

Macro structures in Indus script

Towns, countries and barter transactions

S.K.Venkatesan

The logo-syllabic Indus script has been deciphered using Dravidian Etymology Dictionary. Complete list of signs of the Mahadevan corpus deciphered are described in the [other document](#). A threshold point has been reached now that one is able to not only read all the lines of text but also understand them with clear-cut semantics. Apart from the decipherment we are also able to provide a picture of the production activities in Indus Valley as reflected in the text and graphics.

There seem to be some broad grouping of regions into town and countries, but it must be understood they are proto-cities, towns and counties, and not identical to modern states or cities as we see understand today.

The third-person thing sign-328 \cup

The sign-328 \cup is central to the decipherment of Indus script. It plays the role of the third-person “that” in English, as exemplified by the third person pronoun “u-an”. The sign-34 \cup is:

$$\begin{aligned}\cup &= \cup + | \\ u\bar{l} &= u + \text{mut-al} \\ \bar{\alpha}\cup &= \bar{\alpha} + \cup \\ ullava\bar{n} &= u\bar{l} + an\end{aligned}$$

The sign-342 \bar{U} is:

$$\begin{aligned}\bar{U} &= \cup + || \\ \bar{u}r &= u + iru\end{aligned}$$

This sign-342 \bar{U} is the most important sign in Indus script, with a syllabic value of “ $\bar{u}r$ ” and a semantic value of “town/village”.

The trade system is similar to a barter system of exchange, but as emphasized by Graeber [1], it is primarily as gift-economy, so the default is the **from-address** with the **mode-of-transport** and **to-address** being optional.

Most of the lines in Indus script could be understood using the Pāṇini-Backus-Naur Form:

((To-address)?(Mode-of-transport)?)*(From-address)

$\bar{U}\{\backslash, \dots\} \quad \{\uparrow\}\{\downarrow, \leftarrow, \rightarrow, \leftrightarrow\} \quad \bar{\underline{U}}\{\diamond, \oplus, \bowtie, \dots\}$

where $\bar{\underline{U}}$ is the short clitics version of \bar{U} .

Numbers are logo-syllables and never by themselves seems to indicate a quantity, but some adjectives like:

| - mutal (the first one or the chief)

॥ - iru (exist, vast, strong)

☰ - mū (mature)

☰☰ - nal (good)

☰☰☰ - ai (join as in “inai”)

However, if numbers occur to the left of sign-328 ઉ then they are semantically numbers that are used as quantifiers:

ઉ ॥ - irantu (two)

ઉ ☻ - mūnu (three)

ઉ ☻☰ - nālu (four)

Here the sign-328 ઉ is the equivalent of the abstract “thing” in English that transforms numeric-logo-syllables into the semantic quantifiers: the numbers. It should be noted that “ū/u” is proposed here as a premordial post-position marker of great significance in Dravidian languages.

Some important townships

This is just indicative of the various kinds of townships and professions, and a deeper quantitative study is required to obtain their relative importance. What is interesting is that the last one is farmer’s town, which doesn’t count really as a town, but in Dravidian languages, the term “ūr” seems to cover what we call “village” also.

M77 Sign	Glyph	Syllable	DED	Description	Tamil
342	ခ	ūr	752	town	ஊர்
347	ခၢ	velūr	-	hunter’s town	வேலார்
358	ခၢ	chevūr	-	bronze worker town	செவ்வுர்
351	ခၢၢ	vel-nūra-ūr	-	hunter-cloth worker town	வேல்நுழூர்
?	ခၢၢၢ	che-palla-ūr	-	bronze-elephant worker town	செவப்பஸ்லார்
355	ခၢၢၢ	vel-palla-ūr	-	hunter-elephant worker town	வேல்பஸ்லார்
361	ခၢၢၢၢ	che-ko-ūr	-	herder-bronze worker town	சங்கோவுர்
372	ခၢၢၢၢ	vel-tiral-nūra-ūr	-	hunter-jeweller-tailor town	வேல்திரல்நுழனார்
15	ခၢၢၢၢၢ	uṛavūr	688	working, farming town	உழூர்

Counties or regions

There seems to be another regional geographical category, nāṭu ḷ, which seem to be different from ūr ઉ. We just indicate a few here.

M77 Sign	Glyph	Syllable	Description	Tamil
267	ၷၷ	koṭa-nāṭu	Horned country	கொட— நாடு,

				கொம்பன் நாடு
293	ஃ	valaiyan-nāṭu	Trapper's country	வலை நாடு, வலையன் நாடு
76	ஃஃ	cē(val)-nāṭu	Bronze country	சே நாடு, செம்பு நாடு
162	ஃஃ	vēl-nāṭu	Hunter country	வேல் நாடு, வேடன் நாடு

Quoting from Krishnamurthy [2]:

"Proto-Davidians spoke of large territorial units called *nāṭu (>*nāṭu in South Dravidian II, 3638) for a province, district, kingdom, state [DEDR 3638], while *ūr [DEDR 752] was the common word for any habitation, village or town. A hamlet was known as *palli [DEDR 4018]"

We consider M77 sign-342, ஃ, as ūr and these are the different ūr:

M77 Signs	Glyph	Syllable	Description	Tamil
15	ஃ	uṛavūr	working, farming town	உழூர்
-347	ஃஃ	vēlūr	hunter's town	வேலூர்
-358	ஃஃ	chevūr	bronze worker town	செவ்லூர்
-351	ஃஃ	vēl-nūrañ-ūr	hunter-cloth worker town	வேல்நூழூர்
-?	ஃஃ	che-palla-ūr	bronze-elephant worker town	செவப்பலூர்
-355	ஃஃ	vēl-palla-ūr	hunter-elephant worker town	வேல்பலூர்
-361	ஃஃ	che-ko-ūr	herder-bronze worker town	செங்கோலூர்
-372	ஃஃ	vēl-anī-nūrañ-ūr	hunter-jeweller-tailor town	வேல் அணிநூழனூர்
-48	ஃ	nal-aran-ūr	well fortified town	நல்லரணூர்
-194	ஃஃ	mū.iru.mēl.por.ul-ūr	mature great highness town	முவிரு மேல்பொறு ரூர்
-62	ஃ(ஃ)	valai-kanni-ūr	shark town	வாளைகண்ணியூர்
-113	ஃ(ஃ)	vilai-nallam-ūr	fertile land town	விளைநல்லமூர்
-124	ஃ	ēr-ūr	plough town	ஏரூர்
-230	ஃஃ	mū.malai-ūr	three-mountain-town	மும்மலையூர்
-296	ஃ	vari-ūr	way-town	வழியூர்
-149	ஃ	nal-vari-ūr	cross-way town	நால்வழியூர்
-244	ஃஃ	aru-kot̄ai-ūr	godown-town	அறையூர்
-197	ஃ	mēl-ūr	up-town	மேலூர்

M77 Signs	Glyph	Syllable	Description	Tamil
-53	“”	talai-ūr	chief-town	தலையூர்

Please note that the short [clitics] form of ūr is the straight double quotes M77 sign-99, “”. This sign is used in the initial from-address form that occurs in the right-side (the signs are read from right-to-left). The flag is tilted towards the right, but the animals face the left, another indication the script must be read right-to-left.

The Indus union of five/seven countries



Of course these are preliminary findings. As one can notice from the leaves and branches depiction (of Indus polity), initially there were possibly five counties, which then break down to six, seven and probably more countries.

Indus field symbols

Animal						
Description	One-horned bull	Bull	Buffalo	Elephant	Tiger	Rhino
Country	Barter symbol	Oxen herders	Buffalo hearers	Elephant herders	Mountain archers	Horn
Syllable	kottūr	erutu	māṭu	pallār	mū-malai, perum-puli	mūk-kompu
Script*	“”	/	ሀ	⊗	❖, ❁,	❖

* - These are hypothetical proposals of a mapping: country => animals => scripts. Of course there are more like the markhor (mountain goat) and the dancing girl (probably related to sign එ [ancal] and to marriage signs) that remains to be mapped.

Other locations

M77	Glyph	Syllable	DEDR	Description	Tamil
176	ꝑ	añcal, anjīh	54, 56	resting place	அஞ்சல், அஞ்சி
254	ꝑ	patti	3848, 3850	place	பட்டி
245	ꝑ	taṭṭi	3036	place	தட்டி
137	ꝑ	cēri	2007	assembly	செரி
190	ꝑ	pālaiyam	4117	tribal hamlet	பாளையம்

Glyphs grouped under categories

A word of caution must be mentioned here that since the logos are primarily syllables, their actual use in a text may not always correlate to below category.

Description	M77 Signs	Glyphs	Tamil
Activity-based counties [1]	261, 391, 162, 245, 12, 326, 400, 311	❖, ⊕, }, ■, ❁, ❂, ✖, ▷	கோவன், பஸ்வன், வலையன், தட்டான், உழவன், இலையன், நுழம்பன், பானன்
Farming: farmer, farm town	12, 15, 178, 124	❖, ❁, A, /	உழவன், உழூர், கலப்பை, ஏர்
Horticulture: leaf, flower	326, 54	❖, ❂	செடி, பூ
Hunting: trapping, spear	35, 293, 162	❖, }, 〽	வலையன், வலையன், வேலன்
Cattle farming: herding and selling	30, 301	❖, {,	கோவன், இடையன்
Carpentry and metallurgy: metal and wood work	245	■	தட்டி (தட்டான்)
Tayloring: stitching	400, 219, 182	✖, ❁, ✎	நுழல், தை, அச்ச
Honey gathering	180	❖	கொட்டு தேன்
Singing: harp, musician	311, 31	〽, ✎	யாழ், பானன்
Trade: barter, buy/sell	51, 130	❖, √	மாறன், மாற்று, கொள்
Transportation: ship, boat, raft, manual cart, bullock cart	59, 65, 70, 72, 67, 155	❖, ✎, ❁, ✎, ✎, ✎, +	கன்னி, பெருங்கன்னி, கல், கொல், கொண்ட, அம்பி
Movement: material, goods, send, receive	153, 211	↑, ↑	பெரு, பொருள், அனுப்பு

Major countries depicted by animals in seals

This is another major category that is directly indicated by animals.

Plate III -55 [2]



Here we can see five major countries indicated branching from two tiger motifs and here with two of them further branching into two subcategories.

The seal on the right is either calling for (or celebrating) bartering between five countries:

୪ || ୧୦ (para-ar-ūr, பறையருர்)

calling for five nations to join in the barter system

ஏஏஏஏஏ

(cerukol, செருங்குதுகொள்)

The animals that seem to indicate the five nations [1] in the seals are:

Bull (ox) ♦, Buffalo □, Elephant ♢, Rhino ▲ and Tiger ▲, ♠.

Although all the skills and specialised skill centers (vanjih, வஞ்சி) are all distributed all over the towns and villages of all countries, in triple mountain tiger country (Afghanistan?) there seems to be preponderance of hunters, animal trappers and honey collectors.

The Indus barter exchange system

We only illustrate the key points here. The local barter happens in the undocumented unorganized sector at the cross-roads (X/X), in what is termed as “cantai” (சந்தை) in modern Tamil. The exchange is abstracted by the symbol X/X and the barter mediated by ♠ (maran), who is usually qualified by great reliable ancestry (flowery self-praise by the system). The exchange is done by symbol √ (kol, the dagger of exchange) and X (an abstraction of the cross-road). Most of the script pertains to official barter transactions of Indus, which are really instructions of transporation mode and the origin/destination. The clitics like √ (M77-99) orchestrate the sentence structure of the lines of the seals. An highly compressed form of information exchange mechanism is enabled by the drsastic use of poly-semantic logo-syllabic script with each of these logo-syllables having many semantic possibilities with high degree of pun. This is so deeply wedded to Indus culture and mode of exchange that the deciphering of it has taken so long. The skills of bronze-age artisans is in ful

display here with those hundreds of poly-semantic logo-syllables crafted and designed with care to work in those small spaces available in the seals. What is interesting that the deeply mysterious swastic symbol (M77-148) is now understood as the mundane:

ஈ = ஃ+ வ = marrukol = மாற்றிகொள்

ஈ = ஃ+ வ = cērukol = செர்ந்துகொள்

i.e., declaration of an important exchange, which is usually followed by drum beats 'ஓ'. The drum beats are also a way to invite more people to the square for exchange (at cross-roads).

Relative volume of trade

We consider the absolute occurrence numbers in the text and also the association to the right of sign no. 99 ஈ. If we assume that what precedes (to the right of) sign. 99 ஈ is the sender of goods (as part of a gift-economy [1]) then we get the following data:

Glyph	Description	No. occurrences	Forward transactions
ஓ	Cattle	369	290
ஃ	Agriculture	225	18
ஃ	Ivory	182	82
ஃ	Carpentry, Bronze work	134	6
ஃ	Honey	44	18
ஃ	Cross-road	41	8
ஃ	Elephant herding?	15	10
ஃ	Tailoring	14	4

Among 634 occurrences in IVC text with sign no. 99, assuming that what comes to its right is the region that is sending commodities to the other regions, we can summarize that cattle and agriculture were the dominant activities, closely followed by carpentry and elephant-based products. Hunting, honey-gathering, fishing, carpentry, weaving and stitching were the other important activities that created products participating in the organized barter system of IVC. Hunting, honey-gathering, fishing, carpentry, metallurgy, weaving and stitching were the other important activities that created products participating in the organized barter system of IVC.

Class structure of IVC

It seems from the table above that the cattle herders had the dominant trade surplus and probably the agriculturists had the highest trade deficit. Sign-41 கி॒றான (DED 1621) கீழான் refers to a poor

person and studying his concordance we see that he is strongly associated with sign-137 க் céri (DED 207) செஷ்டி, a place where many people assemble, associated in modern terms with the hut dwelvments or slums in cities. It is quite surprising that this association has remained true for 5000 years! It is also noted that sign-41 க் (kīrān) has atleast one association with all professions, except cattle herding (sign-267 வ்). So it is clear that there is a class structure associated with IVC which puts cattle-herders (வ்) at the top.

Praise heaped on the farmer

The barter system's accumualtion of wealth by the ruling elite (sign-30 வ் “kovan”), accumulated in store-houses (sign-267 வ் “koṭṭa”) necessitates a rhetoric of praise on the toiling farmer (sign-12 வ் “vūravan”) like:

M77 signs	Glyphs	Syllable	Tamil	Description
12-75	க் ம்	peru.mu.kanni-vūravan	பெரும்முக்கன்னி உழவன்	Enormously mature and soft farmer
12-2-86	க் க்	mutal-kāvalan-vūravan	முதன்மை காவலன் உழவன்	First guardian farmer
12-325-86	க் பு	mutal-ilai-vūravan	முன்னிலை உழவன்	The foremost farmer

Such eulogy of farmer and farming has continued even 2000 years after IVC culture in [Thirukkural](#):
Kural 1031: Howe'er they roam, the world must follow still the plougher's team;
Kural 1032: The ploughers are the linch-pin of the world; they bear.

Frequency of adjectives of towns

Adjectives of towns	Syllable	Frequency	ஃ* Frequency	ஃ* Frequency	Description	Tamil
ஃ	nilam	225	47	18	land	நிலம்
ஃ	vel	196	40	8	lance	வேல்
ஃ	nal-aran	168	114	0	dood morals	நல் அறன்
ஃ	valaiyan	130	14	54	trapper	வலையன்
ஃ	vel	117	112	0	hunter's town	வேலூர்
ஃ	velan	104	93	0	hunter	வேலன்
ஃ	arai	87	34	0	godown	அறை
ஃ	nal-vari	87	44	1	cross-road	நால்வழி
)	valai	80	37	7	net	வலை
)	vari	35	32	0	road	வழி
ஃ	ce	32	32	0	bronze town	செம்பூர்
ஃ	peru-vari	35	23	0	big road	பெருவழியூர்
ஃ	puli	25	21	0	tiger country	புலி
ஃ	tatti	134	70	6	smithy/carpenter	தட்டி

ஏ	er	78	16	0	plough	ஏர்
ஓ	iru-valai	51	28	0	strong net	இருவலை
ஓ	tai	129	40	9	tailor	தை
ஓ	ilai	32	18	0	horticulturist	இலை
(ஓ)	vaalai-kanni	13	12	0	fishing	கண்ணி வலை
ஓஓ	nalnellal	61	14	8	good farmer	நல்நெல்லாள்
(ஓஓ)	vilai-nallam	17	15	0	fertile rich land	விளை நல்லம்
ஓ	mel	56	14	2	uptown	மேல்
ஓஓ	mu.iru.mel.per.ul	56	27	1	mighty uptown	முவிருமேல் பொருள்

Other adjectives (praise) and their frequencies

Adjective	Syllable	Frequency	Description	Tamil
ஏ	nal-aran	168	good moral	நல் அறண்
ஓஓ	mu.iru.mel.per.ul	56	mature-truthful-all-mighty	முவிருமேல்பொருள்
	mutal	143	chief, foremost,	முதலாம், முதலவன்
ஓ	mū	300	mature	மு-
ஓ	alaku	47	beauty, unperturbed	அழகு, அலங்கா
ஓ	nilai	130	firm, stable	நிலை
ஓ	iru-nilai	38	very firm, stable	இருநிலை

Postpositions and their frequencies

This is the equivalent of prepositions in English, but in Tamil they are post-positions and not pre-positions.

M77 sign	Glyph	Frequency	Syllable	Description	Tamil
336	ஃ	229	utan	with, together, agreement	உடன்
99/100	ஃ	663	-ar	it's	-ஆர்
123	ஃ	189	-ar	it's	-ஆர்
97/98	ஃ	174	-il	-in	-இன்

Broad observations about the text

One of the surprising observation in this decipherment is that almost no individual identities like personal names are found in the text. All trade transactions are from one collective identity like country, village/town to another country, village/town. Individuals are extolled within the collective

identity of farmers, workers, etc. There are however, strong leadership role identitites like chief “mutalvan”, “peru(m)-kanni”, “mu-velan”, “iru-velan” etc. It seems that there are store houses where the items are sent and dispersed through some social mechanism of distribution. It seems that the distribution process could be related to sign-37 വ “vilampu” and sign-28, വി “vilampan” seems more like the supervisor of distribution of goods. Probably the sign-176 അ “anjih” is a place each of the specialized workers like Tailors, Bead makers, Carpenters, Bronze workers, Ivory workers, each having a separate location for each specialization where others can reach them as targets for exchange. This tradition continues in towns in India even now.

M77 signs	Glyphs	Syllable	Tamil	Description
176-342-48	ഏ ഉ അ	nal.aran-ു-anjih	நல்லறணார் வஞ்சி	good moral town rest-house
176-309-379	ഏ ദ ഒ	pammu-vilampu-anjih	பம்மு விலம்பு வஞ்சி	bow-stringer rest-house
176-309-245-245	ഏ ദ ക ക	tatti-tatti-valiampu-anjih	தட்டி தட்டி விலம்பு வஞ்சி	Smithey-house
176-342-347-258	ഏ ഉ പ മ	cilai-velur-ു-anjih	சிலை வேலூர் ஊர் வஞ்சி	Carpentry-house

References

- [1] Graeber, D., (2013), *Debt: The First 5,000 Years*, Melville House Publishing
- [2] Krishnamurti, B., (2003) *The Dravidian languages*. Cambridge, UK: Cambridge University Press.
- [3] M.V. பாஸ்கார், அன்றைய தலைப்பு செய்திகள் (Yesterday's headlines), சிந்துவெளி நாகரீக சிறப்பு வெளியீடு (Indus Valley Civilization Special Issue), கிருஷ்ணகிரி மாவட்ட வரலாற்று ஆய்வு மையம் (Krishnagiri District History Research Center), சாசனம் (Sasanam), 2025.
- [4] MASI 77 Indus Script Texts Concordances & Tables Iravatham Mahadevan, <https://indusscript.in/>