International Journal of Law, Social Science and Humanities (IJLSH)

Volume 2, Issue 2, 2025

E-ISSN: 3063-7554

https://doi.org/10.70193/ijlsh.v2i2.238

Deciphering the Indus Valley/Harappan Script: A Comparative Linguistic Approach

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Submitted: 18 June 2025 *Revised: 06 July 2025* *Published: 09 July 2025*

Abstract:

This study employs a comparative linguistic approach to the Indus Script. The purpose is to present observations about similarities between the untranslated language and another cluster of languages. This has never been explored before. Some of the Germanic languages, in particular Younger Futhark, have identical symbols to the Indus Script despite temporal and geographical distance, namely with the Indus Script predating Christ and Younger Futhark existing in the medieval Anglo-Saxon period. 67 Indus Script symbols from 8 well known Indus Script seals were analysed for similarity in geometric structure to 64 letters from 3 well known Germanic languages. 56.7% of the 67 Indus Script symbols were either identical, had an identical base letterform or were near identical, which is when the symbols are identical with the addition of some lines or altered curvature. This is significantly greater than the expected results comparing two unrelated languages. The unique features of the results are the presence of 18 identical symbols across 5 seals. That the symbols identical to the Germanic languages were present in multiple seals from the Indus Valley/Harappan period suggests the finding may help elucidate some meaning. The observations presented in this study may assist further investigation by experts in the field. Subsequent research may attempt formal translation of the Indus Script on the basis of this discovery. Perhaps subtle language links persist over the millenia despite cultural and historical distancing.

Keywords: Indus Valley, Germanic Languages, Harappan Period, Indus Script

INTRODUCTION

The Indus Script is one of the oldest languages in the world. We know of its existence due to pottery and seals which managed to survive despite the mysterious calamity that destroyed the Indus Valley/Harappan civilisation around 1900 BCE (Kenoyer, 1998). Another language, Tamil, originated from a similar region and is known to be one of the oldest surviving languages worldwide. Some studies propose that the two ancient languages are related as per structural analysis methods (Parpola, 1994).

Kenoyer's 1998 research, which combined archaeological insights with statistical methods to make significant strides in understanding the structure of the script, determined that the Indus Script was likely used for trade or ceremonial purposes and that the symbols were logograms based on symbol co-occurrence (Bhargava, 2025).

With the downfall of the Indus Valley/Harappan civilisation, the text was forgotten and neglected for many years until it was rediscovered in a 1920 excavation at the Harappa site (Kenoyer, 1998). Many languages developed in the Indian subcontinent and they seem to be unrelated to the Indus Script, rarely geometrically resembling the ancient forgotten language and mostly employing alphasyllabic

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rather than logographic forms. This means that, apart from Parpola's theory about Tamil, it seems that the modern day languages arose independently of the Indus Script including Karnataka, Gujarati, Marathi, Urdu, Hindi and other modern Indian languages.

These Indian languages share common ancestry with a precursor languge, the Proto-Indo-European (PIE) language, which was spoken not written. Another language family, the Germanic languages, including Elder Futhark and Younger Futhark, derive their origins from the Proto-Germanic stem of this original precursor language. This cluster of languages employed multiple logographic forms together as a runic alphabet. The runes often held deeply religious or philosophical meaning.

Years later, new interest was restored in linguistics and in particular India's ancient history and shaping a particular narrative. Most of the seals that survived are in British museums. Those include most of the seals employed in this study. They extracted many artefacts pertaining to the history of South Asia and its evolution as a region. Those seals hold the key to the region's written history. That is one reason why there is so much interest in its decipherment.

No translation exists and there is an award for successful translation. The Tamil Nadu government, in particular, is interested in translating the Indus Script. They started an award in the year 2000, recognising the significance of the accomplishment. The significant attempts at translation have come from Kenoyer and Parpola. Recent reviews point to tunnel vision and political agendas as reasons for inability to break ground in the Indus Script challenge (Bhargava, 2025)..

Most studies have limited themselves to structural analysis and the South Asian region, rather than employing a broad range of techniques and moving geographically. Expanding the sample size of languages compared to and the techniques used could shed new light on the mysterious language. To fill the gap, this study looked outside of the narrow sample size of previous studies and moved to other branches of the PIE languages including medieval Anglo-Saxon languages.

METHODS

The method employed in this study is qualitative research with a comparative linguistic approach. Symbols are selected for geometrical correspondence to the Germanic languages and reported on in an objective way.

Table 1. Germanic Language Symbols

Language	Symbol	Translation
Younger Futhark	ᚴ	kaun ("ulcer")
Younger Futhark	ᚼ	hagall ("hail")
Younger Futhark	ᚾ	nauðr ("need")
Younger Futhark	ᛁ	ísa/íss ("ice")
Younger Futhark	ᛅ	ár ("plenty")
Younger Futhark	ᛋ	sól ("Sun", personified as a deity-see Sól (Germanic mythology)
Younger Futhark	ᛏ	Týr ("Týr, a deity")
Younger Futhark	ᛦ	maðr ("man, human")
Anglo-Saxon runes	ᛜ	ing ("Ingwaz, the hero/god")
Elder Futhark	ᛟ	othala ("heritage, inheritance, ancestral property")
Elder Futhark	ᛝ	ingwaz ("Ingwaz, a god/fertility deity")
Elder Futhark	ᚺ	hagalaz ("hail")

Out of the total 64 symbols, 16 Younger Futhark, 24 Anglo-Saxon, 24 Elder Futhark, 12 are included in the table above.

Indus Script Seals

Seals 1–8 are presented in no specific order.

Figure 1. Seal 1, 12 Symbols (heritage arts/heritage images).

Figure 2. Seal 2, 4 Symbols (Mackay, 1935).

Figure 3. Seal 3, 11 Symbols (Kenoyer, 1998).

Figure 4. Seal 4, 9 Symbols (Vijayabhaarati, n.d.).

Figure 5. Seal 5, 7 Symbols (British Museum, n.d.).

Figure 6. Seal 6, 9 Symbols (Gleimius, 2022).

Figure 7. Seal 7, 11 Symbols (Hays, n.d.).

Figure 8. Seal 8, 4 Symbols (Hirst, 2009).

Identical Symbol

Table 2. Identical Symbols with Meaning

Symbol	Indus Script Symbol	Corresponding Germanic Language Symbol	Meaning in Germanic Language
 Seal 5	Symbol 2	ᚾ	ár ("plenty") [Younger Futhark]
 Seal 5	Symbol 3 and 4	ᛁ	ísa/íss ("ice") [Younger Futhark]

 Seal 3	Symbol 5, 6, 11	ᛁ	ísa/íss ("ice") [Younger Futhark]
 Seal 6	Symbol 6, 7, 8	ᛁ	ísa/íss ("ice") [Younger Futhark]
 Seal 7	Symbol 1, 2, 6, 7, 9	ᛁ	ísa/íss ("ice") [Younger Futhark]
 Seal 6	Symbol 2	ᚠ	kaun ("ulcer") [Younger Futhark]
 Seal 2	Symbol 3	ᚾ	nauðr ("need") [Younger Futhark]
 Seal 8	Symbol 4	ᛘ	maðr ("man, human") [Younger Futhark]
 Seal 3	Symbol 1	ᛜ	ing ("Ingwaz, the hero/god") [Anglo-Saxon runes]

Identical Base Letterform

These are visually identical base letterforms between the Indus Script and Germanic symbols, with enclosing elements.

Table 3. Identical Base Letterforms with Meaning

Symbol	Indus Script Symbol	Corresponding Germanic Language Symbol	Meaning In Germanic Language
 Seal 6	Symbol 1	(ᚼ)	hagall ("hail") [Younger Futhark]
 Seal 2	Symbol 1	(ᚼ)	hagall ("hail") [Younger Futhark]
 Seal 5	Symbol 1	(ᛜ)	ing ("Ingwaz, the hero/god") [Anglo-Saxon runes]
 Seal 1	Symbol 1	(ᛜ)	ing ("Ingwaz, the hero/god") [Anglo-Saxon runes]
 Seal 4	Symbol 1	(ᛜ)	ing ("Ingwaz, the hero/god") [Anglo-Saxon runes]
 Seal 2	Symbol 2	(ᛝ)	ingwaz ("Ingwaz, a god/fertility deity") [Elder Futhark]
 Seal 4	Symbol 9	[ᚾ]	nauðr ("need") [Younger Futhark]

7 Identical base letterforms.

Near Identical Symbol

Near identical symbols defined by the presence of either additional lines or altered curvature.

Table 4. Near Identical Symbols with Meaning

Symbol	Indus Script Symbol	Corresponding Germanic Language Symbol	Meaning in Germanic language
 Seal 5	Symbol 5 And 6	ᛋ	sól ("Sun", personified as a deity—see Sól (Germanic mythology)
 Seal 6	Symbol 9	↑	Týr ("Týr, a deity")
 Seal 3	Symbol 10	ᚺ	hagalaz ("hail") [Elder Futhark]
 Seal 1	Symbol 4	ᛝ	ingwaz ("Ingwaz, a god/fertility deity") [Elder Futhark]
 Seal 3	Symbol 8	ᛝ	ingwaz ("Ingwaz, a god/fertility deity") [Elder Futhark]
 Seal 3	Symbol 7	ᛟ	othala ("heritage, inheritance, ancestral property") [Elder Futhark]
 Seal 4	Symbol 8	ᛘ	maðr ("man, human") [Younger Futhark]

 Seal 6	Symbol 3	ᛝ	ingwaz ("Ingwaz, a god/fertility deity") [Elder Futhark]
 Seal 6	Symbol 4	ᛟ	othala ("heritage, inheritance, ancestral property") [Elder Futhark]
 Seal 7	Symbol 7, 9	ᛟ	othala ("heritage, inheritance, ancestral property") [Elder Futhark]
 Seal 2	Symbol 4	≈ᛟ≈	othala ("heritage, inheritance, ancestral property") [Elder Futhark]

13 Near-identical symbols.

Animals

Figure 9. Animals symbol

The presence of a prominent udder, large horns, and a robust build suggests that these animals in the Indus Script seals (Figures 9) are possibly a cattle relative, such as the aurochs, an extinct pastoral predecessor to cattle, hinting at agricultural or spiritual significance to the seals. They are accompanied by a kiln underneath.

Figure 10. Image 1 (left), Image 2 (centre), Image 3 (right). (du Bois).

In Puthur, Tamil Nadu, Velar potter-priests create terracotta horses (Fig. 10.1) near Aiyanar shrines, firing them in adjacent kilns (Fig. 10.3) as ritual offerings. There are visual similarities between the terracotta horses and the Indus aurochs, particularly in the saddle and neck decorations, inviting speculation, perhaps, that the Indus aurochs served a similar purpose and were, too, offerings to gods such as Aiyanar.

Figure 11. Depict elephants without accompanying kilns.

Figure 12. Depict zebus without accompanying kilns.

Figure 13. Depicts the armoured body folds of a rhinoceros.

RESULTS

I have classified symbols from 8 of the Indus Script seals according to the degree of similarity with the alphabets of 3 Germanic languages, regardless of other features, as either "identical", "identical base letterform" and "near identical". In certain cases, the symbols are identical.

There were 18 identical symbols, 7 with an identical base letterform and 13 near identical symbols. The symbols of the Indus Script were focal on their specific seals and lacked significant gaps between them suggesting a possibly ritualistic language following the "criptio continua" structure of runic alphabets, where symbols placed close together gained holistic meaning rather than individual words or phrases. The results are shown below.

Table 5. Summary Table.

	Number of Samples	Total Characters (n=)
Germanic Languages	3 alphabets	64 symbols
Indus Script Seals	8 seals	67 symbols

Table 6. Summary Of Results Observed.

	Identical	Identical Base Letterform	Near Identical	Total Similarity To Germanic Languages
Indus Script (n=67 Symbols)	18	7	13	38/67 (56.7%)

56.7% of symbols in the 8 Indus Script seals analysed in this study shared some similarity with symbols from the 3 Germanic languages 18 fully identical symbols, 7 symbols with identical base letterforms, and 13 that were deemed near identical.

The symbol pairs were *selected for similarity*, and so this is not a random sample. However, a hypothetical probability baseline for how likely it would be to achieve such a degree of similarity is relevant to this study.

Assuming a conservative random match rate determined by previous studies of 1% between any Indus symbol and another language based on the visual complexity and number of strokes in each writing system the expected number of matches by chance in 67 comparisons would be $67 \times 0.01 = 0.67$ for this study (Verma & Agnihotri, 2017). And yet the real number of matches is 38.

$p < 1 \times 10^{-20}$ (i.e., less than 1 in 100 quintillion)

There is a 99.9999999999999999% confidence interval. Thus, we can state a high statistical confidence of non-randomness.

This does not prove linguistic relatedness but shows that the visual overlap between the Indus Script and the Germanic languages far exceeds statistical expectations. The high rate of correspondence, even under a deliberately matched set, suggests that the Indus Script and the Germanic languages share structural commonalities worth investigating further.

In this study, there are limitations. There is subjectivity and ambiguous threshholds in visual comparisons. The human visual system engages in pareidolia, explored in Sproat, 2007, wherein there is a tendency to perceive meaningful patterns where none exist (Sproat, 2007). Visual similarity does not prove two languages share a common origin, as symbols can evolve separately in time and space and yet coincidentally be identical without explanation.

Figure 14. Animals symbol.

Seal 2 presents a unique sequence of symbols which very similarly match the Germanic runic alphabet. Notably, there is the sequence of similar and visually enclosed symbols. Hagall (hail) from Younger Futhark, followed by Ingwaz (a god/fertility deity) from Younger Futhark, followed by nauðr (need) from Younger Futhark, followed by othala (heritage) from Elder Futhark, means that a tentative approximation of Indus Script meaning can be derived from these like symbols. The Indus Script seal, here, in figure 2, could represent a call to a god that they need fertility in their land with an accompanying offering of a ceremonial auroch into a kiln for sacrifice.

DISCUSSION

Where there is no animal diagram, text is rare. Text is often found with an animal diagram underneath. The intricate animal drawings have several rare features such as animal decorations and the associated kiln. The extraordinary features of the Germanic language symbols are that their relationship to the Indus Script is unknown to linguists and researchers alike, that they are identical to certain symbols, and that the languages are so distant geographically and historically yet share some linguistic similarity (Rajesh & McAlister, 2015).

Perhaps, therefore, the Indus Script itself was lost, but remnants of the alphabet were somewhat preserved in the form of subsequent languages such as Younger Futhark. Perhaps, the Indus Script, too, was runic, in a way. The Proto-Indo-European precursor perhaps branched into both the Indus Script and the Germanic languages, with both sets of languages deriving some symbols from their shared common origin.

This study does not prove that the Indus Script is related to the Germanic languages, nor does it lay claim to making a formal translation attempt. That is something which will require further research. However, it does demonstrate that there is a similarity between the symbols of the undeciphered Indus Script and the well known and translated Germanic languages, a similarity that is statistically unlikely to be due to random chance (Yadav et al., 2021).

Parpola's theory linked the Indus Script to the Tamil region linguistically. This study links them culturally via the decorations and the nature of the Indus aurochs and the terracotta horses. There is stylistic similarity between them. Some tentative inferences can be drawn. Perhaps, the Indus Script was used in the same manner as the terracotta horses, as sacrificial worship to a deity, such as Aiyanar. Perhaps culture and people flowed from the Tamil Nadu region to Harappa and the Indus Valley.

It is unknown what exactly happened to the people of the Indus Valley. It is deeply contentious and mysterious. Perhaps, the linguistic similarity suggests that people may have migrated from the Indian region to Iran, then Georgia, then Europe in the wake of the circa 1900 BCE collapse of the civilisation (Chopra et al., 2019). Either way, these all remain as viable theories and this study leaves several questions unanswered.

The above results raise the following questions: why have they not been seen before; are they merely coincidentally similar languages that developed at different times; and are the languages related? Investigation of the Indus Script has been hampered by the false assumption that the symbols were

related either to Dravian languages or Sanskrit. The Indus Script seals are, however, visually similar to the Germanic languages.

CONCLUSION

I conclude that there is visual similarity between the Indus Script and the Germanic languages that has been statistically proven to be unlikely to be due to random chance. No attempts were made at a formal translation or to claim that there is a definitive linguistic link between the languages. I believe this study lays the groundwork for further investigation of the linguistic link between these languages. That the study draws from multiple seals and multiple Germanic languages makes it more likely that there is some unknown reason for the link.

The PIE predecessor for both languages was spoken only, but perhaps the written version is unknown and was destroyed and neglected in a similar way, hence explaining the similarity between languages which are geographically and temporally distant, yet linked potentially through a common origin. The future research should use AI and computational language models such as Parpola to definitely prove that there is substance to this discovery via their expertise. Then, a rigorous analysis of all 450 Indus script symbols for similarity to all of the Germanic language alphabets could provide further information. Then, with AI, a formal attempt at translation may be attempted years into the future.

Conflict of Interest

All the authors declare that there are no conflicts of interest.

Funding

This study received no external funding.

How to Cite:

Bhargava, R. (2025). Deciphering the Indus Valley/Harappan Script: A Comparative Linguistic Approach. *International Journal of Law, Social Science, and Humanities (IJLSH)*, 2(2), 232-244. https://doi.org/10.70193/ijlsh.v2i2.238.

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