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29. Terminal Ideograms in the Indus Script

THE study of the Indus script has come of age with the publication of two comprehensive, computerized concordances which cover between them the entire known inscriptional material of the Harappan Civilization (Parpola *et al.*, 1973, 1979; Mahadevan 1977). These concordances present the texts and the relevant background data in a systematic manner, enabling scholars without direct access to the original material to undertake analytical studies of the inscriptions and to formulate or verify hypotheses regarding the nature of the script and the typology of the underlying language.

Some positive results have already emerged or been confirmed by analytical studies based on the concordances. The determination of the direction of writing (from right to left) and the segmentation of the texts into probable "words" and "phrases" through simple word-division techniques are among the more secure results obtained so far (Mahadevan 1977, in press a).

It is, however, significant that most of the initial results flowing from a careful study of the concordances are negative in character:

1) The Indus script is *not* alphabetic or quasi-alphabetic, judging from the number of individual signs and their functional and distributional characteristics.

2) The Indus script is *not* closely related to any of the contemporary pictographic scripts of the third and the second millennia B.C., even though the Harappans were in contact with the West Asian cultures and there could have been diffusion of ideas regarding writing systems. The presence of a few common pictograms or ideograms (e.g., man, fish, mountain, river, rain, city, crossroads, house, plough, etc.) may be traced to such diffusion of ideas rather than to

direct borrowing or common descent. Pictograms and ideograms, by their very nature, are bound to have resemblances even if they belong to different and independent writing systems. Sign sequences in the Indus script are unique, bearing no relation to any of the West Asian scripts.

3) The Indus script is *not* related to the later Indian scripts, namely, the Brāhmī and the Khorashṭhi. The attempts to link features like conjunct-consonants or medial vowel signs of the later Indian scripts with the supposedly similar features of the Indus script have not been successful.

4) The most common supposition that the frequent terminal signs of the Indus script represent grammatical suffixes, especially case endings, has *not* been confirmed by the concordances. A careful study of the concordances shows that the most frequent terminal signs are too closely related to their antecedent signs and sign groups with which they occur in terminal positions in all contexts, to be variable case endings. The relationship appears to be semantic rather than grammatical.

5) The Harappan language is *not* related to the Indo-European family of languages, as there is no evidence for prefixing or inflectional endings in the Indus script.

6) The Harappan language is *not* related to Sumerian or other West Asian languages which place the attribute after the substantive. The reverse word order of the Harappan language is proved by the occurrence of the numerals before the enumerated objects in the Indus script.

7) A major negative conclusion emerging from an analytical study of the concordances is that none of the published claims of decipherment of the Indus script is valid. Most of the attempts (especially those

which assign alphabetic or quasi-alphabetic values to the signs) can be easily disproved by a simple comparison of the frequency and distribution characteristics of the signs with those of the corresponding values in the assumed models. The more sophisticated attempts remain, at best, not proven.

Shall one conclude therefore that the Indus script cannot be deciphered at all and that all further attempts are bound to be futile and a waste of time? There are two good reasons why such a wholly pessimistic attitude should not be adopted. Firstly, it is an axiom of cryptology that, given adequate material, no code or cipher can successfully resist decipherment for all time. This is all the more true of ancient undeciphered scripts whose unintelligibility is a matter of accident rather than design. The corpus of Harappan inscriptions is growing steadily as new sites are being discovered and the known sites are taken up again for more intensive excavation. It is, therefore, reasonable to hope that in the near future the number of inscriptions in the Indus script will be large enough to lend itself to normal cryptanalytical procedures. The possibility that the Harappan language is totally lost without any surviving descendants in the Subcontinent is also too remote, considering the vast extent and the long duration of the Harappan Civilization. Secondly, it is quite likely that the Indian historical tradition, with its astonishing continuity and vitality, has managed to preserve at least some facets of the Indus Civilization, thus providing valuable clues for an understanding of the contents of the inscriptions in the Indus script. Since the pictorial motifs associated with these inscriptions, like the depiction of *Paśupati*, phallic symbolism, veneration of the *pipal* tree and the serpent are clearly seen to be connected with later Indian tradition, there is no good reason to deny the possibility of such interconnection between the contents of the Harappan inscriptions and the later tradition.

Any serious study of the Indus script must begin with a formal or structural analysis of the texts. Such a study will include compilation of a sign list and a concordance, tabulation of sign frequencies and statistical-positional analyses to determine the nature of the script and the language. It is also necessary to carry out a context-analysis of the inscriptions with reference to their background viz., sites of occurrence, stratigraphy, types of inscribed objects and the pictorial motifs associated with the inscriptions. It is at this level that the use of the computer has been

most productive (Knorozov *et al.*, 1965, 1968; Parpola *et al.*, 1969, 1973, 1979; Mahadevan 1977, in press a; Mahadevan and Visvanathan 1973). It is also at this level that some measurable progress has been achieved in matters like determination of the direction of writing, word division and delineation of the broad syntactical features of the texts. These studies seem to indicate that the typology of the Harappan language is non-Indo-European and resembles the Dravidian languages closely. One has however to leave the computer behind at this stage when one proceeds further to look for clues to find the meaning of the texts or phonetic values of the signs.

Emil Forrer (1932) pointed out that it was possible to acquire an objective comprehension of the contents of an inscription in an undeciphered script by the observance of parallel phenomena. Parallels can occur between a symbolic representation and a text associated with it, between the written object and its designation, or between the written symbol itself and its meaning. Parallels can also be set up by observing the similarities in the standard formulae employed in ancient inscriptions. Forrer was able to show that such comparisons revealed the basic grammatical features of the writing system even before its linguistic decipherment.

As I mentioned earlier, the method of parallels is particularly apt for a study of the Indus script on account of the continuity of the Indian historical tradition. It is probable that even when the Indus script ceased to be a writing system, some of the more important ideograms survived and evolved into traditional symbols of various kinds. Such survivals may consist of iconographic elements and other religious symbols, royal insignia, emblems on coins and seals, heraldic signs of the nobility, corporate symbols, totem signs of clans and tribes and the like. Pictograms and ideograms of contemporary pictographic scripts may also furnish valuable clues to the recognition of the probable objects or meanings (but not of course the sounds) depicted by similar signs in the Indus script. The comparisons should not be inconsistent with the results obtained from the formal textual analysis of the inscriptions.

In one of my earlier papers (Mahadevan 1972) I suggested the possibility that parallels drawn from the Harappan substratum might occur in both the Indo-Aryan and the Dravidian languages. To recapitulate briefly, the method of bilingual parallels is based on the following assumptions:

1) The Harappan seals, in accordance with universal usage, give the names and titles of the owners. It is likely that due to prolonged bilingualism and racial fusion in the Subcontinent, the more important Harappan names and titles passed into the later Indo-Aryan languages as loan words or loan translations.

2) It is possible that the later symbols, derived from the Indus ideograms were continued to be associated, even though in a conventional manner, with the later forms of the older names and titles represented originally by the Indus ideograms.

3) It should be possible to undertake a comparison of such traditional symbols resembling the signs of the Indus script and names and concepts associated with them in the Indian historical tradition, in an attempt to establish the original ideographic meanings of the signs.

Before I proceed to illustrate the method of bilingual parallels, I must mention two important changes in my line of thinking in the light of the new evidence available from the concordances:

1) I now consider that, in the present state of our knowledge of the Indus script, it would be more productive to search for ideographic parallels from the later bilingual Indian traditions, rather than look for homophones or rebus writing. The method of bilingual parallels enables one to extend the search for Harappan survivals to the historical, literary and religious traditions available in the Indo-Aryan and the Dravidian languages, without having to make any *a priori* assumptions about the nature of the Harappan language or the actual phonetic values of the signs, which would be implicit in a search for homophones. I am not suggesting that the method of homophones or rebus is inapplicable to the Indus script; but I now believe that one should first exhaust the possibilities of finding ideographic parallels to acquire a greater comprehension of the likely contents of the inscriptions, before proceeding to the stage of linguistic decipherment.

2) In my earlier papers (1970, 1972, 1973) I had proceeded on the assumption that the frequent terminal signs of the Indus script probably represented grammatical suffixes and that their values could be ascertained through the method of homophones. As I have mentioned earlier in this paper, the concordances do not bear out this theory. I am presently inclined to the view that the frequent terminal signs were most probably employed in an ideographic sense to indicate the class of persons to whose names

they are found suffixed.

It is also necessary to emphasize here the limitations of the method I propose. The tentative linguistic parallels suggested in this paper are not to be regarded as a decipherment of the Indus script. The very diversity of the later Indian parallels would preclude us from assigning any specific phonetic values to the ideograms of the Indus script. However I do claim that the parallels suggested from later Indian historical traditions would enable one to broadly comprehend the probable original meanings of the ideograms and the general contents of the texts. I readily concede that the results are tentative, even speculative, and will require much further study before they can be confirmed.

THE 'JAR' SIGN: ꓵ

This is the most frequent sign of the Indus script. It accounts for about 10 percent of the total sign occurrences. It can be established from formal analysis that the sign occurs as a post-fix, suffix or determinative at the end of the seal texts which probably give the names and titles of the owners (Hunter 1934). The sign seems to depict a vessel with ears or handles (?) and a tapering bottom. The vessel form of the sign is clearly indicated in the naturalistic representations found in two graffiti on potsherds excavated from an early level at Kalibangan (Lal 1974, 1978).

The symbolism of the JAR is closely associated in the later Indian religious tradition with priestly ritual. The legend of the "jar-born" sages is very ancient and is even found in the *Rigveda* (VII: 33) where it is said that Vasishtha and Agastya were born in a sacred pitcher. The Tamil tradition (*Puṟam*: 201) also refers to Agastya, who led the southern migration of the Vēḷir clans from Dwārakā, as having "arisen from a vessel." In Vedic literature and ritual treatises, (*Śatapatha Brāhmaṇa*: XII 7, 2, 13, etc.), *sata* is mentioned as some kind of a sacrificial vessel used in ritual. A later commentator (Śabaraswāmin in *Mīmāṁsa Sūtra Bhāshya*, 1:3:10) described *sata* as a wooden vessel, round in shape and perforated with a hundred holes. He has also cited this term as an example of words of *mlechha* origin without an etymology in Sanskrit. There have been numerous finds of perforated pottery jars from the Harappan sites. It is not unlikely that these perforated jars had some ritual purpose.

It thus appears that the JAR sign of the Indus script

is a pictogram depicting a sacrificial vessel used in priestly ritual and probably employed as an ideogram suffixed to names to denote the concept of a priest. In later times, the jar symbolism continued to be associated with priestly and ruling classes and gave rise to the myth of miraculous birth from a jar. I now believe that since the JAR sign was probably used ideographically to denote a priest, it is not necessary that the words for "priest" and "jar" were homophones in the Harappan language.

THE 'LANCE' SIGN: ⸙

This is a terminal sign and it functions like the JAR sign. Both signs function as terminals not only at the end of texts but also in medial positions. The preceding sequences in either case can be shown to be complete "words" or "phrases" by themselves, most probably names and titles (Hunter 1934). There is therefore reason to believe that the LANCE sign, like its functional twin, the JAR sign is an ideogram suffixed to name formations. It is easy to recognize the pictogram as an arrowhead or a lance. I suggest that the LANCE sign was employed as an ideogram denoting the meaning of "warrior" when suffixed at the end of names and titles.

THE 'BEARER' SIGN: 𝔛

The pictogram depicts a person carrying a yoke across his shoulders with loads suspended from either end. The positional and functional characteristics of this sign are very similar to those of the JAR sign. Thus the BEARER sign also appears to be an ideogram occurring as a suffixed element in name formation.

It appears possible to interpret the ideographic meaning of this sign with reference to the "bearer" motif occurring in later Indian tradition. The term "bearer" is applied idiomatically in Indian languages to a person who "shoulders" any responsibility or "bears" the "burden" of any office. Thus the Sanskrit word for husband *bhartṛ* (literally one who sustains or maintains) is from the root *bhṛ*, "to bear." There are similar expressions derived from the root *vah*, "to bear," as in *kārya-vāhaka* "office bearer." One may also refer to the "yoke" words like *dhuraṁdhara* or *yugaṁdhara* (literally "yoke bearer") used as honorifics or names. It is interesting that in ancient Tamil tradition, ministers and senior officers of the king were given the title *kāviti* (literally "yoke bearer")

probably from *kā*, "yoke" (DED: 1193). On the basis of this evidence, one can interpret the "bearer" sign in the Indus script when suffixed to names as an ideogram with the approximate meaning of "officer" or "functionary."

A common tendency in the Indian tradition is for honorifics and titles to lose their original significance and become proper names. If a similar development had taken place in respect of the "bearer" symbolism, such names should be found among the princely or priestly families in later times. This reasoning leads one straight to the earliest and the most famous of the "bearer" clans in ancient India, the Bharatas (literally "bearers"). It is significant that the Bharatas were both priests and rulers and occupied the Indus region during the Vedic Period. The Andhras were another famous dynasty with royal names derived from the "bearer" motif, viz., Sātavāhana and Sālivāhana. In the Tamil country, the Cheras were also known as Poṟaiyar, literally "bearers" from *poṟu* "to bear" (DED: 3729). Important evidence to corroborate this association comes from a series of late medieval copper coins of the rulers of Travancore (inheriting the tradition of the Cheras), which portray the "bearer" motif which is pictorially practically identical with the BEARER ideogram of the Indus script. (Cf. Elliot 1886: no. 197.)

It is interesting to observe the connection between the JAR and BEARER signs in the Indus script as well as in the later Indian tradition. The two signs occur in a similar environment in the inscriptions indicating that they belong to the same category. Another interesting feature is that these two signs are often found ligatured. In fact the compound JAR-BEARER sign occurs more often than the BEARER sign. When one turns to later Indian tradition one finds that names or myths connected with the "jar" and "bearer" motifs tend to occur in the same groups. The Kurus were generated in jars (*Mahabharata, Ādiparvan Gāndhārīputrotpatti*) and were also called the Bhāratas ("bearers"). The Andhras had "jar" names (*Sāta*) as well as "bearer" names (Sātavāhana, Sālivāhana). The names of the Cheras, Ātaṉ (probably to be derived from *Sāta*), and *Poṟai* also show both the associations. The Pallavas who claimed descent from a vessel (cf. *pāttraskhalitavrttīnām* occurring on the seal of the Pallamkoyil Plates of Rājasimha; Subramanian 1959) belonged to the Bhāradvāja gotra, another name with the "bearer" motif.

I have published earlier (Mahadevan 1972) what I consider to be the most interesting evidence connecting the ideograms of the Indus script with later Indian historical names. A search for royal names based on the "bearer" motif led me to the famous Andhra dynasty whose kings called themselves Sātavāhanas or Sālivāhanas. The suffix *vāhana* is connected with the "bearer" theme (*vahana:* bearing, carrying). However since the second element *vāhana* never occurs separately in these names, it struck me as probable that the preceding elements *sāta* and *sāli* might also be derived from the Harappan substratum. The BEARER ideogram in the Indus script often appears ligatured or compounded with one of two other signs—the JAR sign or the LANCE sign. In an earlier paper (1972) I proposed reading these ligatures from bottom to top on the ground that the JAR and LANCE signs were grammatical suffixes. I no longer hold this view and now believe that the ligatures may be read from top to bottom in the normal manner. These compound ideograms can be considered in the light of the interesting parallelisms shown in figure 29.1. The very close parallelisms between the compound ideograms of the Indus script and the compound names in the later Indian historical tradition provide good confirmation of the approach I have suggested.

The two compound ideograms can be interpreted on the basis of the ideographic values of their components. Thus the ligature JAR-BEARER ("priest plus officer") may indicate an officer or functionary with priestly duties. Similarly the ligature LANCE-BEARER ("warrior plus officer") may stand for an officer or functionary with military duties.

THE 'MAN' SIGN: 朱

This is a simple pictogram almost universally interpreted as representing a human figure. As a final sign it forms a frequent pair with the JAR sign, but never with the LANCE sign. It is to be contrasted with the ideogram of a "horned person," the latter obviously depicting a chieftain or a divine personage. Thus the plain MAN sign can be interpreted as depicting a servant or an attendant. The pair JAR-MAN occurring in terminal positions can be interpreted as ideograms for a lower order of priestly functionaries.

THE 'HARROW' SIGN: 巨

Kosambi (1956, 1965) made the suggestion that this sign is a pictogram representing the toothed harrow. Internal evidence for this identification is provided by the following compound signs:

朱 : Note the position of the harrow shown in front of the human figure and with the teeth facing the ground.

米 : Harrow in conjunction with a sheaf or bundle of grain stalks.

I interpret the sign as depicting a harrow and ideographically representing a farmer or tiller of the land. The characteristic position of the sign is terminal, frequently occurring in conjunction with the JAR, LANCE or BEARER signs. Such terminal clusters can be provisionally interpreted to indicate that the persons named in the inscriptions were perhaps farmers or tenants, serving under either priests, warriors or

Sign	Pictorial value	Equivalents in Sanskrit	Meaning
U	JAR	*Sata*	A kind of sacrificial vessel
↑	LANCE	*Śalya*	Lance, spear
癸	BEARER	*Vahana*	Bearing, carrying
癸	JAR + BEARER	*Sata-vahana* > Sātavāhana	lit., jar-bearing n. pr. of Andhra dynasty
癸	LANCE + BEARER	*Śalya-vahana* > Sālivāhana	lit., lance-bearing n. pr. of Andhra dynasty

Fig. 29.1. Indus ideograms in Indian historical tradition.

Sign	Pictorial value	Ideographic meaning
ᚒ	JAR (sacrificial vessel)	Priest
ᚁ	LANCE	Warrior
᚛	BEARER	Officer or functionary
᚛	JAR + BEARER	Officer or functionary with priestly duties
᚛	LANCE + BEARER	Officer or functionary with military duties
᚛	MAN	Servant, attendant or lower functionary
ᚓ	HARROW	Farmer, tiller, tenant.

Fig. 29.2. Terminal ideograms of the Indus script.

officers (as the case may be) or, alternatively, themselves belonging to these categories. It is interesting to recall here the ancient classification of the Veḷḷāḷar (the predominant agricultural population among the Tamils) into those who earned their livelihood by ploughing the land themselves or by having the land ploughed by others (Naccinarkkiniyar on *Tolkāppiyam, Poruḷ*, 34).

To sum up, it appears likely that the frequent terminal signs in the Indus script are probably ideograms indicating the occupations and social status of the persons to whose names these signs are suffixed. The tentative interpretations of these ideograms are summarized in figure 29.2. It is not yet clear whether these ideograms were actually pronounced as part of names and titles, as in later Indian caste names, or merely served as mute determinatives, as in the Egyptian script.

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