhudaro (Kenoyer 1998) and there is no reason to suggest that the seal images represent anything but a mythical animal. The unicorn is the most common motif found on Indus seals and is found at almost every major Indus site.

The Indus unicorn was depicted as a slender necked bovine, with long tufted tail and hooves with fetlocks (Figure 9). A single horn emerges from the top rear of the skull and arches gracefully over the front of the head, ending in an upward point. The horn is sometimes smooth, and sometimes is carved as if it has grooves or spiraling form, like the horns of the black-buck. In some carvings the tiny incising along the length of the horn also looks like it has a feathery quality, but it is possible that this is simply the result of carving style. The head of the unicorn is usually depicted with the snout raised as if it was smelling the breeze or making a display of dominance over other animals. This position with head raised is identical to that seen on the water buffalo seals.

Most unicorn figures have a distinctive design on the front part of the body, also known as the withers. This design is thought to represent a cover draped over the forequarters that may indicate a blanket or harness or possibly the sacred pipal leaf (see below). The neck is often depicted with multiple collars that can reach from the jaw to the shoulder. Unicorn figures are usually carved facing to the left (right when impressed) with a ritual offering stand that some scholars interpret as an incense burner or a container for holding a sacred liquid (Mahadevan 1985). This ritual offering stand is found almost exclusively with unicorn motifs, and there are only a few examples of other animals with this unique object.

The proportions of the unicorn are not standard and some are carved with short stubby legs, while other have well-proportioned legs, arched neck and narrow body. As is common with cattle, a long remnant umbilical cord and penis or pizzle is seen hanging from the underbelly. The unicorn motif probably also represents a male animal since some unicorns are depicted with clearly carved testicles, as is the case with some of the humped bull seals (Figure 10). However, the percentage of unicorn seals with this gender detail is very small, approximately 7.98% of the seals at Mohenjo Daro and 6.76 % of the unicorn seals at Harappa. As with the bull and elephant, the unicorn must have represented a very powerful and widespread community. However, unlike the use of the bull and elephant figure, there were no living animals to perpetuate the use of this type of image after the Indus elites lost power, and the symbol disappeared at the end of the Indus cities, and was not adopted by later political or religious communities.

One rare example of a unicorn pendant from Mohenjo Daro shows the animal with a womb or kidney shaped symbol in its belly. The figure is also framed by a more elaborate form of this womb shaped motif (Figure 11). A pipal leaf motif is incised on the rump and shoulder, which may indicate that the coverlet on the unicorn figures may in fact represent a

stylized pipal leaf, which was a sacred symbol of the Indus people. The ritual offering stand is placed in front of the unicorn, which is facing to the right, as would be the case with seal impressions.

Studies of the unicorn and other animal seals from Harappa and comparisons with Mohenjo Daro and other sites, suggest that each of the major cities had distinct seal carving workshops (Rissman 1989; Franke-Vogt 1991). In addition the style of animal carving, the way in which the script is carved appears to change over time. In earlier seals (Harappa Period 3B, 2450-2200 BC), the script symbols are often crowded towards the left or over the head of the animal (Figure 9a). This suggests that the reverse inscriptions were actually carved from the right to the left, with the larger script signs on the right and smaller ones on the left. When the seal impression is made the script is read from right to left resulting in small signs on the right and larger ones at the end of the sentence, which would be on the left. Over time, during the middle phases at Harappa (Late Period 3B, circa 2200 BC), the script appears to become more regular and evenly spaced, but the orientation of each sign is still not standardized (Figure 9b and 9c). The latest seals (2200-1900 BC) have the most rigid form of script with very evenly spaced signs that run horizontally along the top of the seal, with no crowding over the head of the animal figure (Figure 9d and 9e). These signs are also very deeply incised and oriented perpendicular to the line of text. This same type of rigid carving is seen on long rectangular seals that are found only during the last part of the Harappa phase (2000-1900 BC).

OTHER ANIMAL MOTIFS

If the pattern of script incising seen through initial studies at Harappa can be confirmed, it may be possible to bring some chronological order to the hundreds of seals recovered from earlier excavations at both Mohenjo Daro and Harappa. For example, three elephant seals from Mohenjo Daro (Figure 12) reveal distinct styles of carving both the elephant figure as well as the script. The proposed earliest seal (Figure 12a) has relatively narrow and less angular carving with irregular orientation (this is taking into account the wear from use), while the next seal (Figure 12b) has more angular carving but still not oriented all the same way. The final elephant seal has script carving that is very rigid with all of the signs being carved at the same relative size and placed on a horizontal line with perpendicular orientation (Figure 12c).

While the script on seals was usually placed in a single line above the animal motif, some examples have two or more lines of script (Figure 13a) and sometimes the signs are placed one above the other in orientations that do not correspond to normal writing patterns (Figure 13b). The comb like design on this seal with a three headed animal is normally oriented vertically, but in this seal it is placed horizontally. The apparently haphazard position of the writing may have specific meanings to the ancient Indus elites, or conversely they could be due to later text additions. While some scholars have suggested that seal carvers may have been illiterate and did not understand the proper sequence or orientation of signs, it is highly unlikely that people who were carving such important objects would be

ignorant of the meaning or proper orientation of signs. When seal carvers made mistakes the seal was destroyed or the writing obliterated as is seen on an unfinished seal from Harappa (Figure 14). This seal clearly shows that two signs were scraped out, but it is not known if they were written incorrectly or if they may have been removed for other reasons. The seal was never fired and therefore never came into use.

SEALS WITH COMPOSITE ANIMAL MOTIFS

While most Indus seals depicted only one animal, some seals combined two or more animals to create composite figures, sometimes with multiple heads (Figure 13a) and in other cases with composite bodies made from many different animals (Figure 16). The seal with three animal heads depicts the short horned bull with head lowered and two antelope like animals with horns arching together behind the head and in front of the head. Since there are no actual antelopes in South Asia with long forward arching horns, it is possible that this animal represents a unicorn with two horns, or another mythical animal. The meaning of this type of motif is unclear, and it could represent an alliance between to families or an official who had multiple positions.

The most complex composite animal form shows a fantastic creature that has a rounded human face with an elephant's trunk and tusks. A pair of inward curving, ribbed horns rises above the head, and a heavy mane like that seen on the large Markhor goats hangs from the neck. The front hooves and genitalia are similar to those on bull and unicorn figures, but the back feet and haunches are those of a striped tiger. Finally, the tail is depicted as an upraised cobra. There is no ritual offering stand, but four script signs are incised above the back of the creature. This type of composite animal may represent complex philosophical or religious ideas. The attempt to represent these concepts visually is quite remarkable and since we cannot hope to be able to unravel the specific meaning of these images without deciphering the Indus script it is best to simply describe the images.

NARRATIVE SEAL AND YOGI SEAL

During the later part of the Harappan period, a distinct category of narrative seals and seals with ritual images begin to be created. The edges of these seals are often heavily worn, indicating that they too were also used to impress into clay, possibly by rulers or ritual specialists, but no clay seal impressions have been discovered yet. The need for narrative seals and depictions of ritual images suggests that there was some pressing need to promote specific ideologies in the context of the large urban centers. It is possible that these seals reflect a legitimation crisis where the ruling elites and ritual leaders needed to promote a unifying ideology in an urban context that may have been populated by people from many different regions of the northwestern subcontinent. Many of these narratives are repeated in slightly modified versions on different sizes of seals, and the fact that the same scenes are found on seals at most of the larger urban centers indicates that the ruling elites of these cities were loosely united through common religious traditions.

One of the most spectacular examples of a narrative seal shows a deity emerging from the sacred pipal tree, that when impressed would have been to the right (Figure 16). The horned deity either male or female, is looking down on a kneeling male worshiper whose hair is tied in a bun on the back of the head, as is seen on stone sculptures from Mohenjo Daro. This worshiper appears to be presenting an offering of a human head also with hair tied in a bun, placed on a small stool. A giant ram with human face stands behind the kneeling figure, and a procession of seven figures is shown at the bottom of the composition. The figures, which could be either male or female, wear a single plumed headdress, bangles on both arms and long skirts. Several script signs are interspersed with the figures along the top of the seal, and a single sign is placed at the base of the tree. This scene may represent a special ritual sacrifice to a deity, and the fact that the edges of the seal are heavily worn, suggest that the seal was pressed into clay to create sealings with this scene. Although no examples of this scene have been preserved, there are many impressed tablets from both Mohenjo Daro and Harappa that show various types of ritual narratives depicting worship with deities in trees and kneeling worshipers.

Another important type of ritual seal depicts a nude deity, possibly male, with three faces, seated in yogic position on a throne, wearing bangles on both arms and an elaborate headdress (Figure 17). Five signs of the Indus script appear on either side of the headdress, which is made of two outward projecting buffalo style curved horns, with two upward projecting points. A single branch with three pipal leaves rises from the middle of the headdress. The figure wears seven bangles on the left arm and six on the right, with the hands resting on the knees. The heels are pressed together under the groin, and the feet project beyond the edge of the throne. The feet of the throne are carved with the hoof of a bovine as on the bull and unicorn seals. Although the seal has not been extensively used to impress clay it other seals with similar motifs have been found with heavily rounded edges from repeated use, and numerous molded examples of this type of yogic figure have been found on tablets from all major Indus sites.

LONG RECTANGULAR SEALS

Towards the end of the Harappan period, around 2000-1900 BC, a new type of rectangular inscribed seal was developed had only script and no animal motif (Figure 14). Impressions using these seals were made directly below each other so as not to obliterate the writing of the earlier impression. The absence of animal motifs could indicate that these rectangular seals were simply bureaucratic devices with no ritual meaning, or they could represent a new group of people who did not adhere to the symbols of Indus animals seen on square seals. However, the discovery of both types of seals within the same house at Harappa indicates that they were sometimes used by the same household. Furthermore, the technique of incising the script and its overall layout is identical on both types of seals and suggest that both types of seals were being made by the same workshops and possibly by the same craftsmen.

CONCLUSION

While there is clearly much more to discuss regarding the graphic design elements of seals, the preceding examples indicate that Indus seal craftsmen had a highly complex repertoire of motifs and multiple options on how to arrange them. Two distinct types of seals, the button seal and the intaglio or reverse impression seal were created for distinct purposes. One may have been used more widely and over a longer period of time to indicate ideology, while the seals with animal motifs and script were limited to more economic and political use. The use of different type of seals by people living in the same house suggests that elite merchants were involved in multiple transactions that required the use of different type or seals. Finally, it is clear that much work still remains to be done to better understand the range of different motifs and their overall chronology. The other area that needs considerable investigation is the multiple meanings of symbols that were used in the periods after the end of the Indus cities. While it is not necessary to project these later meaning back onto the Indus people, the symbols do reflect a legacy that needs to be investigated more fully.

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Illustrations (All photos taken by J. Mark Kenoyer or Richard Meadow and courtesy of the Department of Archaeology and Museums, Government of Pakistan and the Harappa Archaeological Research Project).



Fig.2: Mehrgarh Button Seals

- a. Terracotta button seal, Mehrgarh, Period VII, 2800-2600 BC (Jarrige *et al* 1995: Plate 1.20, n)
- b. Terracotta button seal, Mehrgarh, Period VII (Jarrige *et al* 1995: Plate 2.34, e)
- c. Terracotta button seal, Mehrgarh, Period V, 3300-3000 BC (Jarrige *et al* 1995: Plate 9.16, a)
- d. Bone pendant, Mehrgarh, Period V, 3300-3000 BC (Jarrige *et al* 1995: Plate 8.26, c)
- e. Terracotta button seal, Mehrgarh, Period?
- f. Bone button seal, Mehrgarh, Period VII, 2800-2600 BC (Jarrige *et al* 1995: Plate 1.20, p)
- g. Terracotta button seal, Period VI, 3000-2800 BC (Jarrige *et al.* 1995: Plate 8.26, e)



Fig.3: Button Seals, Pirak and Mehrgarh

- a. Bronze compartmented seal, Pirak, Period IIIA.
- b. Terracotta button seal, Pirak, Period II.

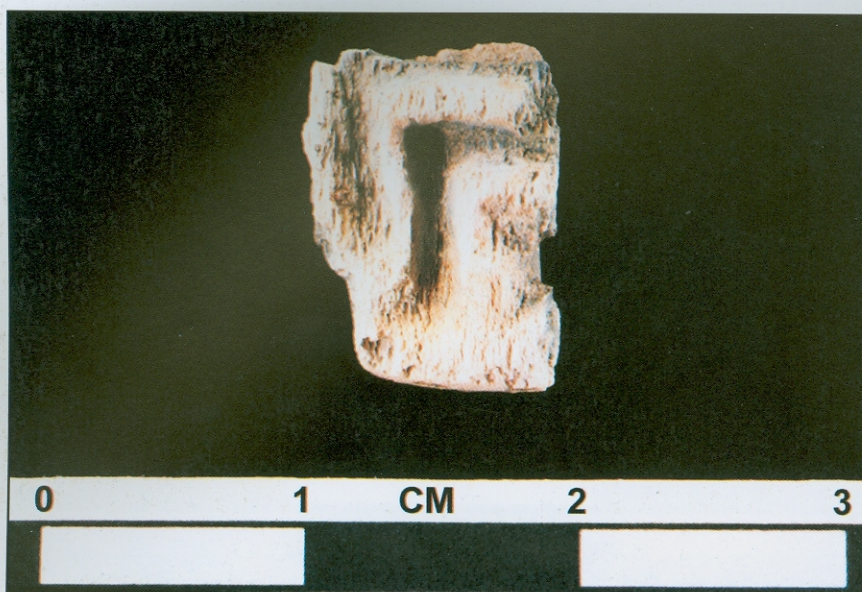


Fig.4: Bone button seal, Harappa, H98-3503, Ravi Phase, circa 3300 BC



Fig.5: Harappa Button Seals, Kot Diji Period

a. Steatite button seal, Harappa, H96-2740, Kot Diji Phase, circa 2800 BC

b. Steatite button seal, Harappa, H2000-4495, Kot Diji Phase, circa 2800-2600 BC

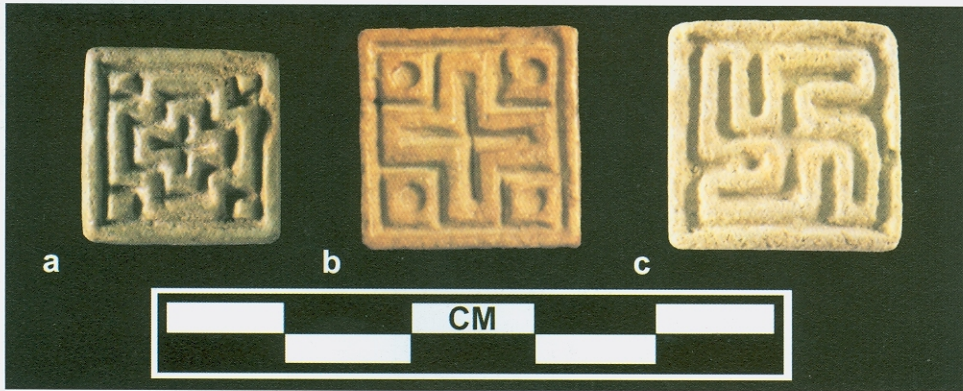


Fig.6: Harappa Phase Button Seals

- a. Faience button seal, double stepped cross motif, Harappa, H97-3373, circa 2000-1900 BC
- b. Faience button seal, single stepped cross motif, Harappa, NMP 52.3015, circa 2000-1900 BC
- c. Faience button seal, swastika motif, Harappa, H99-3814, circa 2000-1900 BC



Fig.7: Steatite seal, with swastika motif on one side and a bison motif with script on the other face, Mohenjo-daro circa 2000-1900 BC



Fig.8: Early Harappan and Harappan Seals

- a. Unfinished Elephant seal, steatite, Harappa, H2000-4474, Kot Diji Phase (2800-2600 BC).
- b. Broken Bull Seal, steatite, Harappa, H90-1600, Harappa Phase, Period 3A (2600-2450 BC)

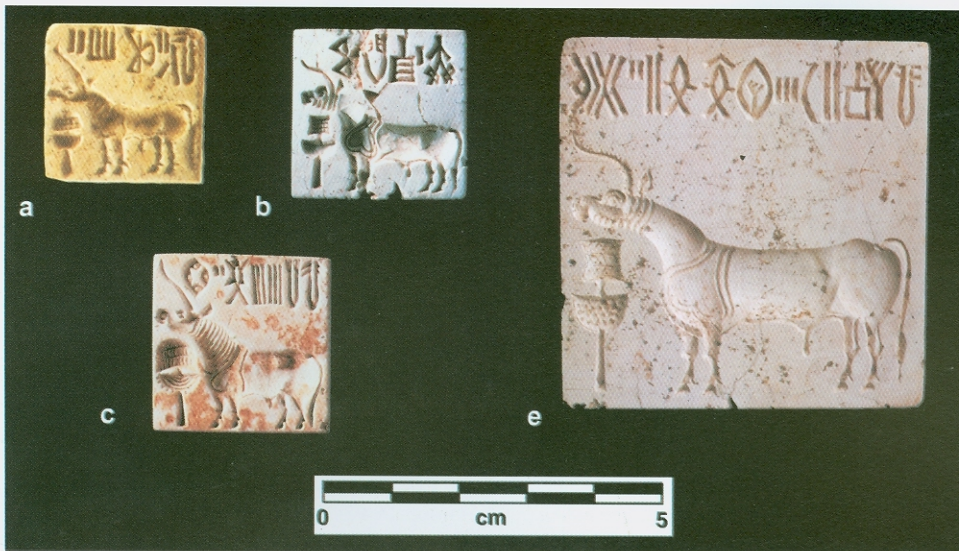


Fig.9: Unicorn Seals

- a. Unicorn seal, steatite, Harappa, H90-1618, Period 3B? (2450-2200 BC).
- b. Unicorn seal, steatite, Harappa, H87-262, Period 3C (2200-1900 BC)
- c. Unicorn seal, steatite, Harappa, H96-2736, Period 3C (2200-1900 BC)
- d. Unicorn seal, steatite, Harappa, H99-4064, late Period 3C (2000-1900 BC)



Fig.10: Bull seal, steatite, Mohenjo-daro, NMP 50.236



Fig.11: Unicorn pendant, unfired steatite, Mohenjo Daro, NMP 50.125



Fig.12: Elephant Seals

- a. Elephant seal with script, steatite, Mohenjo Daro, MD 1151 NMP 50.271
- b. Elephant seal with script, steatite, Mohenjo Daro, MD1152, L P-902
- c. Elephant seal with script, steatite, Mohenjo Daro, MD 1148, MD151, 50.264 (stolen from Mohenjo Daro Museum and not yet recovered)



Fig.13: Other Animal Seals

- a. Multiple headed animal seal, steatite Mohenjo Daro, NMP 50.294
- b. Water Buffalo seal, steatite, Mohenjo Daro, MM 50.279



Fig.14: Unfinished steatite unicorn seal, Harappa, HM 61, 54.5309



Fig.15: Seal with composite human and animal features, steatite, Mohenjo Daro, Lahore Museum, P-1727



Fig.16: Narrative seal with worship scene, steatite, Mohenjo Daro, NMP 50.295



Fig.17: Yogi seal, steatite, Mohenjo Daro, NMP 50.296

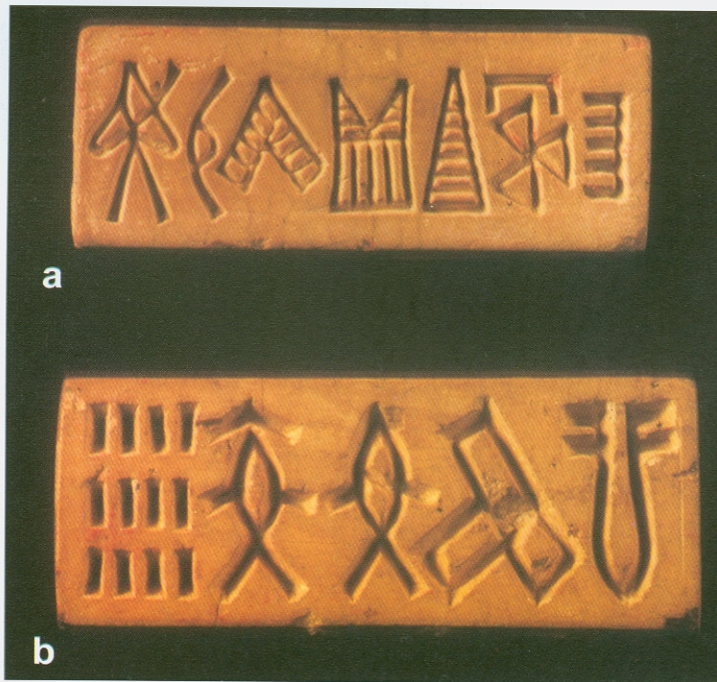


Fig.18:

- a. Long rectangular seal, steatite, Mohenjo Daro, NMP 50.349
- b. Long rectangular seal, steatite, Mohenjo Daro, NMP 50.315

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