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INDUS SCRIPT: COMPLEXITIES AND DECIPHERING CHALLENGES

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Abstract: *The Indus script dated to a period earlier than 2600BCE, reflects the fundamental changes in social, political and ritual organization of the Harappan civilization that accompanied the formation and consolidation of cities when the first inscribed era of economic and political hegemony emerged that lasted for 700 years. This paper makes an attempt to understand the emergence of the Indus script, the challenges behind the decipherment of the script and also to understand how the script was used and the probable reasons behind its disappearance.*

Keywords: *Indus, Script, Logo syllabic, Decipherment, Disappearance.*

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Introduction

Writing on objects is found in all Indus Period sites, throughout the streets and houses. But it is also observed that not everyone used the writing. Broken seals, sealings and inscribed pottery would have accumulated with garbage on the streets or have been dumped into abandoned houses. It is also noticed that the objects were displaced from the place where they were used, because many earlier excavators did not record the context in which seals were found, so one cannot assess whether they were in secondary deposits or primary deposits. Although recent excavations have defined these different contexts, one can sort out the problem of identifying where seals and inscribed objects were used. Like, the major streets leading into and out of city gateway, the craft workshop areas were near the houses in the high walled areas. There are no seals found in pottery manufacturing area, while in the bead and shell working area a number of inscribed objects have been found. The script was used in different ways and several patterns have emerged. First, only certain people owned seals and few people were able to understand about it (Mark Kenoyer, 1998).

The script was openly visible to general public, and graffiti was openly visible on trade vessels. Writing was used in everyday context as well as religious purposes, but the presence of the script on gold jewellery, copper tools and stoneware bangles suggests that only the very rich and powerful wrote their names on personal objects. A large signboard from Dholavira shows evidence of large writing. The most important recent discovery is that the style of writing and the carvings on seals changed over time such as most inscriptions are small or miniature. Moreover, small tablets without animal motifs but with the Harappan script comes from the middle to the later part of the mature Harappan phase.

These patterns indicate that leaders, administrators and professional artisans were probably not the only people who owned or used inscribed seals, but many of them may not have been able to read and write. Nevertheless, everyone in the society understood the power and authority reflected by the writing. The use of the Indus script throughout the Indus valley and Saraswati valley regions reveals a period of cultural and economic integration. The writing must have reinforced this integration and validated the powers of the ruling classes. The most common animal, the unicorn, is mythical and the other animals must have had some important symbolic meaning. On the small tablets, writing and occasional narrative scenes are seen on a miniature scale illustrating public ritual. Therefore, writing and seals remained important to the political and ritual elites as long as trade networks in the cities continued to exist (Mark Kenoyer, 1998).

Significance and Limitations

It is of utmost importance to study the Indus script to look at the complexities and the challenges of deciphering because it offers an insight into the past, especially of the ancient Indus valley civilization so as to analyse how Indus cities became strong when the elites, merchants, landowners and traders used the script for authoritative purpose. It is also important to study the Indus script to know about the information given on the seals that exist in the form of different signs and symbols which reflects the untold stories from the past.

The present study primarily focuses upon the expertise and knowledge related to the work on the Indus script. It primarily covers archaeology in the context of the emergence of the Indus script. The Scope of study is however limited to semiotics and linguistics.

Literature Review

Asko Parpola in his book *Deciphering the Indus Script* discusses about the Indus script that represent logo-syllabic writing. According to him, it does not constitute a closed system of single-valued graphemes since the syllabic and alphabetic scripts and their whole meaning could be understood. The author moreover suggests that individual signs may be interpreted one by one, and many of the graphemes are likely to remain eternal mysteries. The interpretations presented by Parpola, although few in number, suggests that the Indus script was essentially similar to the other pictographic scripts created before the middle of the third millennium BCE. Moreover, the language of the Indus people was Dravidian and that they professed a religion that was genetically related to the religions of both ancient West Asia and later India.

The Harrappan religion emerging from these interpretations is in an interesting way reflected in the Indus pictograms. As iconic signs made use of the picture puzzle (or rebus) principle, they simultaneously communicated two separate messages, one pictorial, one phonetic. It seems therefore that the creators of the script were at pains to invent such iconic symbols so that the two messages would be in harmony with each other. For example, the 'roofed fish' (pictorial message) as the rebus for the 'black star' (phonetic message), both symbols stand for the deified dark planet Saturn, conceived as riding the slow-creeping tortoise.

According to Ancient History Encyclopedia

> The Indus Script is the writing system developed by the Indus Valley Civilization and it is the earliest form

of writing known in the Indian subcontinent. The origin of this script is poorly understood: the writing system remains undeciphered, there is no agreement on the language it represents, no bilingual texts have been found so far and its connection with Indian writing systems proper (e.g. Brahmi, Devanagari and Bengali script) is uncertain. This is the main reason why the Indus Valley Civilization is one of the least known of the important early civilizations of antiquity (www.ancient.eu)

Methodology

The methodology that has been followed in this study is first hand data collection by conducting field study of the selected sites and museums and also referring to excavation reports. Secondary sources in the form of books, internet sources have also been consulted subjecting them to external and internal criticism.

Emergence of the Indus Script

The Indus script was invented around 2600BCE, but from the Neolithic and Chalcolithic period onwards, artisans painted and incised symbols on pottery and other material goods. Some symbols are simplified picture of plants, animals or sacred mountains while others are abstract geometric shapes, lines, circles and triangles used for magical protection or to identify the power of a vessel. These symbols reflect common cultural perceptions of the natural environment and sacred powers. The use of symbols was a common feature of all sites of the Indus valley. Early excavations at Harappa and Nauwshero suggest there may have been one or more early Indus scripts. At Harappa there are evidences of multiple abstract symbols but some symbols are identical to characters used in the later Indus script suggesting that they represented the same sounds or meanings. In Mesopotamia writing was invented to keep records of trade around 3300BCE and in the opinion of some scholars Indus script shows some similarities with the proto-Elamite Script (3100-2900BCE) (Fairservis: 1986:10).

However, before the invention of writing all these regions had been in contact through overlapping trade networks for hundreds of years. Egypt developed a script in response to contacts with Mesopotamian traders or colonists who used writing. The Indus script may have been inspired by contact with Mesopotamia. The acceptance and eventual adaptation of the Indus script by all of the regional settlements should be seen as a process stimulated primarily by local needs and fulfilled using a culturally meaningful set of signs. Numerous attempts have been made to relate Indus to other known scripts, but only connection with Proto-Elamite Script Susa III, Elan Ivan can be traced which is considered the oldest civilization in Iran. However, evidence of this connection rests on weak grounds.

Asko Parpola who has been working on Indus script has concluded that the Indus Script is not directly related to any known writing system. Evidence of writing in the Indus valley is first found inscribed on pottery but no site has yet been identified where writing was first invented. Most examples of Indus writing come from the excavations of Mohen jo Daro and Harrappa, but some 60 different sites throughout the Indus valley have contributed one or more objects with script. The Indus script as known from seals and other inscribed objects emerged as a fully formed system of abstract signs called graphemes. Over 4200 objects have been discovered, but most inscriptions are extremely short (Parpola: 1993: 571-86). The average inscriptions contain five signs or graphemes while the longest series has twenty-six. After careful comparison scholars have agreed there are 400 and 450 different signs or graphemes, but since they are of different handwriting it is difficult to categorize these signs (Parpola: 1994:1669-70).Computerised studies have helped in identifying the signs that come after each other. Some complications arise when signs are actually joined together to form a compound character. Many inscriptions consist of only one sign: in three cases, the grapheme must represent a word or an idea. Although it is generally agreed that the Indus script is not an alphabetic form of writing, it does not have enough different signs

to be a logo syllabic (morphemic) where a single sign can mean a word, a syllable or a sound. Most scholars therefore suggest that the Indus script represents a logo syllabic writing system where a sequence of signs would represent either a complete word or a sentence. Some other ancient writing systems that have been deciphered begin by using pictographic symbols to represent an idea (ideographs) or a word (logographic), some symbols represent a syllable or a single sound (phoneme). Early logographic script such as archaic Sumerian had over 700 different signs. In Indus script some of the signs do look like pictographs, for example a fish or a man holding a bow. When used individually such signs may have represented idea or words or even entire stories. So, the Indus Script combined both logo syllabic and ideographic system at the same time (Fig.1). Thirdly, versatility may reflect the experimental nature of the script and its use by newly emerging elites.

Uses of Indus Script

Indus script was primarily used through the medium of seals, tablets and copper tablets. However, adaptation of the script may have taken several generations. Eventually, artisans used seals or wooden moulds to produce numerous copies of inscriptions or narrative scenes on fired terracotta and glazed faience tablets. Potters used seals to impress the writing on pottery vessels, usually the disposable drinking cups. Artisans and workers, who may have been illiterate, produced these and other examples of the script, using or copying signs that they could not read. Many scholars would agree that the people who used these inscribed objects and read the messages encoded in the signs were the people who controlled the city administration. Some seals may have been used by religious leaders for special ceremonies and other was used by the landowners or traders. In all of the major settlements the literate elites, ritual specialists, merchants or land owners used writing in many different contexts in the home and at work such as on personal ornaments and ritual objects as well as on trade goods (Fairservis:1989: 133-41).

It appears that they were comfortable with writing messages to each other on pottery vessels and write names or protective charms on wet clay vessels or sealings. Some literate individuals who travelled to distant lands probably carried their seals but so far, no seals or impressions with foreign writing have been found in the Indus valley. The Indus script was carved, incised, chiselled, inlaid, painted, moulded and embossed on terracotta, glazed ceramic, shell, bone, and ivory, sandstone, steatite and gypsum, copper and bronze, silver and gold. Script was also woven onto fabrics and basketry, carved into wood, inscribed onto palm leaves and possibly painted on the human body, all being perishable materials (Fairservis:1983: 58-66).

The wide variety of materials and techniques involving the Indus script is unparallel in the third millennium BC. In most instances, script was written from right to left. This practice can also be seen in Semitic script such as Arabic or Hebrew where longer texts that comprised more than one line were sometimes written in alternating direct called Boustrophedon. This meant that the first line proceeds from right to left and the next line begins from left to right. While this reversibility is confusing for archaeologists and linguists, it may have been normal for the people who were writing and using the script. Indus script found on seals of square and rectangular shapes made from fired steatite are most extraordinary category of object. The soft soapstone was carved, polished and then fired in a kiln that hardened the surface. This hard outer surface is commonly referred to as glazed (Mackay: 1983:346-7). Seals made of metal are extremely rare. Two seals made of silver with unicorn motifs and script were found at Mohen jo Daro and animals have been found at Lothal and the site of Ras al Junayz in Oman (Kenoyer: 1993:245-79).

Animals depicted on seals are usually males. They include domestic and wild animals as well as mythical creatures such as the unicorn. Some

seals contain more complex iconography scenes that represent mythological or religious scenes. The smaller seals could have been hung from the waist or worn around the neck without much inconvenience. A lost seal with the writing and animal motif intact could be used by anyone for any purpose like a credit card today. In Mesopotamia there was punishment to use illegal seals or seals lost by owner, but nothing can be said about the mode of punishment in respect of the Indus seals. Change in design however suggests that the change was probably introduced so that the seals would not snap off easily.

Long rectangular seals had a hole drilled from the side across the middle of the seal. These were occasionally broke in two pieces along the drill hole. A seal that was broken in two would have been useless, and most of the seals that has been found in the streets of the cities may have been broken intentionally so that they could not be the rescued illegally. It has been observed that people occasionally lost their seals while walking or riding through the city. Seals were sometimes broken when they were no longer useful or people buried them in their homes for safekeeping. No seal has been found in a human burial. Change in the shape of rectangular seals is reflected by the elimination of the central animal motif. This type of seal has abstract writing. Impressions made by the square seals carried two distinct messages. One is seen in the script that was probably understood by illiterate workers delivering bundles of goods. These were stamped with animal motif so that it would not be difficult to identify who the owners were and to which places they should be taken to. The specific message in writing must have catered to literate merchant who also must have been the owner. Rectangular seals on the other hand could only have been used to communicate with literate trading partners. Little sealing from long rectangular seals have been found, perhaps these seals were not used in everyday trade but had a different function. These two types of seals may represent a chronological change in respect of seal styles, but this has not been confirmed yet.

Another use of writing can be seen on miniature tablets made of incised steatite, moulded terracotta or faience. These tablets have an animal motif on one side and writing on the other. Numerous duplicates of incised steatite tablets made from a single mould have been found. The writing usually consists of a short inscription on one side and numerals on the other side. Tablets that have numbers on one side may represent some kind of accounting system. The Indus tablets may have been used as tokens that were probably made in advance and distributed when goods were brought into the city as tribute or for sale. Thus tablets appear to have been used exclusively in larger cities, because only one or two examples have been found from smaller settlements like Lothal, Chanhudaro, Kalibangan and Ropar (Vats:1940: Page number has not been given in the Bibliography by the author).

But the discovery of workshop where these tablets were made has been a major breakthrough and would help to interpret their function. Rectangular copper tablets with incised writing and animal motifs are found almost exclusively at Mohen jo Daro. The reverse side of copper tablets usually has an animal or geometric motif. The only eight inscribed copper tablets have been found at Harappa made with raised script that shows the use of different technique. One tablet shows a hunter with a bow wearing a horned head dress, similar to those on figurines and carved on some of the seals. Copper tablets have intrinsic value. They can be re-melted and used to make other tablets or tools. Many copper tablets at Mohen jo Daro are approximately the same size and weight and may represent an attempt to create a standard currency or medium of exchange.

The fact that these tablets are not found outside of Mohen jo Daro indicates that they were limited to interactions and communications at the site alone and not on a regional scale. One of the least studied but potentially most informative contexts for writing is on pottery. Who came to the workshop specifically to write on the unfired pottery? Inscriptions made after firing, referred

to as graffiti comprising of large black- stripped storage jars invariably have bold graffiti on the curving shoulder of the vessel often written at an angle as if the writer did not care how it looked.

The inscriptions probably represent the owner's name, the vessel contents, or the destination. Parallel lines are often scratched onto the rims of the jars of different sizes, but there is no correlation between the number of lines and size of the vessel. Perhaps they represent how many measures of grains, oil or beer were poured into the jar, or they may indicate the number of times a jar has been refilled and emptied into another container.

Inscriptions scratched onto a vessel in use reflect the practical application of writing in the course of active transactions. The traders and consumers of these specific goods must have been able to read and write or at least recognize specific symbols. One of the most exciting discoveries of the use of script has been from thegold ornaments excavated from Mohen jo Daro in the 1920s.

A large collection of gold objects with minute inscriptions has been found that probably represent the names of owner scratched on to the polished surface. All inscriptions appear to have been made by the same sharp, pointed tool by the same hand. These inscriptions are extremely important because they are clearly different from the types of inscriptions found on the large copper Celts and Chisels. On copper or bronze tool, the writing appears formal. Beyond the commercial and personal uses of writing the Indus script appears to have had protective or magical powers. The repetition of specific signs at many different sites suggests that some signs were probably not personal names, but may have had some ritual significance. Other ritual uses of the script occur in conjunction with narrative scenes of what are probably rituals involving deities and powerful spirits. Short inscriptions associated with this scene may represent the names of deities, constellations, or supernatural events.

Disappearance of the Indus Script

Rapid disappearance of the script by 1700BC demonstrates that writing was used exclusively by a small but powerful segment of the population and did not play a critical role in the lives of the common people. The script disappeared when the elites who used this means of communication in trade and ritual were no longer dominant. The seal carvers lost their jobs and eventually when new elites emerged writing was not important. After the Indus Script disappeared, between 1900BC and 1700BC there was apparently no reason to invent a new script (Allchin, 1993)

Deciphering the Dilemma of the Indus Script

Deciphering the Indus script is not an easy task, as there must be some parameters or assumptions to be established in order to decipher it. If the script is logo syllabic, then it cannot be deciphered as an alphabetic or syllabic script, because a logo syllabic script can only be deciphered if the language that it represents is known. Most scholars agree that Indus script belongs to the Dravidian language family, but at present no language can be traced to Indus script. Over twenty-five Dravidian languages are presently spoken in the Indian subcontinent including Tamil, Telegu, Kannada and Malayali. A branch of north Dravidians called Brahui is still spoken in Baluchistan and Southern Afghanistan and hence not all scholars agree with the Dravidian identification. Today, several different major languages are spoken in regions. If individuals who spoke these languages moved to Indus valley and became established as merchant or landowners, their names and names of their deities may have been written by using the Indus script. There were many different dialects spoken throughout the Indus valley. Although it is possible that the Indus script represents the formal language spoken by elites, some names and words could reflect local dialects that varied from region to region. Consequently, if the writing on the seals represents more than one language or dialect, it cannot be deciphered until a bilingual text or a dictionary has been discovered.

If Proto- Dravidian is the major language component of the Indus Script, a second

technique can be followed by isolating root words that was shared by the different Dravidians languages. Root words represent hypothetical languages called Proto Dravidian from which all of the various Dravidian languages evolved. Root words that referred to a concrete concept can be represented by a picture of that object but abstract concepts must be communicated phonetically by using pictures of objects whose names could be combined to produce the intended word. This technique of communication is based on the Rebus Principal and the most common English example is the use of the symbol "bee" and "leaf" to create the word belief. The rebus principal was also used by Egyptian and Mesopotamian. Proto-Dravidian root words were originally monosyllabic. Using the rebus approach scholars have identified key words that represent the general meaning of specific Indus signs. The most convincing example is the fish sign. The Dravidian root for fish is "min" and the same word means "to glitter "flash or shine "the fish sign combined with six single strokes is very common in the Indus writing and it could be translated as "arumin" or six stars which represents the constellation Pleiades. Another common occurrence is the fish sign with seven strokes, which in Dravidian this would translate as "elu-min" or seven stars which is the name for the constellation of seven sages, i.e. the Ursa Major or the Big Dipper (Parpola: 1994:571-86).

Although these interpretations sound convincing, the rebus approach can only be useful when there is some way to check and confirm the meaning or the grammatical sequence of the words. An example that illustrates some of the problems in trying to decipher language using this approach is "eye-heart-apple" as meaning I love the big apple. Without knowing the proper sequence of the words or that apple should be read as the Big Apple and that the Big Apple is another name for New York city the signs eye heart apple could just as easily be read, I love apples, apples love eye, eyes blood apples, or by using only the first letters of the words eye- heart- apple. EHA and reverse would be the next best thing to finding a bilingual text.

However, till date, no long texts have been found. If they were written on palm leaf manuscripts or parchments, they would not have been preserved in the humid climate of the Indus valley. Over fifty different claims at decipherment have been published. But none of them meets the stringent requirement of the General Academic Community. At present it is difficult to check the proposed interpretations and however logical or convincing they may be they do not represent a decipherment (Parpola: 1994:571-86).

Conclusion

The Indus script invented around 2600 BCE reflects the fundamental changes in social, political and ritual organisation that accompanied the formation and consolidation of the Indus valley civilization. The Indus script can be found on seals used by elites, merchant, landowners and traders for authority purpose and these people could only read the messages encoded in signs and they also controlled the Indus valley administration. The Indus script was carved, incised, chiselled, inlaid, painted, moulded and embossed on terracotta and glazed ceramic shell, bone and ivory, sandstone, steatite and gypsum, copper, and bronze, silver and gold. Indus script is considered as logo syllabic script, which was written from right to left like Semitic scripts.

The script disappeared when the elites who used this means of communication in trade and ritual were no longer dominant. Many attempts have been made for the decipherment of the script but not one proved convincing even though we may never know the specific meaning of the script or who could read and write it. The scripts represent a shared set of symbols and beliefs that was spread out over an extremely large geographical are. These shared beliefs must have played an important role in the integration of the urban and rural populations obtained through trade or created by new technologies.

Illustrations

Fig. 1: Rhinoceros, Bull and Unicorn Seals found from different sites of Indus Valley Civilization bearing different varieties of the script.

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