

CHAPTER - III

EARLIER

ATTEMPTS AT DECIPHERMENT

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Attempts to decipher Harappan texts were made as soon as A.Cunningham discovered in 1853 the first such script on a seal. After assembling all the Proto-Indic signs then available John Marshall⁽¹⁾ and his colleagues concluded that the writing in question was hieroglyphic. According to them the Harappan writing was independently developed, despite a superficial resemblance of some signs to Cretan and early Sumerian signs.

In the Late 1930s, the Czech Scholar B. Hrozny⁽²⁾, who had deciphered the Hittite Cuneiform writing, tried to compare Proto-Indic writing with the then still undeciphered Hittite Cuneiform, ignoring the fact that the latter was much later in date by more than one thousand years. He claimed that he had discovered in Hittite Cuneiform signs analogous with virtually all the Harappan symbols and compared exceptions with signs from Linear A, Cretan, Ugaritic, Egyptian characters and Phoenician. Hrozny read several names of gods in the Harappan seal inscriptions.

A number of theories have been propounded on the basis of the resemblance between the Harappan Script on the one hand and the Sumerian and Elamite Scripts on the other. For instance, L.A. Waddel⁽³⁾ and Pran Nath⁽⁴⁾ suggested that the Harappan Script was imported into India from Western Asia. David Diringer⁽⁵⁾ and K. N. Dikshit⁽⁶⁾ hold the view that the Harappan Script developed independently in India.

G.R.Hunter⁽⁷⁾ made a profound study of the Indus Script in all its different aspects after copying 750 inscribed objects. Unfortunately, some of the main principles settled by him in the beginning of his work led him to wrong conclusions. He readily admitted the probability that the authors of the inscriptions were Dravidians and was inclined to believe that they were the ancestors of the present Brahmins. As to the script he believed it to be mainly phonetic, never alphabetic, though he acknowledged that its origin was pictographic and ideographic. Furthermore, he was of the opinion that the script constitutes a syllabary of open and closed syllables, roughly 250 in number, many of them being complete words. According to him, the Brāhmi Script of India is derived from the Indus Valley Script.

The comparison between the Indus Valley Script and the Brāhmi Script carried to an extreme mars the whole work of Hunter. Relying on this comparison he passed from the script to the language and without noticing it he applied to the language of Mohenjo-daro what is exclusively characteristic of the Sanskrit language. Moreover, he tried to classify the Indus signs but did not analyse the compound signs. But for this defective methodology, the work of Hunter would have been useful to future Scholars.

Among those who made a limited analytical study of the Indus Script mention must be made of P. Meriggi⁽⁸⁾, S.Langdon⁽⁹⁾. Langdon tried to establish connection between Harappan and Brāhmi characters. According to his view, the

Brāhmi Script is derived from the ancient Indus pictographic writing. Meriggi believed that the Indus Script was an ideo-phonographic system of writing and assumed some symbols to be ideograms and others phonemes.

Swamy Sankarananda⁽¹⁰⁾ has interpreted the seals as products of Aryan culture and the language to be Sanskrit. The Swami is a Tantric student, and he visualizes everything from the point of view of Tantrism. According to him the solution of the Indus Valley Script will be found in the Tantras. The resemblance between the Indus Script and the Egyptian is limited but Swami Sankarananda made use of this resemblance to decipher some signs of the former. He reads the Indus inscriptions according to the Tantric values and these values are alphabetic. But the Swami is not consistent in the values he gives to the signs and arranges them according to his fancy. As for example,

△		∇	ॐ	卍	"	◇
प	गा	म	पै	दि		प
△		∇	ॐ	ॐ		"
प	गा	म	पै	प	दि	प
△		∇	"	ॐ		
प	गा	म	दि	प		

These three inscriptions will show how inconsistently he reads the signs. The first three signs '△ ||| ∇' are always read 'प', 'गा', 'म' and at the end of each of

these inscriptions the Swami reads 'ॐ', 'ॐ'. But the end of each of these inscriptions is different from the end of the other two. In the beginning of the inscriptions the sound 'ॐ' corresponds to 'ॐ' always, but how does he explain that the final 'ॐ' corresponds to three different signs, one of them at least 'ॐ' is totally different from the other two. So the attempt of decipherment of Swami Sankarananda does not seem to be acceptable. Sydney Smith⁽¹¹⁾ has commented on the mechanical nature of the writing and attempted to discover the determinatives, end signs and beginning signs. On the other hand Flinders Petrie⁽¹²⁾ tried to interpret the Indus symbols as ideographs, on the analogy of those of Egyptians and assumed that the Indus seals contain only titles of the officials. Gadd⁽¹³⁾ has ventured to discover in the Indus Script an ancient Indo-Aryan language. G.de Hevesy⁽¹⁴⁾ drew attention to the similarities between the Indus Valley Script and the script of Easter Island, maintaining that the latter was the progenitor of the former. B.M.Barua⁽¹⁵⁾ tried to find out some correlation between the Indus Script and the Tantric code. A.H.Dani⁽¹⁶⁾ has observed that the formation of conjunct and open syllables in the later historical Indian Scripts is comparable to Indus compound signs but he did not proceed further with the actual analysis of the Indus signs. S.K.Ray⁽¹⁷⁾ tried to compare the Indus signs with Devnagari and Bengali characters. Krishna Rao⁽¹⁸⁾ has followed the method of comparison and identification of every Indus sign

with the original pictographic form. Its abstract forms are identified with the help of the archaic Sumerian Script and Egyptian, Minoan and Hittite Hieroglyphs. But most of the scholars failed to recognize the necessity of identifying basic signs and the system of joining them.

John E. Mitchiner⁽¹⁹⁾ has considered the language of the Indus people as Indo-Aryan, the Indus Script as phonetic and the signs to be accented. Kennier Wilson⁽²⁰⁾ has assumed that the Indus language is Sumerian. According to B. B. Chakraborty⁽²¹⁾ and Sankar Hazra⁽²²⁾ the Indus language is Indo-European. Gomathi K. Sankaran⁽²³⁾ has given value to the basic signs of the Indus Script almost same as those assigned earlier by S.R.Rao⁽²⁴⁾. In order to interpret the seals he tried to correlate them with the names of different Rishis, prophets or legendary figures. John Newberry⁽²⁵⁾ examines the Indus Script used by the different Shaman cults of Mohenjo-daro and Harappa. Of all the Shamanist cults of Mohenjo-daro, the key related structure of the script harkens to the initial organization of the Universe into four directions personified by elephant, tiger, rhinoceros and water buffalo of the lord of the four directions shaman. According to Egbert Richter⁽²⁶⁾ the Rg. Veda might have been influenced by the Indus way of thinking and that there might be more verses, which could be traced back to the inscriptions of the Indus seals. On the basis of this view he tried to identify a lot of Indus signs.

Supporting Rao's methodology P.N.Mathur⁽²⁷⁾ tried to

read a few names of early Surya Vansha dynasty. He said that in judging concordance of the names, people should allow for the variations that are natural in view of Sanskritisation of the pre-Vedic Prakrit of that time. Ramesh Jain and C.B. Tribedi have assumed that the Indus Script was phonetic in nature and followed a particular language i.e. the ancient Indo-Iranian language⁽²⁸⁾.

Some scholars have recently pointed out the need for a constructive methodology. Several of the major attempts to read the inscriptions have been made by groups of scholars, using a variety of techniques, including computers. A. Pargola⁽²⁹⁾ and his colleagues, at the Scandinavian Institute of Asian Studies, Copenhagen have systematically tried to analyse the signs and then put the data through a computer. Similar attempt was made by Knorozov, Gurov and other Russian scholars⁽³⁰⁾. In India Mahadevan⁽³¹⁾ also worked in this direction. It is J. Vacek⁽³²⁾ who pointed out that the computer is not able to correct a wrong presumption of the programmer. The analysis of a computer might turn out to be false because of a wrong point of departure.

There were attempts to establish a connection of the Indus Script with some other known scripts of the world. Out of several attempts the most productive became the suggestion that the Indus valley Script is similar to the Sumerian Script. The Scholar who made use of this approach was Henry Heras⁽³³⁾. He assumed that the Indus people were Dravidians and tried to reconstruct a Proto-Dravidian language for them

and for his interpretation he compared the Indus signs with Sumerian, Hieroglyphic and Proto-Chinese symbols.

Secondly he said that the inhabitants of Mohenjo-daro could not have been the ancestors of the present Brahuis.

Thirdly Henry Heras held the view that the Indus Script was pictographic or partly pictographic and partly logosyllabic owing to the fact that there are a large number of pictures of animate and inanimate objects in it. He also said that there are many signs which do not convey any idea to the careful observer, they almost look like alphabetic. They are signs that have a conventional phonetic value and may consequently be called phonetic and phonographic signs.

Fourthly, Heras observed that the signs of Mohenjo-daro do not stand for syllables and much less for consonant sounds only, but express full words.

He said that there may be a few mistakes in his interpretation of the inscriptions but in general his rendering of those ancient epigraphs seems to reveal the mind of those early writers.

The theory of Henry Heras created a sensation among the philologists and archaeologists although most of his readings were very unconvincing. The a priori assumptions of Heras led to absurd interpretations e.g. one seal is read, 'two blankets cold'.

The Russians and Scandinavian scholars and Mahadevan started with the presumption that the Indus language was Dravidian. B.V.Subbarayappa⁽³⁴⁾ and Subhash Kak⁽³⁵⁾ also

tried to decipher the Indus Script from different angles. Recently an attempt has been made by N. K. Verma⁽³⁶⁾. He has compared the diagram drawn by Santhal tribals of Indus signs and read words based on Santhal's sound values. This is totally an a priori assumption which cannot be verified archaeologically, for instance, migration of Harappans to Bihar and the Santhals retaining the script unchanged for nearly 4000 years though there is no trace of the Indus Script in original form after 1200 B.C. except for some signs in Brāhmi anywhere in India. Likewise R. Madhivanan tried to read the Indus Script on the basis of etymological and grammatical principles of Tamil^(36 c). This way, any word in any language can be derived depending on some value given to pictures and cursive Indus signs. This cannot be a scientific method to decipher the language of a civilization.

An assessment of various recent models of the decipherment of Indus Script is what is needed in order to know how much progress has been made in decoding the script. If there are some hurdles, they will have to be identified. An objective examination of the more significant models is made in the following pages.

FAIRSERVIS'S MODEL:

In an attempt to derive a new model for decipherment of Harappan Script, Fairservis studied various aspects of standardization of the Harappan way of life, its cultural and socio-economic structure (37). In this regard the following points are to be noted. Standardization of goods and services by the Harappans on an unprecedented scale was highlighted earlier by S.R.Rao (38).

Fairservis assumed that the Harappan language is proto-Dravidian. He made a serious effort to simulate the Harappan civilization as a form of Dravidian. To this end he set forth some historical and archaeological evidences indicating the similarities of a number of signs in the Harappan Script and the so called Proto-Elamite, which was assumed to be ancestral to later Elamite. Recently Mac Alpin (39) has brought forth evidence that Elamite was a Dravidian language. On the basis of this theory Fairservis tried to correlate the literary languages of the Dravidians with the Harappans. According to Fairservis the Harappan Script or the literary Harappan script is the beginning of a Dravidian literary tradition, presumably reaching to pre-literary Tamil via the Chalcolithic and megalithic stages.

Basically, he tried to equate the Harappan language with different South Indian languages, for example, Tamil, Telegu, Malayalam and Kannada.

As regards the character of the script, Fairservis holds that it is either word syllabic or syllabic.

With regard to the order of writing, the legend was cut from right to left on the seal but as a sealing it was read from left to right.

In his early attempt Fairservis had not thought of analysing some compound signs, but after 1973 he started analysing a few compound signs, but not the majority of them.

Fairservis presumed the sign, 'YU' to represent wheat or other crop, and that the sign, 'AD', represents a hunter or an archer. In order to analyse this sign he followed partly Rao's method⁽²⁴⁾ of analysis of compound signs eg., the archer sign is assumed to be a combination of three signs but gave each one a picture value or a word value.


man


bow

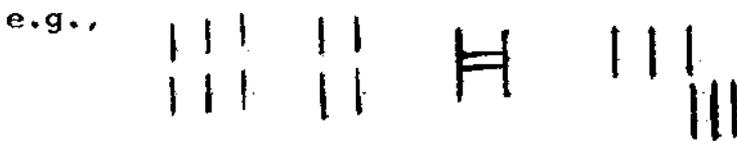

arrow

He gave this sign a meaning in Dravidian. The word for bow is 'vil' and for arrow it is 'ampvi' in Tamil, Telegu, Malayalam and Kannada. Putting them together and at the same time applying the principles of vowel contraction, the word 'vilampan' is obtained, which in Malayalam is 'vilampan, means 'one who superintends the distribution. 'Vilampu' in Tamil means 'serve food'.

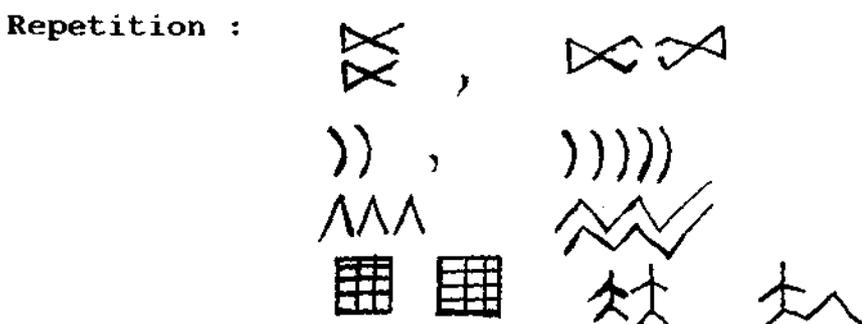
Of all the words for man and male 'al' is the only one

effectively shared by all the four Dravidian languages and accordingly Fairservis assigned syllabic value 'al' to the sign, '𑌎'. He gave the syllabic value to the sign '𑌏' as 'val' which has a near homophone in 'valai' meaning surrounding region. He interpreted the sign '𑌐' as a flower and has given the syllabic value of 'pu'. The combination of the sign '𑌑 𑌐' is read by Fairservis as 'vilampu'.

On the lines indicated by Rao in 1963, Fairservis made an effort to enumerate the various ways of the attachment of a number of strokes. According to his view, strokes were apparently arranged for style and it is therefore, possible to arrange them vertically as well as horizontally,



He suggested a related technique of numeration, doubling or repeating of the signs.



DISCUSSION:

Thus on the basis of the assumptions that Indus people spoke a Dravidian or Proto-Dravidian Fairservis made a comparative study of various signs of the Harappan Script and gave them syllabic value to derive words of South Indian languages. This is an unwarranted assumption which vitiates objectivity on the part of the decipherer.

Another drawback in such an assumption is that there is a long time gap between the Harappan and the earliest recorded Dravidian language in the Indian subcontinent. To fill that gap Fairservis tried to trace it to a language which had no script in the 3rd millennium B.C..

The next defect in Fairservis's methodology is the assumption that all Indus signs, simple as well as compound ones, stand for pictures from which a word or syllabic value is to be derived. Simple basic signs such as 'U', '^', 'E', 'D', 'V', 'O' etc are phonetic signs. The basic signs are not distinguished by him from non-basic ones and the purpose of adding strokes and joining signs is not understood.

Let us examine some of the 'meanings' and syllabic values he has given to compound signs of man. While accepting the picture of 'pipal leaf' as such he says that when it is attached to '†' + '⊗' = it indicates a female^(37c). This is a far fetched assumption because even

in Bahrain only a triangle stands for female. A more imaginative interpretation is given to 'P' as an arrow combined with 'pipal leaf' (37c). There is no pipal leaf design at all in it. Secondly the sign 'P' is accented thus 'P', 'P', 'P'. Being a basic accented sign it must have a simple sound value suffixed when strokes are added. One more example of his own imaginary pictorial representation is 'H' which he takes for a container. It is generally accepted as a 'harp'. Lastly 'Q' is not a fish but a 'knot' for him, which needs extraordinary stretching of imagination. He takes it as standing for 'chief pir' and its accented forms as 'head chief' (talpir) (37c). Even if it represents 'chief', the word for 'chief' can be found from any other language. While giving example of basic forms such as 'O', '◇', '人', '□', he thinks of a semantic value in a language of his choice namely Dravidian. He does not investigate why variations i.e. combinations of signs were made. He does not take even the few basic signs as having simple sound value because he thinks they are all pictures. With such assumptions the result could only be the imposition of a language of one's choice and thereby trying to adjust everything to one's preconceived notion of Harappan being Dravidian. The sign '||' double stroke which is clearly a word separator is taken as syllabic 'il' (settlement) in Dravidian and '◇', '◇' as indicating different kinds of settlements (37c).

I. Mahadevan made an attempt to decipher the Indus Script on the basis of the following points.

(1) He presumed that the Indus language belongs to Dravidian family and the signs are pictographs on the basis that the signs depict men, animals, insects, birds, fish, implements, structure, vessels etc.

(2) The Indus Script is generally written from the right to the left. On the basis of the statistical evaluation he said that 83% of the lines included in the corpus run from the right and about 7% from the left. He also identified some of the bi-directional writing of identical texts.

(3) The total number of signs in the Indus Script is estimated to be around $425 + 25 = 450$. He has not analysed compound signs.

(4) The Indus Script is a logo-syllabic Script possessing word-signs.

(5) He is strongly against a simple syllabic model of the Indus script and believes that it comes from word segmentation analysis. On the basis of word segmentation analysis he tried to establish the logographic character of the Indus Script and strongly denied the fact that it can be phonetic. He wanted to prove that the signs of the Indus Script are mostly word signs and cannot be regarded as

phonetic units (syllabic, alphabetic)⁽³¹⁾. Had he only analysed the compound signs he would have known that basic signs are too few to warrant an entirely non-phonetic writing.

(6) He considered some of the Indus signs as ideograms, eg.,



man



horned person



archer

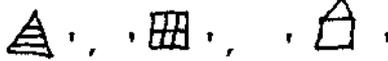
(7) He tried to explain that the improbable pictograms like fish, birds, insects, animals etc. are most likely to be names and titles in the seal-texts and can be understood or read according to rebus writing.

(8) As regards the numeral signs he identified them by logical sequence and the use of different signs on pottery and bronze implements. He assumed that numbers precede the objects enumerated and the system appears to be decimal.

(9) He considered that the short strokes and the inverted semi-circles are used to represent the units and tens of the numerals respectively.

DISCUSSION:

He has arbitrarily assumed the language to be Dravidian. But he could not substantiate it with any authentic evaluation of the evolution of writing. On the contrary such an a priori assumption vitiates objectivity.

He tried to interpret most of the Harappan seals on the basis of his hypothesis that the entire Indus Script is pictographic. For two reasons this hypothesis is unconvincing. The cursive signs such as 'U', 'O', '^', 'D', 'E', 'X', '‡' etc. and some pictures eg., 'field', 'hill', 'pipal leaf', 'cross-road', 'scorpion' and 'triangle' with horizontal lines have formed compound signs by being joined to other signs. The only pictures not joined are 'bird', and 'dog-like' animals, the latter appearing very rarely. In an ideographic writing ideographs are never joined because each picture or sign stands for an independent idea or action. Thus what Mahadevan considered to be ideographs are mostly in fact compound signs formed by combination of different individual basic signs⁽²⁴⁾. A few signs such as , may be determinatives.

Secondly, by analysing compound signs S.R.Rao⁽⁴⁰⁾ has demonstrated that the total number of basic signs including pictures in the Harappan Script is not 425 but only 62 which got reduced to 24 in the Late Harappan Script as a result of dropping pictures and alternate basic cursive signs.

By a permutation and combination of 34 basic cursive sign in Mature Harappan Script as many as 300 different looking signs were produced. With 62 cursive signs, including pictures the Indus Script could not have been ideographic. We shall soon have occasion to examine Rao's methodology and conclusions.

As regards Mahadevan's concept of Indus signs as word syllables it can be said that the basic signs did not stand for a word.

Mahadevan made a frequency distribution and positional analysis of the Indus signs with the help of computer^(31b) but he did not attempt to analyse them at all to determine the basic signs. Moreover, as Prof. Vacek has pointed out, the computer is not able to correct a wrong presumption of the programmer resulting into a misleading analysis⁽³²⁾.

Mahadevan has concluded that unless a bilingual Harappan seal is found the Harappan Script cannot be deciphered. But it must be remembered that the Linear B was deciphered by M. Ventris⁽⁴²⁾ although the script and language were unknown and no bilingual seal was found.

Of late Mahadevan has given a new interpretation to the brazier motif appearing on the unicorn seals and has considered it as 'soma patra' referred to in the Rg. Veda and he thinks that it represents extraction of soma juice. If this is accepted, it amounts to saying that the Harappan were Aryans because the extraction of somasara has only Aryan associations and not Dravidian. However, the objection to

considering the brazier as soma patra is that there is no vessel below the perforated vessel to hold the juice. On the other hand it may be the representation of Iranian fire altar (Rg. Veda).

EVALUATION OF AN APPROACH OF B. V. SUBBARAYAPPA

Dr. B. V. Subbarayappa has recently made an attempt to find a key in terms of numerals connoted by the various signs on the Indus seals, beads, amulets etc⁽³⁴⁾. He is of the opinion that the Indus seals were mostly used for a commercial purpose and perhaps to a limited extent as amulets. In either case, the number reckoning and numeral representation would have played an important role. He has presumed that the Harappa culture, must have, of necessity, developed a viable commercial transaction and hence evolved a number system of their own, besides weights and measures. Based on these assumptions and also in comparison with the Egyptian, Sumerian, Chinese and Brāhmi numeral systems he carried out an in-depth study of various symbols or notations animals and other motifs on the Indus seals. He considered that the basic elements are the vertical rod forms and specific symbols for 4, 5, 6, 7, 8, 9, 10, 20, 30, 40100 and 1000 and accordingly he worked out various derivatives of these notations.

He has derived various features of the Indus notations in terms of numerals as follows:

- (1) To connote twice : Inclusion of the symbol, '  ' on top of the number or a repetition of the symbol concerned.
- (2) Thrice : Inclusion of the symbol, '  ' on top or repetition of the symbol concerned.

(3) Four times : Sandwiching the number with four very small vertical rod forms on either side thus '  ', likewise five times and so on, by using more such rods.

(4) Horizontal cross strokes to the vertical rods (e.g. '  ') to indicate multiplication, but mere addition of strokes to the vertical rods indicates the adding up. [e.g. '  ' = 11 (10+1); '  ' = 12 (10+2) etc.].

(5) Fusing or conjoining the desired notations to denote multiplied product:

e.g. '  ' = 3000, '  ' = 30,000

'  ' = 20,000, '  ' = 4 x 4 = 16

(6) Placing a notation inside another notation without any fusing to obtain the additive, e.g.

'  ' = 20 + 10 = 30

(7) Generation of derivatives by adding strokes.

(8) Addition of the values of each sign on a seal gives the total number presented.

DISCUSSION:

Subbarayappa tried to look at the various signs and symbols of the Indus seals from a different angle and assumed them as numerals only. He considered each and every stroke whether short or long as the notation for addition or multiplication ignoring the possibility of being the accenting signs for the phonetics of the signs.

But from a careful analysis of some of the numerical values assigned to the Indus signs by him (Fig. 4 & 5) it becomes clear that such an arbitrary assumption leads us in a wrong direction. As for example, the given numerical value of the sign, '𑀓' is 64 whereas the same value was calculated for another symbol, '𑀓))|||𑀓𑀓', assuming the value of the sign. '𑀓' as 20, '𑀓' = 41, '|||' = 3. '))' as 10 + 10 and '𑀓' as 40. Now the point to be noted here is that if the value of the sign, '|||𑀓𑀓' is evaluated to be 64 then there is no reason to consider another symbol equivalent to 64, leading to contradictory result.

Another drawback of his approach is that he assigned a value of 10 to all the following signs, '𑀓', '𑀓', '𑀓', '𑀓', '𑀓', '𑀓', '𑀓'. But it is inconceivable that the same value is carried by several different signs. Such an important point has not been clarified by him. In fact, each of these signs should be given different values.

Basic numerical forms on the Indus seals		
Basic forms	Numerical values	
<u>Countable rods</u>	<u>forms</u>	
		1 to 12
□ or ◊ or X		4
		5
^		6
↑ or ↗ or ↖ or 7		7
∩ or ∪ or ∩ or ∪		8
Ψ or ψ		9
∞ or ∞ or ∞		10
U or O		20
Λ or H		100
⋈		1000

FIG. 4

Illustration of the Numerical values derived by Subbaroyappa		
Symbols	Numerical value	Total
	64 + 40 + 15	119
	(4 x 2) + 5 + 9	22
	10 + 11 + (4 x 4) + 40	77
	20 + 4 + 3 + 10 + 10 + 40	124

FIG. 5

He gave the value of 1000 to the sign, '𑀓' in comparison with the Chinese sign, '𠃑' and the Brāhmi numeral, '𑀓'. He presumed that the Chinese sign '𠃑' is somewhat similar to the Indus sign, '𑀓' being simplified further in the Brāhmi Script representing a value of 1000. But all these three signs are not alike so the assumption does not stand to reason.

Another drawback in his assumption that even pictures of 'Scorpion', 'pipal leaf', 'man' and 'fish' indicate numbers, as if the Indus language had no words at all and was only a language of numbers. If all the signs stand for numerals or quantities what objects were quantified is not known. For example ten measures of grain or bundles of cloths or five numbers of copper ingots or ten minas of other metal, at least names of objects quantified must be mentioned.

Lastly even in Brāhmi Script the numbers 20 etc., are represented by alphabetic signs which had a sound value. Hence in comparing Indus signs with Brāhmi signs for numerals he should give the alphabet for which the sign stood in Indus Script. Ultimately it will lead to the inevitable conclusion that a large number of Indus signs had phonetic value.

EVALUATION OF AN APPROACH OF SUBHASH KAK

Subhash Kak made a statistical analysis of various signs of Indus Script and determined the frequencies of the most commonly used Indus signs⁽³⁵⁾. He carried out frequency distribution analysis in comparison with the frequency of different sounds of the Sanskrit alphabet and also with those of Brāhmi Script. He considered that some of the signs of the Brāhmi Script are morphologically related to those of Indus Script. In his view each consonant of Brāhmi Script was assumed to have a sign in Indus Script and the vowels were represented by ligatures on the consonants. He compared the decreasing frequency of the most commonly used Indus signs with those of Brāhmi Script and Sanskrit consonants and indicated that the most likely 10 consonants of Indus Script are in the following order of decreasing frequency:

t, r, v, n, m, y, s, d, p, k

Thus he arrived at the conclusion that the frequency of each one of these consonants is greater than 1.99% and the next most frequent sounds are ś and s with frequencies of 1.57 and 1.45 respectively. He emphasized that there are ample similarities between the Brāhmi Script and the Indus Script and regarded that the Brāhmi letters are derived from the Indus signs and the language is Indo-Aryan.

With this view in mind he tried to evaluate different

signs of the Indus Script following the methodology adopted by Hunter⁽⁷⁾, Parpola⁽²⁹⁾ and Mitchiner⁽¹⁹⁾. He presumed that the language of Indus people was Indo-Aryan rather than Dravidian as suggested by Mahadevan⁽³¹⁾ and many other scholars. Although he had gone a step ahead of Hunter & Mitchiner he could not throw any light in regard to the identification of the basic signs of the Indus Script and their phonetization without which the decipherment will remain incomplete and methodology unconvincing.

There are a number of discrepancies present in his methodology of assigning the values to each of the Indus signs. From a careful examination of the signs (Fig. 6), it is clear that he has compared some of the Brāhmi signs e.g. 'λ', '⊥' and 'b' with the Indus signs, '∧', '⊥' and 'w' which do not correspond with Brāhmi signs. He would have been justified if he had compared the sign, 'λ' of Brāhmi script with a slightly similar sign, 'K' already present in the Indus script.

Secondly, he has assigned some value to the Indus sign, '□' as 'v' in comparison with the sign, '□' which is not correct, for, the sign for 'va' in Brāhmi is 'o'. Thirdly, the comparison between the pair of signs, 'δ' and 'ϑ', 'cb' and 'ψ' are not justified at all owing to the fact that they do not seem to be similar and the values assigned to them are not acceptable.

The ten most frequent Consonants in frequency										
Sanskrit consonants	t	r	v	n	m	y	s	d	p	k
(decreasing frequency)										
Brāhmi	𑀓	𑀣	𑀕	𑀡	𑀭	𑀮	𑀜	𑀛	𑀚	𑀘
Indus	𑀓	𑀣	𑀕	𑀡	𑀭	𑀮	𑀜	𑀛	𑀚	𑀘

FIG. 6

Apart from these points of discrepancies, he has wrongly assigned a value to the Indus sign, '𑀩' as 's' in comparison with that of a sign, '𑀭' of Brāhmi Script. Perhaps he has followed Lal⁽⁴¹⁾ and Mitchiner⁽¹⁹⁾ who considered '𑀩' as a jar 'sata' in Rg. Veda and from 'Sata' he derived 'sa'. The objection is that no such 'handled jar' is ever found in any Harappan site. If however he took it as indicative of genitive case since it is a suffix then, also difficulty arises where it is followed by 'E'.

Another point of drawback is the evaluation of the Indus sign, '𑀪' in comparison with the sign, '𑀫' of the Brāhmi Script. Both of them are quite different from each other and there is already a sign, '𑀫' in the Indus Script. So the value assigned to both of these signs cannot be same.

In regard to the Harappan language Subhash Kak partly followed Rao's methodology⁽²⁴⁾ by accepting the basic signs arrived at by Rao and addition of strokes as vocalic indicators. Though as many as 12 basic consonantal signs of Brāhmi bear close resemblance to those of the Late Harappan Script⁽⁷⁾ Rao did not derive the phonetic value of Indus signs from a few corresponding Brāhmi signs because there is a large time gap between the Indus and Brāhmi Scripts. Secondly Brāhmi seems to have dropped some Indus and added some for retroflexes which did not exist in Indus. Lastly the presence of 3 laryngeal signs in Indus cannot be explained with reference to Brāhmi. However, in view of an inscription of the Late Harappan- Brāhmi phase of writing from Bet Dwarkā

Rao thinks Brāhmi is largely based on Indus alphabetic system which has been modified by the forms to a some extent. Subhash Kak also tried to compare 10 consonant Indus signs with Brāhmi signs. But he has assigned different phonetic values to those signs. Lastly instead of assuming the Indus language to be Sanskrit he should have derived the language on the basis of the phonetic value of Brāhmi signs strictly recombining Indus signs.

EVALUATION OF AN APPROACH OF ASKO PARPOLA

Finish scholar, Asko Parpola and his associates held the view that the Indus Civilization was pre and non-Aryan⁽²⁹⁾. They have carried out a positional study of the symbols of the Indus seals and elucidated that some of these namely, '𑀓𑀭' and '𑀓' tend to occur at the end (Fig. 7) to represent respectively the genitive and dative case-suffixes. But they did not explain the purpose of different signs inscribed on pots, bronze, axes etc.

It is quite likely that the inscriptions on the Indus seals, pottery etc. bear names of persons, may be along with their attributes such as profession etc. Some of the seals were actually used for sealing packages as is evident from the discovery of number of seals and sealings from the Lothal⁽³⁸⁾.

Parpola and others tried to emphasize that most of the Indus inscriptions have a genitive ending. They have given a value of a genitive suffix to the U like symbol representing a ship as 'ota' in the Dravidian language. Applying the principle of homophony they said that the symbol represent a similar sound namely, 'otu - otu', the modern comitative suffix. This would have been a reasonable proposition had there been a good case for identifying the 'U' like symbols with a ship in Indus seals, which is not the case.

But some of the old Tamil and Prakrit inscriptions on

the pottery found at Arikamedu near Pondicherry represent the names of the individuals concerned and have a nominative ending and not the genitive one. In fact, it is only the Prakrit inscription which has a genitive ending, the reading being 'ya, kha, mi, ta, sa' i.e. of 'ya', 'kha', 'mi', 'ta', (Sanskrit Yaksamitra).

In support of their hypothesis Asko Parpola compared 'Sumerian parallel' (Fig. 8) to a so-called 'Indian parallel' (Fig. 9) which occurs on a pot found at Harappa but does not belong to the Indus Civilization, on the contrary to the succeeding Cemetery H Culture. However, there is time lag between the two cultures and the Cemetery H symbol has very little in common with a ship.

Parpola regarded the symbol '𐀀' and '𐀁' as representing the masculine and feminine genders respectively on the basis of some resemblance found in the Dravidian language. In Dravidian the word for comb namely, 'Pentike' is not much different in sound (Principle of homophony) from pen the word for ,



As regards the numeral system of the Indus language Parpola et al affirmed that it possesses the same octonary system as used in Dravidian, although a change is being noticed at the number 8 (Fig. 10). In fact, besides 8, 9, and 10 shown in the table itself, other numbers including 12 also occur. Thus the idea of octonary system has become

meaningless.

An overall assessment of Parpola's hypothesis about the Indus language, states that it did not contribute much in regard to decipherment.

CONCLUSION:

The position as obtaining now thus shows that all the claims of decipherment are invalid.

However, the work done by various scholars has to an extent helped in understanding the nature of the script and its mechanics.

Some Harappan Symbols

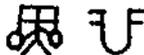
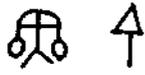
	Singular	Plural
Nominative	Zero	
Genitive		
Dative		

FIG. 7

Sumerian Symbols

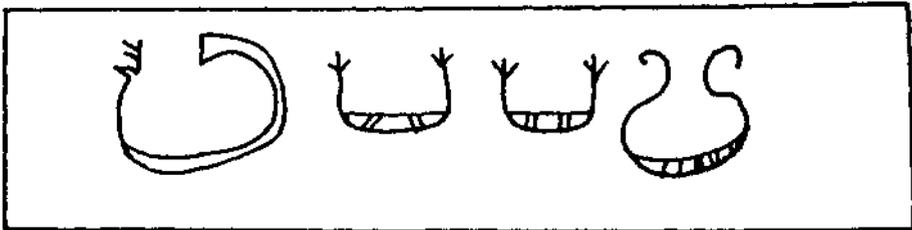


FIG. 8

Painted symbol on an earthen pot from cemetery 'H'

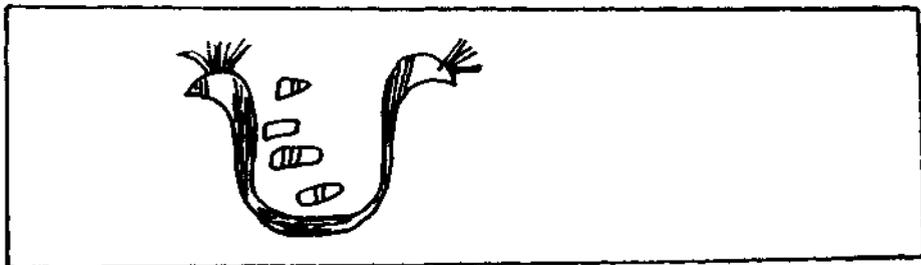


FIG. 9

Chart showing numerals

Numeral	Signs in one row	Sign in two rows	Numeral	Signs in one row	Signs in two rows
1			6		
2		 numeral	7		
3		 numeral	8		
4		 numeral	9		
5		 	10		

FIG. 10

REFERENCES

1. Marshall, J. (1931) Mohenjo-daro and the Indus Civilization, London . vol. I, II & III.
2. Hrozny, B. (1943) Ancient History of Western Asia, India and Crete, Prague. pp, 193.
3. Waddel, L.A. (1925) The Indo-Sumerian Seals deciphered, Pub. London. pp, 29 - 30.
4. (a) Nath, P. (1931) The Script on the Indus Valley Seals, Indian Historical Quarterly, vol. viii, supplement, pp, 1-52 .
(b) Nath, P. (1931) The script of the Indus Valley, J.R.A.S., London. pp, 671 - 674.
5. Diringier David- (1965) 'Writing', London, pp, 115-116.
6. Dikshit, K.N. (1939) - 'Prehistoric civilization of the Indus Valley. Sir William Meyer Lecture, 1935, University of Madras.
7. Hunter, G.R. (1934) The Script of Harappa and Mohenjo-daro and its connection with other scripts, London. pp, 466 -503.
8. Meriggi, P. (1934) Zur Indus Script Zeitschrift der Deutschen Morgenlandischen, Gesellschaft, Leipzig, xii.
9. Langdon, S. (1931) Mohenjo-daro and Indus Civilization vol- II, pp, 423 (ed. John Marshall)
10. (a) Swami Sankarananda A: (1943-44) The Rg. Vedic culture of the pre-historic Indus. Calcutta. pp, 66-67.

- (b) Swami Sankarananda (1964) The decipherment of 1600 seal impressions of Mohenjo-daro and Harappa, Proceedings of the International Congress of Orientalists, Poona vol. xvi. part - xiii, pp, 156.
11. Smith Sydney (1931) Mohenjo-daro and Indus Civilization'(ed) John Marshall. London. vol II p, 466.
 12. Petrie, W.F. (1932) Mohenjo-daro-Ancient Egypt. pp, 33 - 40.
 13. Gadd, C.J. (1932) Seals of ancient Indian style found at Ur. Proceedings of the British Academy, xviii. London, pp, 191 - 210.
 14. Hevesy, G. de (1933) Sur Une Ecreture Oceanique Paraissant d'origin ne'olithique, Bulletin de la Socie'te Prehistorique francaise, Paris, xxx. pp, 434 - 449.
 15. Barua, B.M. (1946) Indus Script and Tantric Code. Indo-Iranica, vol. I. Calcutta. pp, 15 - 21.
 16. Dani, A.H. (1963) Indian Palaeography, Oxford. pp, 12 - 20.
 17. (a) Ray, S.K. (1963) Indus script. An Appeal to the Orientalist, Indian Institute of Egyptology, Memorandum, no. I. New Delhi. pp, 1 - 16.
 (b) Ray, S.K. (1965) Indus Script. Indian Institute of Etymology, Memorendum, no. 2. New Delhi, pp, 9.
 18. Krishna Rao, M.V.N. (1969) Krishna Rao's solution, The Hindustan Times, Weekly Review, March 30.
 19. Mitchiner, John, E. (1978) Studies in the Indus Valley

- Inscriptions, Oxford and IBH Publishing. New Delhi. pp, x + 86.
20. Wilson, J.V.K. (1974) Indo-Sumerian : A new Approach to the problem of Indus Script. Oxford Clarendon Press.
 21. Chakraborty, B.B. (1976) The message of Indus Script. Indian Publications, Calcutta. pp, 122 + 16 plates.
 22. Hazra, Sankar (1978) Harappan Lipi: Dhvani Sangjojaner Parikalpana' (written in bengali), In: Vigyan Sanskriti no. I & 2, pp, 8-15.
 23. Sankaran, Gomathi, K. (1990) Indus / Harappan Script. (Unpublished).
 24. Rao, S.R. (1982) The Decipherment of the Indus Script, Asia Publishing House, Bombay. pp, 21 - 22.
 25. Newberry, John. (1980) The Indus Script of Mohenjo-daro Shamans - Canada, pp, 3-12.
 26. Richter, Egbert (1991) The fifth Veda- Manuscript - West Germany, pp, 5-15 (Unpublished).
 27. Mathur, P.N. (1992), Decipherment of Indus Script and Indian traditional history, In: New trends in Indian art and archaeology S. R. Rao's 70th birthday felicitation volume. New Delhi. pp, 103-121.
 28. Jain Ramesh & Trivedi, C.B. (1989) Harappan, A Metropolitan Script, The research paper presented at the annual conference of I.A.S. Guntur. (unpublished)
 29. (a) Parpola, Asko (1970) The Indus Script Decipherment - The Solution at the end of 1969. Journal of Tamil Studies vol.II. pp, 89 - 109.

- (b) Parpola, Asko (1970) Progress in the Decipherment of the Indus Script, Scandinivian Institute of Asian Studies, Newsletter 3, Jan. pp, 6 -8.
30. Knorozev, Yu et al. (1969) Soviet studies on Harappan Script. (Translated by Pande, H.C., Florida) pp. 9-10.
31. (a) Mahadevan, I. (1970) Dravidian Parallels in Proto-Indian script. Journal of Tamil Studies, vol. II, no. I. pp, 157 - 276.
- (b) Mahadevan, I. (1980) Recent advances in the study of the Indus Script, Puratattva, 9, pp, 34-42.
- (c) Mahadevan, I. and Mythili, Ranga Rao (1986) The Indus Script and Related subjects: A Bibliography of recent Studies (1960-86), Tamil Civilization, vol. 4, no. 3-4, pp, 15-30, and 214-237.
32. Vacek, J. (1970) The problem of the Indus Script, Archiv Orientalin vol. xxxviii, no.2. 33.
33. (a) Heras, H. (1942) Were the Mohenjo-darians Aryans or Dravidians ? Journal of Indian History, vol. xxi, pp, 23-33.
- (b) Heras, H. (1953) Studies in Proto-Indo-Mediterranean Culture, Bombay. pp, 159 - 248.
34. Subbarayappa, B.V. (1987) Indus Script: The Womb of Numbers, Quarterly Journal of the Mythic Society, vol, L xxviii, No. 1 & 2, pp, 23 - 27; 126 - 163.
35. Kak, Subhash, C. (1987) The Study of the Indus Script : General considerations Cryptologia, vol. xi, no. 3. pp, 182 - 191.

36. (a) Verma, N. K. (1992) Indus Valley Script decoded. The Times of India, 6 July.
- (b) Verma, N. K. (1992) Decipherment of Indus inscriptions - A contribution of tribal, India. Paper presented at the Historical congress, Patna, (unpublished).
- (c) Madhivanan, R. (1993) Indus Script Dravidian. The Times of India, Bombay, March 2, 1993.
37. (a) Fairservis, W. A. (1968) The roots of ancient India, The Archaeology of Early Indian Civilization, London. pp, 144 - 281.
- (b) Fairservis, W.A. Jr. (1977) Excavations at Allahdino III: The Graffiti, A model in the Decipherment of the Harappan script, papers of the Allahdino expedition, New York. pp, 1 - 136.
- (c) (1992) The Harappan Civilization and its writing. (Oxford & IBH). pp, 10 - 90.
38. Rao, S.R. (1973) Lothal and Indus Civilization, Bombay. pp, 79 - 109.
39. Mac Alpin (1974) Toward Proto-Elamo-Dravidian language, 50, 1, pp, 89-101
40. Rao, S. R. (1991) Dawn and Devolution of the Indus Civilization.pp, 200-201.
41. Lal, B.B. (1966) The direction of writing in the Harappan Script. Antiquity 40 (157): 52-55.
42. (a) Ventris, M. (1958) The decipherment of Linear B. Cambridge.

(b) Gelb, I. J.; (1952) A study of writing. Riv. ed.
1969. The University of Chicago press. pp, 95-97.