

ICONS AND SIGNS FROM THE ANCIENT HARAPPA

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Abstract

Written words probably developed independently at least in three places: Egypt, Mesopotamia and Harappa. In these densely populated areas, signs, icons and symbols were eventually used to create a writing system. It is interesting to see how sometimes remote populations are using the same icons and symbols. Here, we discuss examples and some results obtained by researchers investigating the signs of Harappan civilization.

1. Introduction

The debate about where and when the written words were originated is still open. Probably, writing systems developed independently in at least three places, Egypt, Mesopotamia and Harappa. In places where an agricultural civilization flourished, the passage from the use of symbols to a true writing system was early accomplished. It means that, at certain period in some densely populated area, signs and symbols were eventually used to create a writing system, the more complex society requiring an increase in recording and communication media.

Signs, symbols and icons were always used by human beings, when they started carving wood or cutting stones and painting caves. We find signs on drums, textiles and pottery, and on the body itself, with tattooing. To figure what symbols used the human population when it was mainly composed by small groups of hunter-gatherers, we could analyse the signs of Native Americans. Our intuition is able to understand many of these old signs, because they immediately represent the shapes of objects and animals. It is then quite natural that signs and icons, born among people in a certain region, turn out to be used by other remote populations. These signs are the most archaic ones, connected with animal, water, sky and the hunting.

When populations settled down, the number of symbols increased to represent a complex social organisation, as in the case of Harappa culture. In this fascinating and huge research area, let us discuss examples and some results which researchers investigating this Indus culture have obtained. We will discuss the seals and some of the signs found on them, and report shortly the debate on their interpretation and on the question if Harappan writing is a syllabic one.

2. Harappan civilization.

The ancient city of Harappa in Pakistan existed from about 3300 until 1600 BC. Till 1921 just few bronze objects and a surprising seal with symbols were known of its ancient culture: in that year, the Indian archaeologist Rai Bahadur Daya Ram Sahni discovered the place where that very old town was settled [1]. The Harappa Culture extended well beyond the bounds of Pakistan: its centres were in Sindh and the Punjab [2].

Also known as the Indus Valley Civilization, the Harappa Culture arose approximately at 6000 BC. The two greatest cities, Mohenjo-Daro and Harappa, emerged at 2600 BC, along the Indus river valley. This civilization had a symbolic script system and urban centres with complex social and economic system. In fact it was mainly an urban culture sustained by surplus agricultural production and commerce. Both Mohenjo-daro and Harappa were built according to similar plans of streets, flat-roofed brick houses, and administrative or religious centres. The inhabitants did not know iron, but water was maintained and controlled in the city houses, with underground supply and drainage systems. These civilizations then appear to have a high organisation level, as shown by the remains of water systems and by the layout of according to a grid-like structure [3].

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Cotton was woven and dyed for clothing. Wheat and rice and a variety of vegetables and fruits were cultivated. A number of animals were domesticated. The civilization lasted until weather and climate became extremely inhospitable [3]. The material composition of some Harappan objects indicates that materials not found locally may have been imported from various places, including Mesopotamia, Egypt and perhaps China.

In 1999, the BBC announced that it is at Harappa that the first known examples of "writing" may have been unearthed. Plant-like and other markings have been found on fragments of pottery dating back 5500 years. These signs were etched onto jars before the firing. Researchers believe they may indicate the contents of the jar or that they are signs associated with a deity. This symbolic system is probably contemporary with oldest ones in Egypt and Mesopotamian. Let us consider that clay tablets containing primitive words were uncovered in southern Egypt at the tomb of king Scorpion, carbon-dated to 3300-3200 BC. This is about the same time to the primitive writing developed by Mesopotamian civilization around 3100 BC. This discovery suggests that symbolic writing systems developed independently in at least three places - Egypt, Mesopotamia and Harappa between 3500 BC and 3100 BC.

The major problem connected with deciphering of Harappan symbols and then to determine the meaning of them is that the Harappan language died out and did not form the basis of other languages. Around 1900 BC Harappa and other urban centres started to decline as people left them to move east to India and the Ganges region. Moreover, the length of inscriptions on the seals and the pottery is usually small and as a consequence, different meanings of the same sign have been proposed. Despite the effort of many researchers then, this writing system is not completely deciphered.

3. Icons of the Ancient Harappa.

Pottery adorned with animal and geometric motifs has been found in profusion at all the major Indus sites. But the most interesting objects unearthed are small, squared seals engraved with human or animal motifs. Seals are bearing inscriptions, generally considered as written words.

The seals suggest trading among several populations. Generally, these seals are created using steatite, occasionally in silver or other materials. The seal shows a relief image and a script, usually very brief. Several seals include markings on the rear side or along the edge that are similar in appearance to Roman numerals [3].

The icons on seals are representing a single local animal, domesticated (long-horned and short-horned bulls, humped zebus, water buffaloes, goats) and savage (rhinoceroses, tigers, gavials and elephant) but also human beings in a yogic position. One of these icons is defined as the "Lord of the Beasts" shown a man seated cross-legged and wearing a water-buffalo headgear [4,5], in fact a "sitting buffalo". According to Ref.4 and 5, the animal is probably a totemic animal, that is the ancestor of a group of people or clan. The dominant image is accompanied by an item that could be a basket, fountain, a sacred tree or a "stem" emblem such as one also shown being carried in processions. In Fig.1, a sketch of a seal with a one-horned animal is shown. Some archaeologists suggest that these seals were used for commerce purposes, or worn as a protective amulet [6,7].



Fig.1 A seal with a one-horned animal. Probably a bull, with decorated blanket and neck, the animal is in front of a wedding pole and a basin [5].

The markings on the rear side or along the edge with signs that are numerals excited several hypotheses on the Harappan knowledge of mathematics and astronomy. In [8,9], it is reported the work of A. Seidenberg, an American mathematician. Seidenberg explains a possible migration of concepts and formulas, in particular the π -number, ratio of circumference and diameter, and some trigonometric relations, from Harappa to Babylon and then to Greece. According to [3], several seals demonstrate the formulas for circumference and area of a circle, with the π -number, which began with the p-letter in the inscription (the origin of Greek notation should be in the Harappan notation).

According to J. Ranganath [8], seals relay on concepts pertaining to science, astronomy and mathematics, central to Rig-Veda and Sulba-Sutra, and that the images are representations of constellations. The fact that seals have a Vedic origin dates the Harappan civilization back to at least 3500 BC. "This means that they were contemporaries of the ancient Egyptian civilization and that the art and culture of these peoples may possibly have had as substantial bearing on consequential Semitic and Indian cultures"[8]. Ranganath indicates that these images accompanied by a text served more as communicative graphics than as mere accounting of occurrence. The high level of stylisation reveals also a wide spread use of symbolic system among the inhabitants of Harappa. We can then properly consider the Harappan images on the seals as true icons.

The fact that domestic animals, such as bulls, appear on seals in front of offering place or sacred stems show the relevant role of cattle breeding and of the use of animals in human agricultural activities. These animals were the basis of those new civilizations flourishing in Egypt, Mesopotamia and Indus valley. Icons with an animal and, in front of it, an offering place or altar can be easily found in texts and paintings of ancient Egypt. In many cases, the animal is not only a totem but instead the representation of a god.

The Egyptian Museum of Torino shows a beautiful "Book of the Dead": in the chapter about the cultivation of the fields of Osiris, we can see several images representing animals (cows, bulls, a superb lion) and in front an altar or an offering table. In the Book of Dead, we find several representations of a herd with seven cows and a bull¹: this herd is also painted on several tomb walls. Figure 2 shows a sketch of one cow of the herd in the Nefertari's Tomb, compared with a domestic animal on a Harappan seal.

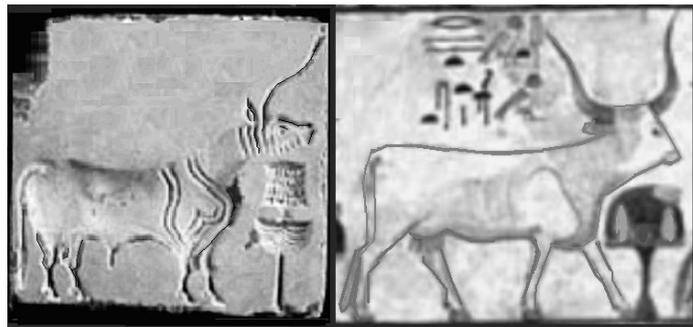


Figure 2. On a wall of the Nefertari's Tomb, we can see seven cows and a bull. In front of each animal there is an offering table. Adapted images of one of the cow (on the right) and of a Harappan bull (on the left) are shown for comparison.

¹ In the Egyptian Book of Dead, we find seven cows and a bull. It is possible a connection with the constellation of Taurus, the Bull, which contains the cluster of Pleiades, otherwise known as "The Seven Sisters". In the Pleiades star cluster only six of the stars shine brightly; the seventh, Merope, shines dully because, according to Greek mythology, she is shamed for eternity for having an affair with a mortal. In the representations the herd of seven cows and a bull in the Book of Dead from Maihirpre's Tomb, and in the herd painted on a wall of the Neferati's Tomb, one of the cows has a black coat.

At the Egyptian Museum of Turin, we can admire also a bas-relief with god Amon represented as a double ram and in the middle a sacred fountain (1292-1186 BC). A beautiful ostrakon in the same Museum attracts attention on itself, showing a goddess in cobra form, near a very rich offering table.

In Egypt, such icons with animals are a direct representation of gods and then have religious purposes. If we guess that the backgrounds of civilization in different area give the same solutions for the same concepts and ideas, we can imagine the totemic animals evolving in the representation of divinity attributes. It is possible that the animals on Harappan icons are representing divine forms too.

4. The signs

One clay tag stamped with an Indus seal has been found in Mesopotamia [8]. The historical contact with the Near East makes it highly probable that the Indus seal inscriptions mainly contain proper names of persons, their occupational or official titles and descent, as in the Mesopotamian seal inscriptions.

Inscriptions are also on pottery. Among the signs, we find some that are quite easy to understand: the man, the bow, the arrow, and then the hunt. Figure 3 show some signs and rendering given in Ref.4. We see the arrow as an inclined line. According to Fairservis [4], crossing lines means "star", but also an action, the action of "sharing" or "divide". To share means the action of dividing food among friends. It is interesting to observe that in a hunters-gatherers culture, as that of the Native Americas, the icon used to represent the "friendship" is composed of crossed harrows. The meaning could be that of "sharing the hunting". Probably, this meaning passed from the nomadic status to the settled down populations.

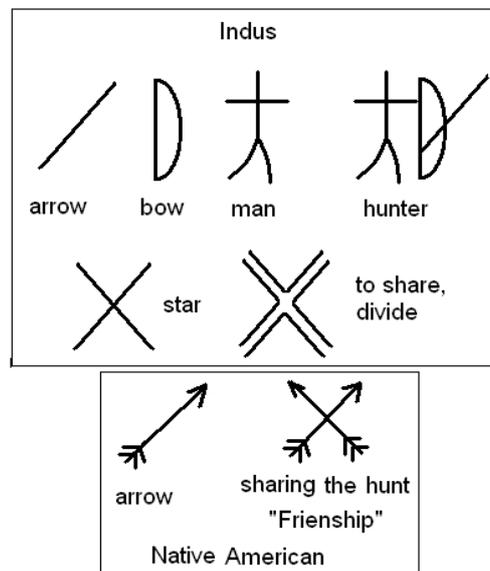


Fig.3 Harappan signs and interpretations according to [4] and a comparison with Native American symbols.

The Bronze Age Harappan society was based on an agricultural system able to feed a large town's population. Clay tags marked with a seal were probably used to identify the ownership when crop was transported to granaries. It is thus quite likely that Harappan seals would contain information on agricultural production and distribution. The Indus script possessed then a set of terms referring to crop and share of the agricultural product [8]. An interpretation, based on pictorial character of signs and their probable functions as determined by positional and statistical analysis of the texts, was given. In Ref.8 there is illustrated a set of closely related signs interpreted as 'agricultural terms' and compared with Egyptian signs.

One of the basic agricultural terms is again, the crossed sign, used to indicate ‘to divide, to share’. The comparison with Egyptian hieroglyphic enables to assign the same general meaning to the corresponding Indus sign (see Figure 4).

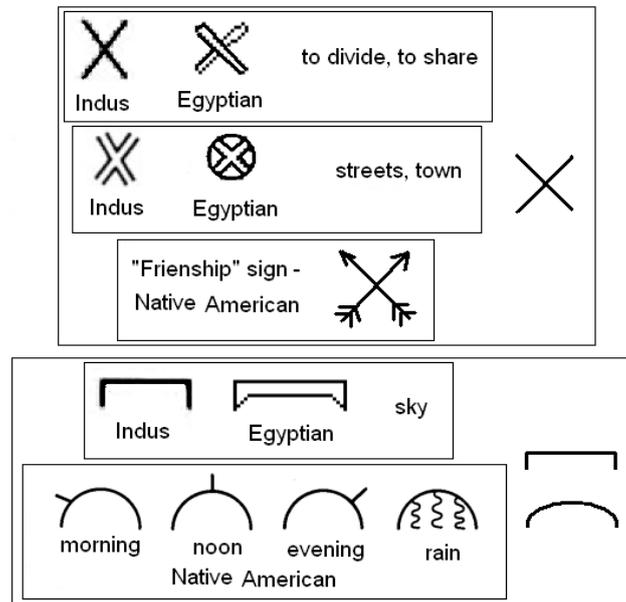


Fig.4 The signs for "share" and "heaven vault".

We can imagine that the fundamental meaning of the "crossed" symbol is that of sharing food among friends, and that a further meaning is that of subdivide in equal parts, as the symbol suggests. As previously told, a hunters-gatherers culture uses two crossed harrows has an icon for "friendship". The crossed sign describes also the ‘crossroads’. The Indus sign is interpreted in [8] as ‘streets’ or ‘part of a city’ (and in fact, the city is sharing the space and dividing is by means of streets) and has an exact counterpart in an Egyptian ideogram for "town". The crossed sign has then a different interpretation in Ref.[4] and [8], but the original meaning is that of "sharing".

Another sign shown in Figure 4 is that of "sky". It is the vault of the heaven, and also the gesture of showing the sky. The Indus element is near identical with the corresponding Egyptian ideogram for ‘sky’ and is accordingly interpreted to mean ‘sky, heavens, pertaining to god’ etc. When the element ‘sky’ is placed above the basic signs, the compound signs acquire the meaning ‘god’s’. Let us do again a comparison with the signs of Native American in Fig.3, where we see how the vault of heaven represents the sky. Of course, the graphic signs from different population can be compared only semantically with no phonetic connections [8].

Associated to a pictographic sign, there is a pictorial meaning. The intended meaning of the sign may or may be the same as the pictorial meaning. If pictorial and intended meanings of a particular sign can be hypothesised, an identical meaning is strengthening the assumed interpretation. Of course, this procedure does not yield clues for phonetic reading: if pictorial and intended meanings differ, they may be connected by homophony [10], and we in front of a syllabic writing.

5. The fish-like symbol

One of the signs frequently found on seals is the 'fish' [10,11]. According to these references, the fact that sign looking like ‘fish’ has this pictorial meaning is certified by the Indus iconography, in which the fish, sometimes represented like the Indus sign, is placed in the mouth of a gaval. The plain fish sign probably has the intended meaning ‘fish’ on Indus tablets that seem to mention offerings of fishes.

Because the 'fish' sign, plain or modified with various diacritic additions, occurs frequently on seals, this suggests that it denotes something else than fish [10]. A reasonable guess for the "intended meaning" is 'god'. A. Parpola gives the following explanation, The most commonly used word for 'fish' in Dravidian languages is a word pronounced in Proto-Dravidian like the word meaning 'star' (Fig.5). This homophonic meaning suits the expected meaning 'god'. This fact is found also in the Mesopotamian cuneiform script, where a prefixed 'star' sign, which means 'god', marks every name of a deity.

Following then Parpola, the system of symbols on Harrapan seals is a quite evolved writing system, where symbols represent the sounds. In fact, the fish-like symbol has another different interpretation from Fairservis, who is considering it as a loom-twist, and then used as honorific title pertaining to "rulership". In favour of this idea of "twist", we have to consider the fact that cotton fibres have a natural twist. The twisting of cotton to spin a yarn is then a fundamental action for an agricultural society, an action necessary for weaving textiles with a loom.

Signs	Pictorial meaning	Intended meaning
	fish (a)	star, god
	roof+fish	black+star (Saturn)
	fish+6	six stars (Pleiades)
	loom-twist, knot (b)	rulership

Fig.5 Is it a "fish" (Parpola (a)) or a "twist" (Fairservis (b))?

The fish appears also in astronomic notation. The orientation of streets and buildings according to cardinal directions in Harappa provides evidence for a practice of astronomy. In Hindu religion stars and planets have important divinities as 'overlords'. Moreover, the Veda texts prescribe that children should be given secret 'star names'. When Vedic interpretation is accepted, it is possible to guess that the 'fish' signs on the Indus seals are Proto-Dravidian names of stars, used as symbols for gods and as parts of human proper names [9].

Numerals are often accompanying the "fish" sign. Numerals belong to those few Indus signs whose function and meaning can be deduced with fair certainty, because they consist of groups of vertical strokes. This is the way numerals are represented in many ancient scripts. One interesting sequence is '6'+ 'fish'. According Parpola, this means '6 Stars', which is the Old Tamil name of the Pleiades (the Pleiades are seven but one is dull). '7'+ 'fish' corresponds to the Old Tamil name of the Ursa Major, and this name is in one of the largest seals. The stars of Ursa Major are identified with the ancient "Seven Sages" in the Vedic culture, who have a counterpart in the Seven Sages of the Mesopotamian religion.

Among diacritical marks added to the basic 'fish', there is a sign looking like a 'roof' placed over the 'fish'. In Proto-Dravidian 'roof' was nearly homophonous with 'black'. The Indus sign consisting of the pictures 'roof' over 'fish' can be read as 'roof-fish' in the sense of 'black star': in Old Tamil the 'black star' is actually attested as the name of the planet Saturn [10]. The discussion of Parpola, based on the proto-Dravidian sounds seems to tell that the Indus script is partially a phonetic representation of the Indus language.

6. Conclusions

The problem on the nature of Harappan signs is still open. According to many researchers, the Harappan signs are representing a true writing systems. And in fact, as we have reported on the discussion of the fish-like sign, researchers are using the phonetic of Proto-Dravidian to understand the meaning of some signs. Then the Indus inscriptions should be a syllabic writing. Some researchers are against the syllabic nature of Harappan signs. The reader can find evidences at Ref.12. Let us just report one remark told by Fairservis: "seal writing is not necessary writing derived from the oral language. It has its own meanings and in effect need not have verb, adjective or adverb. Rather it may be simply a kind of label specifying the individual or his god, house, or belongings, much as a heraldic device" [13,14]. This idea of heraldic sign is in agreement with considering the animals on seals as totemic animals. Hopefully, an increase of shoveling activity may reveal much more data to fix any limited interpretation and improve the knowledge of Harappan scripts.

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