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Commentary on the less common signs of the Indus Valley corpus

Ioannis Kenanidis[1*], Evangelos Papakitsos[2]
[1] Primary Education Directorate of Kavala, Greek Ministry of Education, Religious Affairs and Sport, PED of Kavala, Greece
[2] University of the Witwatersrand, School of Physics, Johannesburg, South Africa

Abstract
The present work is part of a series of articles that claim to decipher the Indus (Valley) script, based on the linguistic theory of monogenesis and the pictographic affinity between the Indus and the Minoan scripts; the former (linguistic theory) argues in favour of a single ProtoHuman language that all other languages originate from, while the latter (pictographic affinity) is dictated by the fact that almost every Indus syllabogram has an obviously cognate sign in a Minoan script while the arrangement of signs is quite similar between the aforementioned scripts. Subsequently the study was conducted by observing and reasoning on the relative position and frequency of each sign.This series of studies proposes the Altaic origins of the Indus script and the conveyed language, demonstrating meaningful interpretations matching the deciphering of the Indus inscriptions' signs. Accordingly, the 80% of the existing volume of signs in the Indus corpus have been previously commented on and assigned phonetic values, while the present paper focuses on the remaining 20%, which are the less common signs of the Indus corpus.

Keywords: Altaic, minoan scripts, cypro-minoan, mesopotamia, indus valley script, sumerians, protohuman language

Introduction

The Indus Valley Civilization is attested in the major area of the Indus River Valley, covering a period from 3300 BCE to 1300 BCE [1]. This period is conventionally divided into three phases: The Early one from 3300 BCE to 2800 BCE [2], the Mature one from 2800 BCE to 1900 BCE [3] and the Late one from 1900 BCE to 1300 BCE [4]. The substantial part of the Indus (Valley) corpus comes only from the Mature Phase, consisting of inscriptions mainly on seals and on bronze tablets to a lesser extent [5].

It has been argued that "… the Indus script was an original creation of the people who spoke that language and not a script borrowed from some other people speaking a different language, on account of its orderly appearance and because of the faithful application of the rebus principle, which means that each sign represents the name of the thing it depicts in the language of the people who created the script" [6].

The main sources of the Indus corpus are the invaluable early work of pandit Mahadevan [7] and the available corpus with photographs by Parpola *et al*. [8-10]. Subsequently, many attempts have been made to decipher the Indus script [11] or to discover other connections/relations. Indicatively, some similarity between the Indus script and other scripts for writing Dravidian languages (e.g., Tamil) has been investigated [12], as well as the potential relationships among Bronze Age scripts between India and Greece [13].

As it is recounted in the next section herein, the present study has demonstrated that the Indus script rendered an Altaic language, accordingly giving meaningful interpretations to the Indus script inscriptions.

Methodology and Results

The research methodology herein is based on Systems Science that aims at collecting and analysing evidence from all available resources (e.g., see [15-16]), in a holistic manner. Especially considering the linguistic evidence, the practices of Comparative Linguistics have been extensively applied, particularly based on the linguistic theory of monogenesis, which proposes a single ProtoHuman language that all other languages originate from [17].

In this respect, the cultural proximity of the Indus Civilization to the Sumerian one has been noted [5]. Additional cultural evidence connected the Indus Civilization to an Altaic nation, while the pictographic similarity of the Indus script's signs to those of the Minoan (Cretan and Cypriot) Protolinear [18] and Sumerian (Mesopotamian) scripts has been exhibited [19]. Subsequently, the Indus script has been recognised as a syllabary of 67 main signs (syllabograms) that render the phonetic values of four (4) vowels and 16 consonants of the Indus language, combined in 67 syllables of the consonant-vowel (CV) or single vowel (V) type [20]. It is demonstrated that the conveyed language is a z-Altaic one (Eastern group), related to Sumerian that is an r-Altaic one (Western group) [21]. This proposal provides meaningful interpretations of several Indus inscriptions [6].

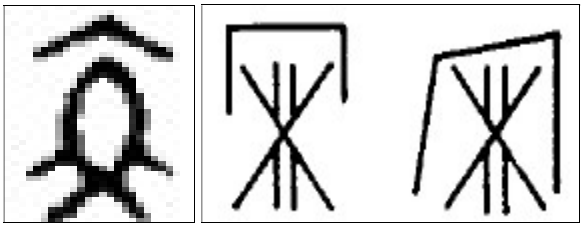
The 67 main signs of the Indus script comprise 80% of the Indus corpus. The rest 20% forms the extended signary (variants, signs with diacritics, ligatures and logograms) [20], a representative sample of which is discussed in the next section here.

Discussion

Syllabic scripts typically include some logographic elements, i.e., signs which represent whole words or sketches of objects, which is exactly the case of Cretan Protolinear, as attested in the documents of Linear B and Linear A, whereby the scribes could freely add improvised sketches to indicate commodities or units of measurement in accounting documents. In the Indus script, as the extant texts are not of a logistic nature, sketches of commodities were not needed; still, there are some sketches which represent men of certain occupations, like priests, soldiers, merchants, servants etc.; those are to be read as words describing professions and especially the well-known Hindu

castes, as parts of names - since practically all surviving Indus written documents record only personal names.

However, the 20% of the corpus in question consists mostly of ligatures and signs with diacritics. The most common diacritic, being the shape of a "circumflex" or a "tablecloth" over other signs, is itself a sign visualizing the idea of "rising, top", its phonetic value coming from a word "on" or similar, related to the Turkic verb ön- "to rise". Relatively many signs of the Indus script carry some kinds of diacritics (see the Figures below [22]); that is amazing for such an ancient script, because no other script in antiquity used diacritics. The mentioned diacritic, a "cover" like a circumflex or a tablecloth (Fig. 1a), is often found on the <fish> sign, which, in Minoan scripts, had the phonetic value "cuo" or "cwo" ("c" used for emphatic palatal unaspirated), and we have concluded that it was used for "gə" in Indus.

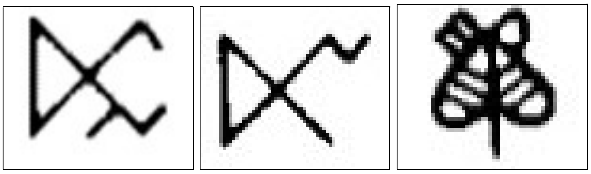


a b

Fig 1: The "cover" diacritic on signs

The same diacritic could take the form of a "tablecloth" on certain signs (Fig. 1b); we have found that its function was to indicate a nasal sound after the syllable, much like the Japanese ん in hiragana or ン in katakana.

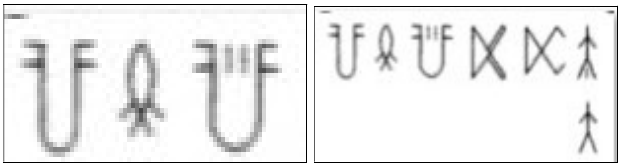
Other things that look like diacritics are in fact ligatured elements: a small stroke added, like under the <crab> sign (Fig. 2a), but also in a different position, as in Fig. 2b. This has been explained, at a mature stage of our research, as the <one> sign used by itself for the syllable "sa", in ligatures indicating that the syllable ends in "-s". Sometimes a sign is filled with little parallel lines (Fig. 2c), as if the scribe tried to represent colour in the object depicted. There is a similar device in Sumero-Akkadian Cuneiform, where a sign modified with additional wedges is called "gunû" or "gunification".



a b c

Fig 2: Stroke and lines added on signs

Another common ligature is that with the <two> sign, e.g., in the "Mahayogi seal" we can see that the <cow> sign is once plain and then with two little strokes in it (Fig. 3a), as if the cow is wearing a Hindu "tilaka". The <two> sign, used by itself for the syllable "ma", in ligatures means that the syllable ends in "-m". Analogous is the function of all other ligatures. Generally, it may be observed that when a sign is repeated within one word, the scribe tries to differentiate one from the other, e.g., in the "Mahayogi seal" the two <crab> signs next to each other are differentiated (Fig. 3b).



a b

Fig 3: Differentiating a sign.

Differentiating a sign appearing twice in one word seems to be a rule (which may have exceptions); the reason for differentiating a sign in an inscription is, in our opinion, to show that the syllable represented is different in terms of vowel length or stress.

Another kind of diacritic is the (single or double) "quotation marks" that seem to wrap around some signs (Fig. 4a). Sometimes, the "quotation marks" wrap around a couple of signs (Fig. 4b), so as to indicate that the two signs must be read together, as the "quotation marks" isolate the couple from the rest of signs.

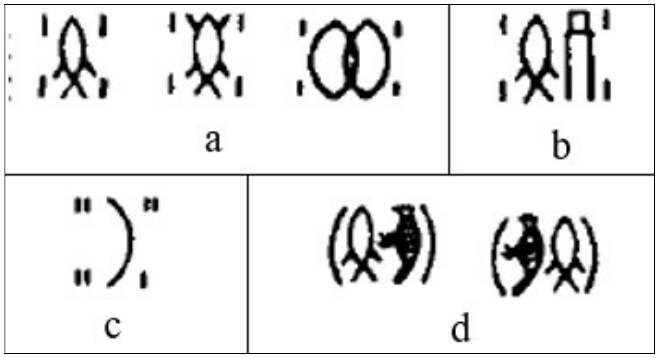


Fig 4: The "quotation marks".

Consequently, when a single sign is wrapped around in quotation marks, the scribe means that the sign is to be read "isolated" or "standing out" of the rest. The phonetic use of this may be guessed, e.g., if the sign is "wo" and the previous sign is "ko", isolating the "wo" would mean that the two are not to be combined into "kwo". When two signs are both enclosed in quotation marks or "brackets", this is a type of ligature, meaning that the two signs are to be combined in one syllable, e.g., Fig. 4b has gə+wa, meaning that the two are combined into "gwa". When the quotation marks or brackets enclose one sign only, it means that the sign is to be read as the whole name of the thing it represents; for example, the sign in Fig. 4c represents the <moon>, used for the syllable "nə", because "moon" was "nə(s)" in the Indus language; enclosed in the "quotation marks" it is to be read as "nəs" (and not "nə" as normally). Sometimes, instead of the "quotation marks" we find brackets Fig. 4d. The function of the brackets is the same as that of the "quotation marks". In the example given (Fig. 4d), we have ro+gə, so they have to be read in one syllable as "rog" (or "gər", which is unlikely, as syllables ending in -r are rare in the Indus language, where -r is typically turned to -s; this is another indication that the Indus language was a z-Altaic language, in contrast to Sumerian which was an r-Altaic language).

The brackets can be like modern brackets "(x)" or in the same direction: ")x)" or "(x(" or even straight: "|x|".

Quite often we see a sign enclosed in an ellipse (oval shape) as in Fig. 5; we have found that the oval or circular sign is

the same as the Sumerian sign meaning a large square number, which, for Sumerians, was 60x60=3600 named "šar"; for Altaic/Turkic nations, the large square number was 10x10=100, but the word was the same: "šar" for Sumerians, "جُور (čūr)" in Volga Bulgar, "şĕr" in Chuvash, and "yüz" in common Turkic. In Indus, the word was *"šə(s)" (meaning "a hundred"), so the round or oval sign alone was used phonetically for the syllable "šə". Much more often than used on its own, the sign is used in ligatures, usually enclosing another sign as in the example given. Its obvious function in ligatures was to show that the syllable ended in -š, e.g., in the example of Fig. 5 we have mi+šə ("mi" enclosed by "šə"), so the syllable was "miš".

Fig 5: A sign enclosed in an ellipse.

Now, given that the most common ligatures in the Indus scripts are with the <one> sign, indicating syllable ending in -s, and with the <hundred> sign, indicating syllable ending in -š, while syllables ending in -r or -l are absent or very rare, it is obvious that the Indus language was a z-Altaic language, having -s where r-Altaic would have -r, and having -š where r-Altaic would have -l. Apart from the above there are various other ligatures, like the one in Fig. 6, <horn>+<vulva> = "o"+"ta", to indicate the syllable "ot"; this is an example to explain in more detail our method of decipherment: at the beginning of this study, we guessed that these two signs were to be read "sə"+"tə", using the phonetic values of these same signs in the Minoan script (especially the <horn> sign is identical in the Minoan scripts, there used for "se"; <vulva> is used for "tə" in Minoan); but after scrutinizing the available corpus of inscriptions, we have concluded that they are "o"+"ta" in Indus; the Indus <horn> sign could not be "sə" or "si" because it is almost always used in the beginning of words, this means it is a vowel-only sign; as "a" and "i" were discovered previously, the <horn> had to be "o"; in some cases after "ma", we can easily read "maw"; a name "o-tə" is apparently the same as Sumerian "Utu", the Sun god. As for <vulva>, if it were "tə", then "ta" would be too rare in Indus; some scribes used a <bag/quiver> instead of <vulva> (obviously for taboo reasons), which was also "ta", the word for "container/bag" being "ta(g)", found in Turkic as "tağar" and in Sumerian as "tug". In short, starting from the similarities between Indus and Minoan, and then thoroughly examining the relative position and frequency of each sign, we arrived at the complete decipherment, that is the pictorial origin and the phonetic value of each syllabogram. Exactly because the Indus language had only 4 vowels (in contrast to 8 or 6 vowel qualities in Sumerian and Turkic), it was useful to have some (although infrequent) syllables ending in consonants, resulting to consonant clusters, and not infrequent diphthongs too, so as to differentiate words, also it was often necessary to indicate subtle things in writing, such as vowel length and stress.

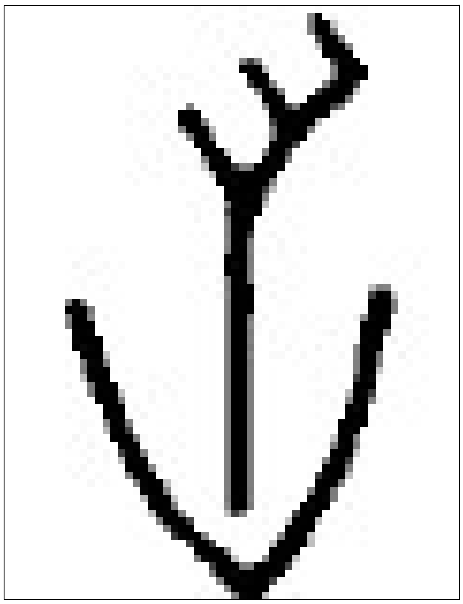


Fig 6: Another ligature ("o+ta").

The "Mahayogi" seal (should be better named "Prajāpati Seal") is one of the first Indus script documents that we investigated. The text includes the <cow> sign, once plain and once with <two> in it (Fig. 3); as explained above, ligatures with <two> ("ma") mean that the syllable ends in -m. The cow sign alone standing for "a", ligatured with <two> ("ma") is "am". The syllable after "am" reasonably starts with a labial consonant, so we estimated that the <crab> sign after "am" could be "ba", so the two <crab> signs would be "baba". After that, there is the logogram for father (Fig. 7), that is a sketch of a man with exaggerated penis; "baba" (pronounced also "papa") is understood as "father" since ancient times in a real many languages of the world, so the <father> logogram confirms the reading "baba", "ba" for each <crab>. At the beginning of this study, we considered that the <fish> sign is "go", because "cuo" ("c" standing for palatal emphatic plosive) is the phonetic value of <fish> in Cretan Protolinear ("ko" in the less conservative Cypriot syllabary). After thorough study, we now know the <fish> to be "gə" in Indus, but this does not change the argument. The phonetic value "ba" of <crab> can easily be justified by an ancient Altaic word "ba(g)", found in Turkic as -bağa, used in the names of small, usually shelled creatures like "frog" and "turtle". So, the whole text on this seal is "a gə am ba ba <father>", read as: "Agwam babā", the Father (of all living creatures). One of the "ba" must have been with long "a", indicated by slightly differentiating the shape of the two <crab> signs.

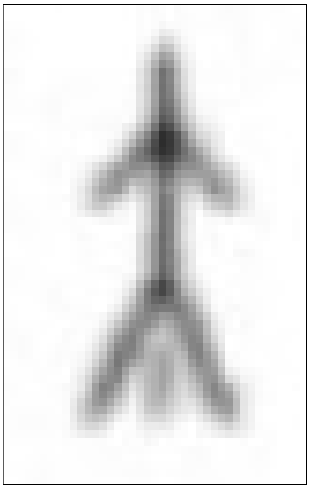


Fig 7: The logogram for father.

There is another <man> sketch in the seal, but that is not to be read as a syllabogram or as a word: simply, a human being is among the creatures which surround the "Prajāpati" (Fig. 8), which should be called Prajāpati and not Paśupati, because he is the lord of all living beings, including humans and not only animals. The word "Father" here is obviously used in a religious sense, just as Zeus was called "Zeus patēr" in Greek, and similarly in Latin, hence "Jupiter", or as Prajāpati is called "Pitāmaha" (literally "grand-father", paternal grandfather in the human scale). This name in the seal is a divine name, but remember that all Hindu people have names of divinities. This seal, together with another that will be presented below, has been a sound start to unravel the Indus script.

Fig 8: The "Prajāpati".

The divine name Agwa(m) has been found on many seals, spelt in various ways, as in Mahadevan [7], page 78, numbered 21 (Fig. 9) = "<man> of 'a gə wa'": that "wa" is written with the <house> sign, quite similar to the <house> sign in Minoan, where it also stands for "wa". Also, the root ag- has been found on a real many seals, spelt "a gə/go/gi"; it is, in our opinion, the root found in Turkic as ağ-, Japanese age-, Filipino akyat, all these meaning "to ascend / climb / rise"; so, Agwa(m) meant "the high(est) One". "Aga" is a well known name of Sumerian kings, and "aga" means a "tiara / crown" in Sumerian where we also find the names of deities "^{d}aga-kug-ga" and "^{d}aga-us$_{2}$"; besides, the well known Turkic title "ağa" (nobleman; important person; highly estimated man) has no real reason to be considered a loanword from another language.

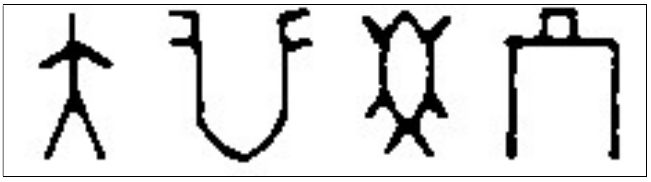


Fig 9: The <man> of "a gə wa".

Of course, every sign could have many variants, according to the scribe's handwriting or according to how elegant he wanted to make the inscription, and variants are generally easy to be recognised even today: for example, in Fig. 10 we see a more detailed sketch of the wheel sign, reduplicated as the simpler form could be. The variants are indeed useful in affirming what the sign depicted. When we see different variants in the same position within a word, we understand that they are variants of the same sign and not different signs; while two really different signs in an otherwise same word are usually signs with the same consonant (but different vowels).

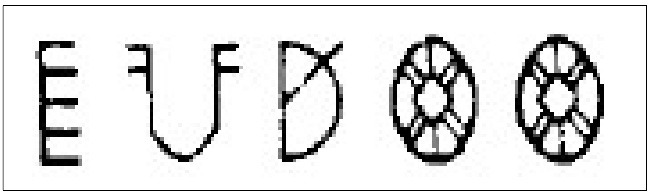


Fig 10: Inscription with "wheel" signs.

Considering all signs with diacritics, ligatures, variants, and some added logograms, the number of Indus script pure syllabograms was not larger than 67, which is a most typical number of signs for a syllabary. The whole structure of the script indicates the structure of the language it was devised for. It was a language where the vast majority of syllables were of the CV type; we have explained how we estimated that the language had 16 consonants and 4 vowel qualities (which could be short or long). Also, the language had lots of monosyllabic nouns, so that the name of a noun could serve as the phonetic value of the sign depicting that noun. This description agrees well with the general characteristics of Altaic languages, especially Sumerian [21] and old Japanese (we may assure that Japanese is an Altaic language of the eastern group, i.e., z-Altaic). The small number of vowels (4 vowels) is not typically Turkic, still we must remember that the ancient Turkic language had only 6 vowels (themselves resulting from the ProtoHuman vocalism of only 3 vowels), and simplification of vocalism in an Altaic language is well attested in Japanese, which had the typical 8-vowel system in the Yamato era, but within a few centuries it was reduced to the 5 vowel system used today, which is close to Indus vocalism: Japanese "e" is rather rare, occurring mostly in words of Chinese or European origin, in some suffixes and at the end of some words; Japanese "u" is close to Indus "ə" (/ɯ/) and note that long vowels in modern Japanese only exist in foreign origin words (especially from Chinese and English), while on the other hand all vowels of the Indus language could be either long or short, which makes 8 vowels, with possible diphthongs too and some possible consonant clusters, which

are absent in Japanese. So, the Indus language could produce a really large number of syllables, which easily compensated for the simplification of vocalism.

Another case of striking simplification of vocalism is Greek: as classical Greek diphthongs turned to monophthongs (single vowels), and long vowels had a different quality than the corresponding short ones, Hellenistic Greek had at least 14 single vowels, but modern Greek has reduced them to only 5, without distinction between short and long ones. A most important Greek writer, Gen. Makriyannis, never distinguished between "o" and "u" and rather ambiguously distinguished between "e" and "i" in writing; he even used no word-stress marks; still there is no difficulty in reading his works.

Conclusion

The present study commented on the extended signs of the Indus syllabary that comprise 20% of the Indus corpus. They are variants, signs with diacritics, ligatures and logograms that accompany the main repertoire of the 67 plain syllabograms which rendered the z-Altaic language conveyed by the Indus script. The present work complements the discussion about the syllabograms' nature and etymology [20] which forms the central part of the linguistic proposal on the decipherment of the Indus script.

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References

1. Wright RP. The Ancient Indus: Urbanism, Economy, and Society. Cambridge: Cambridge University Press, 2009.
2. Possehl GL. The Early Harappan Phase. Bulletin of the Deccan College Research Institute,2000:60/61:227–241.
3. Shaffer JG, Lichtenstein DA. Ethnicity and Change in the Indus Valley Cultural Tradition. Old Problems and New Perspectives in the Archaeology of South Asia. Wisconsin Archaeological Reports,1989:2:117–126.
4. Robbins-Schug G, Blevins KE, Cox B, Gray K, Mushrif-Tripathy V. Infection, Disease, and Biosocial Process at the End of the Indus Civilization. PLOS ONE,2013:8(12):e84814. DOI: 10.1371/journal.pone.0084814
5. Kenanidis I, Papakitsos EC. General Notes on the Prehistoric Populations and Civilizations of the Indian Peninsula. ISRG Journal of Humanities and Cultural Studies,2025:2(3):1-9.
6. Kenanidis I, Papakitsos E. The observable relationship between the Minoan and Indus scripts. International Journal of Humanities and Social Science Research,2025:11(4):19-27. (www.socialsciencejournal.in).
7. Mahadevan I. The Indus Script: Text, Concordance and Tables. New Delhi: Archaeological Survey of India, 1977.
8. Joshi JP, Parpola A. Corpus of Indus seals and inscriptions: MEMOIRS OF THE archaeological survey of India, no. 86. Corpus of Indus Seals and Inscriptions. 1. Collections in India. Helsinki: Suomalainen Tiedeakatemia, 1987.
9. Shah SGM, Parpola A. Corpus of Indus Seals and Inscriptions. Collections in Pakistan. In Annales Academiae Scientiarum Fennicae; Series B; Suomalainen Tiedeakatemia: Helsinki, Finland,1991:2. Volume 240.
10. Parpola A, Pande BM, Koskikallio P. Corpus of Indus Seals and Inscriptions. New Material, Untraced Objects, and Collections Outside India and Pakistan; Suomalainen Tiedeakatemia: Helsinki, Finland, 2010.
11. Parpola, A. Deciphering the Indus Script; Cambridge University Press: Cambridge, UK, 2009, 3.
12. Barla SS, Alamuru SSS, Revesz PZ. Feature Analysis of Indus Valley and Dravidian Language Scripts with Similarity Matrices. In the CSE Conference and Workshop Papers, Department of Computer Science and Engineering, University of Nebraska – Lincoln, International Database Engineered Applications Symposium (IDEAS'22), August 22–24, 2022, Budapest, Hungary. ACM, New York, NY, USA. doi:10.1145/3548785.3548801
13. Daggumati S, Revesz PZ. Convolutional Neural Networks Analysis Reveals Three Possible Sources of Bronze Age Writings between Greece and India. Information,2023:14:227. https://doi.org/10.3390/info14040227
14. Papakitsos EC. An Application of Systems Science in Humanities: Investigating the Origins of the Minoan Civilization. Sumerianz Journal of Social Science,2019:2(4):33-44.
15. Papakitsos EC. Inquiring into the Origin of the Minoan Civilization via Information Systems Modelling in Humanities. GPH - International Journal of Social Science & Humanities Research,2020:3(5):40-58.
16. Papakitsos EC. Inquiring into the Origin of the Minoan Civilization via Information Systems Modelling in Humanities. GPH - International Journal of Social Science & Humanities Research,2020:3(5):40-58.
17. Papakitsos EC, Kenanidis IK. Going to the Root: Paving the Way to Reconstruct the Language of Homo-Sapiens. International Linguistics Research,2018:1(2):1-16.
18. Papakitsos EC. Standardizing the Cretan Protolinear Syllabary. Migration & Diffusion, 2019, 1-11.
19. Kenanidis I, Papakitsos E. Examining the nature of Indus script signs and the rendered language. International Journal of Social Science and Humanities,2025:7(4):13-20 (www.humanitiesjournals.com).
20. Kenanidis I, Papakitsos E. An Estimate of the Indus Valley Language Phonology. Journal of Research in Humanities and Social Science,2025:13(8):171-194. (www.questjournals.org, https://doi.org/10.35629/9467-1308171194).
21. Kenanidis I, Papakitsos EC. Yet another suggestion about the origins of the Sumerian language. International Journal of Linguistics,2013:5(5):30-44.
22. Parpola A. Sign list of the Indus Script [Internet], 2017. Available from: https://web.archive.org/web/20201101112146/http://mohenjodaroonline.net/index.php/indus-script/corpus-by-asko-parpola.