

Indus script orthography

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The logo-syllabic syllabary of Indus will be described here as it is preceived here in use. We try to discern if there are broad rules of orthography in this writing system that we can observe. We will start with some simple number systems and see how they can prefix or suffix to other symbols/syllables in the system.

To begin with we use a simple rule that there is one and only one syllable to which each of these signs get assigned to. This is a simple rule to follow and it can be easily be discerned if it breaks. We will now describe the other patterns or rules that we observe.

Let us now consider the M77 sign-373 ○ to which we assign the syllable “pa”. For the sign-86 |, we assume that it has the value “mutal” and then see how it applies to the sign-375 ①. We believe that this value is indicated by the sign-376 ② that has a tooth attached to it. So we have:

pa + mut-al = pal

Now let us consider the sign-391 ③, a sign that we know has strong correlations with elephant seals from MVB [4] findings, so we assign the value “palla” that also has close proximity to “pal”, but we can see there are three cross-lines and/or six small pieces, making it more like “pillir”. There is also another possibility that this is decided by DED 1045 ④, a metal badge that is applied to the forehead of the elephant. So we observe that although broad rules are applied, there are also *ideosyncracies* of local culture that also provide a few interesting twists and turns, but in general it tries to confirm to some broad outlines.

We will now move to the interesting sign-287), which we have assigned the value “valai” after looking at it’s close cousins sign-298)))) and sign-290 which has five strokes affixed to it’s top-right.

)))) = vala + |||| = vala + ai = valai

Semantically vala is “right”, “curved” as the symbol right parenthesis and when combined with “5” it becomes valai.

We also observed for M77 sign-62 ⑤ that we can assign value “vālai” (scabbard fish that has sharp teeth). The sign-295 ⑥ “iru-valai” sounds similar to “ēri-vālai”. These signs also indicate that such deformation of the base syllable is possible, i.e., “valai” ≈ “vālai” and “ēri” ≈ “iru”. Of course, high homophony is one of the crucial principles in creating a script with minimal number of signs.

Next, we look at sign-81 ⑦ that we assign the value “valai-puri”, while we assign sign-63 ⑧ the value “kanni-pori” (DED 1183, 4538). This then decides “kanni” for fish-sign and “puri” ≈ “pori” for bird (quail) sign.

Based on these successes we decide to take a look on the other variants of fish-sign. For sign-70 ⑨ we apply “kāl” (DED 1483 assigns the semantic value of “cart”) and for sign-72 ⑩ “kōl” (DED

2238 assigns a semantic value of “raft/float”). One might ask why not assign the values the other way around, but the important clue comes from the cross-line that looks more like paddle/oar. Yes, again there are some *ideosyncracies* that comes with it.

We now move to sign-328 \cup for which we assign the value “ū/u/va”. So for the sign-332:

$$\text{𑀓} = \cup + \text{𑀓𑀓𑀓} = \text{va} + \text{ai} = \text{vai}$$

Similarly we also get for sign-342:

$$\text{𑀔} = \cup + \text{𑀓} = \text{ū} + \text{iru} = \text{ūr}$$

Now we get on to double affix, sign-336 $\cup\cup$:

$$\cup\cup = \cup + \text{𑀓} + \text{𑀓} = \text{u} + \text{mu-ta-l} + \text{𑀓} = \text{uṭaṇ} \text{ (DED 945)}$$

Unlike the case of “ūr” we have for example sign-347 $\cup\cup$ that takes the value “veḷ-ūr”, so the base comes after it in some cases reversing the order that we assigned for sign-332.

Although the picture speaks thousand words there are also hints of syllables through micro-typography in Indus script. Consider sign-402:

$$\text{𑀕} = \text{𑀓} + \text{𑀓} = \text{na} + \text{ṭu} = \text{naṭu}$$

$$\text{𑀕𑀓} = \text{𑀕} + \text{𑀓} = \text{nāl} + \text{naṭu} = \text{nāṭu}$$

and now let us consider another sign-51:

$$\text{𑀕𑀓𑀓} = \text{𑀕} + \text{𑀓} + \text{𑀓} = \text{ma} + \text{iru} + \text{an} = \text{māran}$$

with an additional twist as “māran” twists and looks back (a feature observed by Mahadevan and passed-on through personal communications by MVB).

Of course, we can also say as additional double-emphasis things like:

mu-kula-iru-vaṛi-māran

(triple generation true path Maran)

Now on to another topic:

169	𑀕	nilam
171	𑀕𑀓	nilai
174	𑀕𑀓𑀓	iru-nēla
88	𑀕𑀓𑀓𑀓	nal-iru

These are characters that seems to stand-out (pun intended with “nīl” being DED 3675 “to stand”), i.e., decided more by the context of IVC barter transactions and not by any complex orthography rules.

So as a broad outline we can say that the signs in IVC script are strongly associated with unique syllables and that the IVC writing system allows plenty of ways to mutate them in many ways from their base ideographic glyph values. However, it is not clear that in the case when there are multiple affixes applied, then which comes first, i.e., whether a base glyph applies first etc. In general one

could assume it flows from right-to-left and top-to-bottom, but I suppose there are many exceptions that are decided by the context.

For example the famous sign-116 '''' can take the value “nellai/nallai” but the other-way around can also be “ayaḷ” is quite unlikely in the IVC transaction context. Sign-112 '''' works as “munṇāl” but in the semantics of IVC transactions “ñālam” works better. Of course, both are possible and even within the context of IVC “munṇāl” might be a better choice in some particular case.

The non-affixed pure IVC signs have unique syllables associated with them, which have either single consonant and two consonants at the most. The combining rules usually seem to drop the middle consonants, and of course the vowels are modified as pertinent to the situation.

As an interesting remark I would like to bring to attention a nice little sign-310 𐤁𐤁 with a probable value of “vilaviḷa” (DED 5424) that sounds similar to “vavvāl” (long-tailed fruit bat?) as used in this line of text:

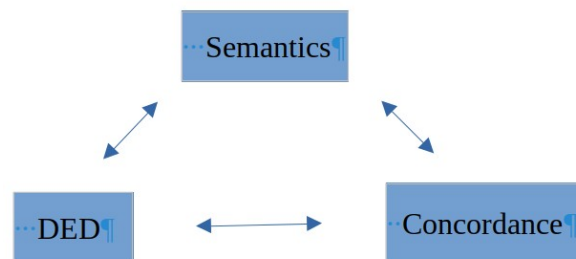
𐤁𐤁 𐤀𐤁 𐤁𐤁 𐤁𐤁 𐤁𐤁

Trembling with fear “vilaviḷa” cognates well with “eerie bat”, so we try to decipher this line.

Vilamban trembling with fear “loading” (māṭṭu, 𐤀𐤁) the bow, but what’s to the right of vilamban, a tiger? Tiger trembling or the hunter trembling? So we notice that it could be:

ciruttai = cīpu + iru-tai = 𐤁𐤁 + 𐤀𐤁 (right-to-left) = 𐤁𐤁

This describes the process of discovery through an example. As a broader generalization we could insist for Dravidian decipherment that the following triangle commute (i.e., more like walking on three legs or squash on three walls):



We illustrate this with a line of text:

𐤁𐤁 𐤁𐤁 𐤁𐤁 𐤁𐤁

valan.ai-iru.valai-varvan.ur-anjih

To fit it into the context we need to modify this to:

valamai-iru.vilai-varavan.ur-anjih

வளமை இருவிளை உழவனார் வஞ்சி

Semantics:

Fertile highly productive farmer’s town paddy

or

Fertile double-crop farmer's town paddy

We now show how consonants and vowels express themselves in this system, but since it is not an alphabetic system, they don't carry any special importance by themselves as there are many more syllables with single and double consonants that are used to complete the language.

Consonants and their signs

Consonant	M77 sign	Glyph	Roman	Tamil
ka (க)	59	𑌕	kaṇṇi	கண்ணி
ce (சே)	76	𑌔	cēval	சேவல்
ta (த)	216	𑌖	taṇṭi	தண்டி
pa (ப)	373	𑌘	pakal	பகல்
pu (பு)	78	𑌙	pūr	பூர்
pū (பூ)	54	𑌚	pū	பூ
ma (ம)	242	𑌛	māṭi, māṭu	மாடி, மாடு
mē (மே)	197	𑌜	mēl	மேல்
mū (மூ)	89	𑌝	mū	மூ, மூணு
na (ன)	374	𑌞	na	ன
nā (நா)	95	𑌟	nāl	நால்
r (ர)	87	𑌠	raṇṭu	ரண்டு
va (வ)	328	𑌡	va	வ
ra (ர)	400	𑌢	ra	ரு
ru (ரு)	110	𑌣	ru	ரு

Although vowels and glides can be arbitrarily mutated, modified or introduced in to the system while combining with the base syllable, the vowels are very much required at the beginning of a word. We list a few here.

Vowels and their signs

Vowel	M77 sign	Glyph	Roman	Tamil
an (அ)	1	𑌤	an	-அன்
āṭu (ஆ)	50	𑌥	āṭu	ஆத்து, ஆடு
ila (இ)	323	𑌦	ila	இல
ūr (ஊ)	342	𑌧	ūr	ஊர்
eṛu (ஏ)	110	𑌨	eṛu	ஏழு