Early Developments of Art, Symbol and Technology in the Indus Valley Tradition

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Introduction

Archaeologists studying the emergence of early civilizations often focus on finely crafted art objects in order to understand aspects of economic, socio-political and religious organization. The importance of such objects is increased when studying early societies for which there are no written records, such as the Indus Valley civilization. Although some of the communities living in the Indus cities did use a formal writing system, it has not yet been deciphered and the detailed study of material culture provides one of the few sources of information for determining the nature of the society and for comparing it to other early cultures.

Over time, as questions about the past have changed, the approaches used by archaeologists to study finely crafted objects have also changed dramatically. One category of artifacts that provides an example of how scholars have changed their perspectives and interpretations over time are the intaglio stamp seals of the ancient Indus cities. When they were first discovered in 1873, the exquisite carved steatite seals from Harappa gained world attention because of their unique style and enigmatic script. Essentially they were compared stylistically and linguistically to the cylinder seals of Mesopotamia [Marshall 1924]. After many years of excavation and study, scholars such as Ernest Mackay had the opportunity to study the materials that the seals were made from and the general techniques of carving and manufacture [Mackay 1938]. These studies revealed that there were in fact many different types of seals, and inscribed objects, some of which were not used for sealing at all. The interpretive implications of these variations were not at first realized, but it was clear that the techniques of manufacture and variations were the result of indigenous cultural developments and not due to diffusion of ideas from other early civilizations.

As the study of Indus cities shifted to more theoretical issues of social, economic and political organization, the production and use of artistic objects such as seals came to take on a very different light [Rissman 1989]. Questions about the symbolic or socio-
political meaning of these seals required more rigorous studies of the production, use and discard of the artifacts [Kenoyer 1997a]. This stimulated new studies and interpretive models that would require totally new methods of data collection and analysis. The seals of the Indus cities were shown to be more than simple art objects, to be compared to seals in other civilizations, but were seen as symbols of power and authority that had been created through complex technologies [Kenoyer and Meadow 1997; 1999].

While seals may be one of the more spectacular types of objects found in the Indus cities, this same progression of changing studies and perspectives has been going on with most aspects of the Indus Civilization. Scholars have begun to re-examine artifacts recovered from earlier excavations and discover new finds through excavations in both Pakistan and India. By studying the artistic elements, the symbolic elements and the technological processes needed to create such objects scholars have begun to shed new light on the socio-economic, ideological and political developments that set the foundation for the Indus Civilization. In this paper I will focus on examples resulting from the recent excavations of the Early Harappan or Ravi and Kot Diji Phases at Harappa along with comparisons from the important sites of Mehrgarh and Nausharo.

Geography and Chronology

The term Indus Valley Tradition is used to incorporate the long term cultural trajectory that characterizes the large geographical region of the Indus and Ghaggar-Hakra river valleys [Kenoyer 1998]. This area extends from the highlands of Balochistan on the west across the vast Indus alluvial plains to the deserts of Cholistan and Thar that form the border between Pakistan and India. From north to south the regions stretch from the foothills of the Himalaya to the coastal regions of Makran, Pakistan, and the islands and mainland of Gujarat, India. This vast geographical area provides numerous diverse resource areas for raw materials as well as subsistence activities. The juxtaposition of these resources provides a stimulus for the establishment of exchange networks that were facilitated by numerous passes between the highlands and alluvial plain, the presence of rivers and relatively accessible coastal regions (fig. 1).

The chronology for the Indus Valley Tradition can be divided into four Eras [Kenoyer 1991a; Shaffer 1992]. The Early Food Producing Era, ca. 7000-5500 BC, is also commonly referred to as the Neolithic period, and is a time when domestic plants and animals are first exploited in the Indus Valley. The Regionalization Era, 5500-2600 BC, corresponds
to a period of regional cultural development that is subdivided into various Phases defined by specific artifact styles and regional cultural interaction. Recent excavations at the site of Harappa provide evidence for the emergence of an Early Indus state around 2800 BC at the end of the Regionalization Era, but the major phase of state-level development and urbanism does not begin until around 2600 BC.

The next Era is called the Integration Era, 2600-1900 BC, and is the time generally associated with the term Indus Valley Civilization. This Era is characterized by the emergence of numerous urban centers and smaller regional towns. At this time we see the common use of a writing system found primarily on pottery or on inscribed seals and tablets. Standardized cubical stone weights are found at all major sites along with similar styles of pottery vessels and a wide range of other objects. Various categories of evidence, some of which will be discussed below indicate the presence of distinct social and economic classes, both within the cities, as well as in the surrounding hinterland. Perhaps even more important is the evidence for political and ideological integration of major settlements and the emergence of what may be termed “city states” [Kenoyer 1997a].

The final Era of the Indus Tradition is referred to as the Localization Era, 1900-
1300 BC During this time there is evidence for major transformations: the socio-economic and political organization of cities and regional settlements. While there are some important continuities that link this period with earlier cultures, there are nevertheless significant changes in technology and production that are in turn linked to changes in stylistic and symbolic aspects of the material culture. The most significant changes are seen in the disappearance of Indus writing, standardized weights, and the breakd own of long distance trade.

By the end of the Localization Era, the socio-political and ideological aspects of the Indus Tradition have been radically transformed and reflect the emergence of a new cultural tradition that incorporates a much wider geographical area extending from the Indus to the Ganga and Yamuna alluvial plains [Kenoyer 1995a].

Table 1. General Chronology of the Indus Valley Tradition

<table>
<thead>
<tr>
<th>Era</th>
<th>Phase</th>
<th>Dates</th>
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<tr>
<td>Localization Era</td>
<td>Late Harappan Phase</td>
<td>ca. 1900 to 1300 BC</td>
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<td>Harappa: Periods 4 and 5</td>
<td>1900 - 1700 BC</td>
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<td>Integration Era</td>
<td>Harappan Phase</td>
<td>2600 to 1900 BC</td>
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<td></td>
<td>Harappa: Period 3C, Final</td>
<td>2200 - 1900 BC</td>
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<td>Harappa: Period 3B, Middle</td>
<td>2450 - 2200 BC</td>
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<td>Nausharo, Period III</td>
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<td></td>
<td>Harappa: Period 3A, Initial</td>
<td>2600 - 2450 BC</td>
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<td>Nausharo, Period II</td>
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<tr>
<td>Regionalization Era</td>
<td>Early Harappan several Phases</td>
<td>ca. 5500 to 2600 BC</td>
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<td>Harappa: Period 2, Kot Diji Phase</td>
<td>2800 - 2600 BC</td>
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<td></td>
<td>Nausharo, Period I</td>
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<td>Mehrgarh, Period VII Kot Diji Phase</td>
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<td></td>
<td>Harappa: Period 1,A B, Ravi Phase</td>
<td>3300 - 2800 BC</td>
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<td>Mehrgarh, Period IV to VI</td>
<td>3500 - 2800 BC</td>
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<td>Mehrgarh, Period III</td>
<td>4800 - 3500 BC</td>
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<td>Mehrgarh, Period II</td>
<td>5500 - 4800 BC</td>
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<td>Early Food Producing Era</td>
<td>Neolithic</td>
<td>ca. 7000 to 5500 BC</td>
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<td>Mehrgarh, Period 1, Aceramic</td>
<td>7000 - 5500 BC</td>
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Early Food Producing Era: Art and Symbol

The early use of material objects as symbols to define social status and power in the Indus valley can be documented at the site of Mehrgarh, which is the major site for understanding the Neolithic developments in the Indus Valley. The Neolithic occupation reveals a rich assemblage of material culture from both domestic and burial contexts. Of particular importance are the craft technologies and the Neolithic burials which reflect the economic and ideological patterns during this initial phase of settling down. The types of artifacts that may have been used as symbolic objects are relatively limited, but this may be due in part, to the fact that few permanent materials, such as stone, shell and bone, were used for the creation of decorative objects.

The semi-sedentary agro-pastoral communities living on the Kacchi plain or on the Quetta Plateau had begun to exploit domestic plants, such as wheat and barley, and animals such as sheep, goat and cattle [Meadow 1996]. At Mehrgarh there is evidence for simple mud walled buildings with four internal subdivisions and numerous burials with often quite elaborate burials offerings [Jarrige, Jarrige et al. 1995]. In addition to occasional animal sacrifices, these offerings included baskets, stone and bone tools, and a wide range of ornaments such as beads and bangles [Barthélémy de Saizieu 1990]. In the absence of fired pottery, the most important types of containers were baskets and presumably bags made with netting, woven fabrics or leather. Bitumen coated baskets and intricately designed beaded ornaments indicate considerable expertise in various types of weaving. The combinations of different colors of stone or shell indicate a preference for contrasting colors such as unfired black soapstone and white limestone, shell or fired soapstone. Bright orange or purple Spondylus shell disc beads were combined with beads made from blue-green turquoise, deep blue lapis lazuli, banded sandstone and even polished copper. Wide shell bangles were worn along with bracelets and anklets made from tabular beads of white shell or white limestone [Kenoyer 1995b]. Natural shell beads from brown and white striped *Engina mendicaria* were also used, often in combination with large disc pendants made from the flat spire of the cone shell (*Conus sp.*). Many of these same materials continued to be used in later times and with the development of more complex technologies for production, some came to be used as important symbolic and wealth objects during the Harappan period.
Technology

The technologies used to create ornaments were not very complex during this period and involved relatively simple procedures of chipping, grinding and drilling [Vidale 1995]. Since no evidence of manufacture of exotic materials has been found from Mehrgarh during this early period, it can be assumed that ornaments from non-local materials were produced by craftsmen/women in distant resource areas and traded to the settlement in finished form [Jarrige, Jarrige et al. 1995; Kenoyer 2000]. It is not unlikely that communities in the western Balochistan highlands may have been active in the manufacture or trading items such as lapis and turquoise beads, marine shell beads and native copper beads, all of which have been found in early burials at Mehrgarh. In addition to this highland trade of exotic commodities there is a possibility that some items, such as large shell bangles made from the marine shell (Turbinella pyrum) were traded up the Indus valley and reached the site from this other direction.

Regionalization Era: Art and Symbol

The virtual explosion in material culture during this Era makes it impossible to discuss all of the relevant data and it is only possible to focus on a few of the major types of artifacts in the core areas of the Indus Valley. During the Regionalization Era, or Early Harappan period (ca. 5500 to 2600 BC), scattered agro-pastoral settlements became established on the alluvial plains of the Indus and Ghaggar-Hakra river valleys. As these settlements grew from small villages to large towns and market areas, they developed a higher degree of regional and internal social differentiation [Kenoyer 1991b]. This can be seen in the construction of walled settlements with segregated domestic and public structures [Kenoyer 1991a] and is also reflected in the greater varieties of material culture.

At Mehrgarh, there is a dramatic increase in the amount of finished objects and manufacturing debris from all types of stone, shell, bone and pottery objects during the Chalcolithic period (Periods II and III, from around 5500 to 3300 BC). In contrast, the number of burial goods interred with the dead decreases over time such that the later Chalcolithic burials have very few ornaments or utensils [Samzun and Sellier 1985]. The types of ornaments found in the burials include steatite bead necklaces and bracelets, along with pendants of lapis lazuli, cornelian and other semiprecious stones. The varieties of stone beads increase, with new shapes and many different varieties of rock being used to produce attractive ornaments. Female burials have almost twice as many ornaments as male burials, while juveniles...
have even less than the adult males. This pattern is quite the opposite of what was noted for the Neolithic period burials. It is interesting to note that there are no shell bangles found in the later burials and over time, the numbers of shell bangles found at the site do not show a marked increase as is the case at Harappa (see below).

A new technological development seen during this period at Mehrgarh and Nausharo is the production of blue-green glazed faience beads. The production of such ornaments required fairly high firing temperatures as well as a well developed technology of frit and glaze preparation [Barthélémy de Saizieu and Bouquillon 1997]. In addition to many new styles and shapes of pottery, one of the most important forms of symbolic objects are terra-cotta figurines. It is interesting to note that compared to the figurines of the Neolithic period, the later Chalcolithic figurines have many ornaments and decorative features. The decorative techniques include appliqué, modeling, and incising as well as painting with red, black or yellow pigments [Jarrige 1988]. The diversity of hair styles and ornaments on the figurines undoubtedly reflects the changing patterns of personal ornamentation by the peoples living at the site of Mehrgarh and may indicate increasing status differentiation and ethnic diversity.

Another important type of object that was being produced at Mehrgarh are button seals with geometric designs made of terra cotta and bone. The designs include stepped cross, concentric circle and cross motifs, as well as various combinations of complicated punctated or incised motifs. These designs are often repeated in the painted pottery motifs or in shapes of stone inlay that have been found in various parts of the site. The implications of these repeated patterns is the emergence of a repertoire of graphic symbols that have local meaning and were used to reinforce social status or possibly ritual ideology.

While the site of Mehrgarh represents the early phase of the Regionalization Era along the periphery of the Indus Valley, the recent excavations at Harappa provide a unique opportunity to follow the same sort of development in the core area of the Indus region. At Harappa, no cemetery from the Early Harappan period has been recovered, but it is possible to see the types of craft developments from debris and finished objects found in domestic areas.

The earliest levels of the site, dating to the Ravi Phase, circa 3500 BC, reveal the local production of numerous types of finely crafted objects such as beads, pendants, bangles, button seals, painted pottery and figurines. The versatility of the early craftsmen/women is reflected in both the styles of objects created as well as the technologies
Terracotta Beads: Ravi Phase

Terracotta Beads: Kot Diji Phase

Steatite Beads: Ravi Phase

Steatite Beads: Kot Diji Phase

Figure 2. Harappa: Ravi and Kot Diji Phase Beads.

developed to make unique objects [Kenoyer and Meadow 1999]. Beginning with the earliest occupation at the site there is a wide range of bead shapes and manufacturing techniques (Fig. 2). Some of the soft steatite beads were unfired, leaving the natural tan or grey-black color. Other beads were bleached and fired to a white color. Finally some beads were glazed with a blue green glaze that was applied to a roughened exterior. In addition to the steatite beads, they produced short and long biconical beads of harder stones, such as carnelian, banded agate, multicolored jaspers, lapis lazuli, and amazonite. The color combinations resulting from these beads would have been quite striking. Terracotta was also used to produce beads in many of the same shapes as the stone beads as well as unique forms that were only possible with clay. For example, some of the small terracotta lenticular beads were impressed with fabric on both sides to create a patterned surface. Other terracotta beads were pinched with the fingers or palms of the hands, leaving the patterned lines of the maker’s hands on the surface of the bead. Since many of the beads were also carefully smoothed to remove fingerprints, we can assume that the patterned surfaces were left intentionally.

During the Kot Diji phase there is evidence for faience bead production to create
microbeads as well as larger lenticular and biconical shapes. The faience beads in the later part of the Kot Diji phase are made from finely ground and refired frit that appears to be similar to the compact faience documented from the following Harappan Phase [Kenoyer 1994]. This form of high quality faience is found only in the Indus Valley and not in other contemporaneous cultures, such as Mesopotamia or Egypt.

Figure 3. Harappa: Ravi and Kot Diji Phase Seals.
The manufacture of seals shows a dramatic change during the later part of the Early Harappan or Kot Diji Phase (fig. 3). The early button seals made of carved bone from the Ravi phase [Meadow, Kenoyer and Wright 1998] are replaced with carved soapstone or steatite seals having geometric incised designs [Meadow, Kenoyer and Wright 1996; 1998]. Some of these seals are bleached white and glazed to create a hard surface suitable for repeated stamping. The discovery of a terracotta sealing of a square seal with script and a geometric or plant motif indicates that they were in fact used for such purposes. An unfinished seal with an elephant motif (Fig. 3-8) also provides the earliest evidence for the local manufacture and use of large symbolic animals on the steatite seals [Kenoyer and Meadow 1999].

In conjunction with the use of seals there is also evidence for the manufacture and use of cubical limestone weights, that would have been used for weighing valuable commodities or for taxation [Meadow, Kenoyer and Wright 1999]. There is no concrete evidence for copper or gold working at Harappa, but the diversity of copper tools, utensils and ornaments and the presence of various types of gold beads and pendants from the Early levels suggests that such crafts were also being practiced at the site.

Figure 4. Harappa: Ravi and Kot Diji Phase Bangles.
There is also evidence for various types of bangle manufacture using exotic materials such as marine shell and local materials such as terracotta (Fig. 4). Both wide and narrow bangles were made from the marine shell (Turbinella pyrum) using simple techniques of incising with stone tools, grinding, and polishing. Terracotta bangles were hand formed and the exterior was pinched to create a raised ridge. In the later levels of the Ravi Phase (circa 3000-2800 BC) and the subsequent Kot Diji Phase (2800-2600 BC), the variety of terracotta bangles increases dramatically to include flat painted bangles, rounded bangles, and one having incised decorations. While at first most of the bangles were made with red fired terracotta, in the later levels there are grey-fired bangles with highly polished and incised surfaces. In some cases, multiple bangles were joined together while still unfired to form a single, wide bangle decorated with intricate carved designs.

In this article it is not possible to discuss the many developments in pottery making and decoration at Harappa during the Regionalization Era, but it is important to note

Figure 5. Harappa: Kot Diji Phase Human Figurines.
that the use of the potter’s wheel becomes dominant by the end of the Kot Diji Phase. Along with wheel thrown pottery, mold made and hand formed pottery continue to be produced for specific shapes and functional types.

At Harappa, terracotta human and animal figurines become more elaborate and many of them have been found painted black or red designs. One human female figurine has a necklace with pendants painted around her neck and is wearing a skirt made with a plaid or checkered design (Fig. 5). Some of the bull figurines have painted bands and stripes on their legs and hump (Fig. 6). Ram figurines sometimes have holes to attach wheels so that they can be pulled as a toy. It is important to note that the variety of human figurine styles found at Harappa are much less than those found at sites such as Mehrgarh and Nausharo.

A detailed comparison of figurines and other finely crafted objects from Harappa and sites such as Mehrgarh/Nausharo has not been undertaken. However, it may provide
important insights into the differences in social and ideological aspects of small and large settlements during this period of regional development.

Technology

At the site of Mehrgarh, production in the periods following the Neolithic after 5500 BC. shows an increase in the importation and processing of non-local raw materials. During the Ceramic Neolithic and later Chalcolithic periods at Mehrgarh (Period III, around 4800 to 3300 BC), there is evidence for local production of soft stone beads such as steatite and limestone [Vidale 1989; 1995]. Copper or stone drills were probably used on the softer materials. During this time we also see the earliest use of harder varieties of rock such as agate and jasper that were being perforated using specialized stone drills. Local manufacture of marine shell ornaments is also well established [Kenoyer 1995b]. Both bead making and shell working involve non-local materials, several stages of production and more complex technological processes that may indicate the presence of more than one craft specialist. In addition to these exotic materials, the local potters and modelers had developed many styles of pottery and delicately modeled figurines of humans and animals [Jarrige 1988]. The pottery firing was undertaken in updraft kilns as well as in large pit kilns for the production of large quantities of storage jars. At this point there is no indication of the types of kilns used for faience production at Mehrgarh/Nausharo or at Harappa. The presence of copper melting crucibles at Mehrgarh [Jarrige, Jarrige et al. 1995] indicates that this technology was being practiced at sites far from the original source of the raw materials [Kenoyer and Miller 1997].

All of the basic technologies used at Mehrgarh and Nausharo appear to be present at Harappa during the Early Harappan period. The major difference between these sites is the fact that at Harappa there is a long-term occupational continuity between the different periods, a gradual increase in the diversity of crafts and an increase in the overall scale of production. By the end of the Early Harappan period the site of Harappa has grown to over 25 hectares and is clearly divided into two mounds with massive mud brick perimeter walls around both parts of the site. Craft activities have been found in both of the mounds and include a wide variety of exotic materials and complex technologies. Steatite was being brought from distant resource areas and made into various types of beads, some of which were glazed. Steatite seals with script and animal motifs were carved and fired at the site. Numerous types of colored jasper, agate, carnelian and other
varieties of rock were being brought in their raw form and made into beads and pendants. As mentioned above, the production of faience at Harappa represents a highly specialized technology that required the intensive processing of materials and firing at high temperatures to achieve a glassy, compact substance with a shiny bluegreen glaze. While faience is documented from Mehrgarh and also from Nausharo during this period, it is not known if it was made using the same techniques as found at Harappa. Finished copper tools and weapons have been found at Harappa, and it is assumed that some copper working was going on at the site, but so far no production areas have been excavated for the Early Harappan Phase. However, recent excavations of the Harappan Phase copper working areas [Meadow, Kenoyer and Wright 2000] and the large number of copper objects recovered from the earlier excavations provide strong evidence for a long tradition of copper and bronze working at the site [Kenoyer and Miller 1997].

Conclusion

On the basis of this brief review it is possible to conclude that some craft technologies came to be associated with status, symbol and power in the Indus valley while others remained basically utilitarian. During the Early Food Producing Era, most of the ornaments and symbolic objects appear to have been brought to the site of Mehrgarh as finished objects. In the following Regionalization Era, the trade in raw materials and the emergence of local production centers is seen at sites along the foothills as well as in the middle of the plain. At both Mehrgarh/Nausharo and Harappa the processes by which certain crafts came to be manipulated and controlled by elites appears to have been a relatively gradual process, and not the result of rapid political or ideological changes.

The earliest glazed steatite and faience beads of the Ravi Phase and Early Chalcolithic at Mehrgarh did not suddenly become adopted as a popular form of ornament. The technology for producing high quality compact faience may have been established by 2800 BC at Harappa, but still this did not become a common technology until some 200 years later, during the Integration Phase of the Indus cities. One could even argue that the ultimate development of the faience technology was to be seen during the Localization Era around 1900 BC, when it may have intersected with the emergence of glass technology [Kenoyer 1997b]. Similarly, the development of gold and copper working, shell bangle making, agate bead making or even seal carving techniques were already well established during the Kot Diji Period, but the elaboration of these technologies did not begin until after 2600 BC.
The gradual development and spread of important technologies is undoubtedly linked to more fundamental social processes that were going on during the initial phase of urban development [Helms 1993]. The ability to create powerful symbols was something that could only be done through special technologies or by using specific raw materials that were not easily accessible to the common people [Kenoyer 2000]. Therefore, the crafts that became most important for reinforcing social and ritual status were ones that could be efficiently controlled by new elites and powerful merchants of the Indus cities. While the knowledge of specific craft technologies were probably passed on from one generation to the next through kin networks and various forms of ritual practice [Kenoyer 1989], the access to specific materials could have been carefully regulated by controlling trade. At both Harappa and Nausharo, the building of massive mud brick walls around the settlements would have been the most effective way to control the access to raw materials. The walls and gateways would also have allowed for control of the export trade in finished commodities.

While some scholars have argued for a sudden emergence of a vast array of technologies associated with the urban integration of the Indus Valley Civilization around 2600 BC [Possehl 1997], the current evidence suggests that this was not the case. The contrast between the Early Harappan and Harappan phase is not so much the presence or absence of specific technologies, but rather the ways in which specific technologies were used. During the Kot Diji Phase, around 2800 BC, we see the first elaboration of technologies such as faience working and seal carving. These crafts were undoubtedly associated with the emergence and consolidation of new social groups that used specific types of artifacts to distinguish themselves and their ideologies. The presence of similar crafts in the two adjacent walled areas at Harappa suggest that crafts played a very important role in legitimation of competing merchants and other elites.

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References


Steatite Seal (serpent monster) from Sār el-Jisr, Bahrain.