

Indus-Dravidian Philology

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This article establishes a close connection between Dravidian languages and the Indus script, as deciphered by the author [1]. It then further hypothesizes that the agglutinative proto-Dravidian language (Tamil or Tamir, with retroflex “r”) was the creative structural output of the Indus Valley Civilization (IVC) production system, which unified a vast area from Afghanistan to Gujarat. It has been argued from the existence of several languages now in those regions that in the past also there must have been many more languages in use in the IVC and that a single language could not have been in use in those regions. To counter such an argument, one can say with confidence that many such languages of India after colonial rule have been replaced by “English” as a bridge language in India, Africa and the West Indies. Before the British rule, during the Moghul rule, Hindustani was used as the bridge language. Even before that Sanskritization and its broad influence over Indian languages is well observed. So in essence if a broad overwhelming production system takes over an ancient society, the language of the newly emerging class becomes the language of the region, atleast initially in major production activity such as trade and other transactions. In the case of IVC such a language, the Dravidian language, seems to have emerged into existence with its mild but persuasive class society.

It has been estimated independently using Dravidian etymology [2,3] that the proto-Dravidian language emerged roughly around 2500 BCE, coinciding roughly with the mature period of the IVC. In this work, by the decipherment of the Indus script and the broad connections that it establishes, we show the formation of the root-word structure of the proto-Dravidian language. Before establishing such deep connections, through the use frequency statistics we show some broad correlations.

Consonant frequency finger print of Indus script and Dravidian

The frequency of occurrence of letters of alphabets of languages is a good starting point for creating a finger print of languages, like the most frequent letters arranged in rank order in the Wikipedia text of different languages [4]. Too broad statistical study of languages do not have the distinguishing power to differentiate languages, instead they show the universality of the human larynx and its capacity. Everett [5] showed that there is a global similarity in frequency of occurrence of consonants in the intralinguistic corpora. There are a few consonants that are unique to some languages and are good at identifying those languages. However, in general the frequency finger print do not tell us much about the structure and morphology of the language, especially how they were historically constructed from their primitive root-word stems.

There is another intelligent and subtle way to construct unique finger print of languages, i.e., by using frequency statistics on the basic list of words constructed by Morris Swadesh [6,7]. He used a list of 207 words translated in multiple languages as the basis for comparing languages. We will use frequency statistics on the translated words. In **Table 1** we display the statistics on starting letters on the Swadesh words for different languages.

Table 1 Frequency of first letter for Swadesh word list of some languages

Language	k/g		p/b		m	a	n	t/d		e	i	v/u		r	s/c	
Elam	11	2	6	7	16	23	11	9	2	4	13	0	3	6	9	0
Sumer	13	20	11	9	22	17	20	15	21	6	10	0	17	7	19	0

Language	k/g		p/b		m	a	n	t/d		e	i	v/u		r	s/c	
Ashkun	24	7	15	8	12	23	13	10	16	0	7	14	5	0	15	7
German	13	11	1	17	9	7	10	5	18	13	3	6	2	12	51	0
Persian	19	12	18	21	13	20	15	9	22	6	5	3	1	12	33	14
Hindi	24	12	56	18	18	22	9	16	25	3	5	4	3	4	23	13
Bengali	22	11	25	34	17	14	8	12	15	5	2	1		4	19	16
Gujarati	20	12	30	22	14	18	11	21	13	3	3	9	5	5	25	11
Marathi	27	12	35	19	17	21	13	23	23	3	7	11	5	7	16	15
Telugu	34	9	40	11	28	23	25	19	3	17	11	19	4	7	9	21
Tamil	47	0	43	0	38	38	37	31	0	21	21	27	11	4	0	18
Malayalam	54	0	39	4	37	29	30	27	3	11	14	28	7	6	10	14
Kannada	38	8	4	19	22	20	23	16	4	12	7	0	9	3	8	5
Tulu	16	1	10	7	8	23	5	6	1	11	10	0	4	1	3	2
Brahui	11	6	14	16	9	17	8	6	14	2	5	1	2	3	12	8
Korean	7	33	12	26	30	15	27	9	22	10	8	0	3	0	28	7
Finish	35	0	28	0	26	4	8	24	0	5	6	14	2	5	28	0
Turkish	42	15	2	28	2	18	7	11	30	6	15	3	6	1	24	1
Mandarin	2	11	5	14	6	0	16	17	17	0	0	0	0	10	14	13
Sanskrit	24	10	38	11	18	28	15	18	17	4	3	23	2	9	39	7

We can construct multi-letter finger print (Swadesh-ID) using frequency of occurrence of initial consonants (that occur in the beginning of the word) in different languages (Table 2).

Table 2 Swadesh-ID of some languages

Language	Swadesh-ID	Occurrence frequencies
Sanskrit	PCTKVMN	(K/G:34)(P/B:49)(T/D:35)(M:18)(N:15)(V/U:27)(S/C:46)
Ashkun	KTPVNMC	(K/G:31)(P/B:23) T:26 S/C:22 M:12 N:13 A:23 E:0 I:7 V:19
Tiurkish	KTPCVNM	(K/G:57)(P/B:38)(T/D:41)(M:2)(N:7)(V/U:9)(S/C:25)
Finish	KPCMTVN	(K/G:35)(P/B:28)(M:26)(T/D:24)(N:8)(V/U:14)
Korean	KPCTMNV	(K/G:40)(P/B:38)(S/C:35)(T/D:31)(M:30)(N:27)(V/U:3)
Mandarin	TPKCVNM	(K/G:13)(P/B:19)(M:6)(N:16)(T/D:34)(V/U:11)(S/C:27)
Brahui	PTCKMNV	(P/B:30)(T/D: 20)(S/C:20)(K/G:17)(M:9)(N:8)(V/U:3)
Tulu	KPMTNCV	(K/G:17)(P/B:17)(M:8)(T/D:7)(N:5)(S/C:5)(V/U:4)
Kannada	KPNMTCV	(K/G:46)(P/B:23)N:23M:22(T/D:20)(S/C:13)V:0
Malayalam	KPMVNTC	(K/G:54)(P/B:39)M:37(V/U:35)N:30(T/D:30)(S/C:24)

Language	Swadesh-ID	Ocurrence frequencies
Tamil	KPVMNTC	(K/G:47)(P/B:43)(V/U:38)M:38N:37(T/D:31)(S/C:18)
Telegu	PKCMVNT	(P/B:51)(K/G:43)(S/C:30)M:28(V/U:27)N:25(T/D:22)
Marathi	PTKCMVN	(P/B:54)(T/D:46)(K/G:39)(S/C:31)M:17(V/U:16)N:13
Gujarati	PTKCMVN	(P/B:52)(S/C:36)(T/D:34)(K/G:32)(V/U:14)M:14N:11
Bengali	PCKTMNV	(P/B:59)(S/C:35)(K/G:33)(T/D:27)M:17N:8(V/U:1)
Hindi	PCKTMNV	(P/B:74)(T/D:41)(S/C:36)(K/G:36)M:18N:9(V/U:7)
Persian	CPTKNMV	(S/C:47)(P/B:39)(T/D:31)(K/G:31)N:15M:13(V/U:4)
German	CPTKNMV	(S/C:51)(P/B:18)(T/D:23)(K/G:24)N:10M:9(V/U:8)
Sumer	TKMPNCV	(T/D:36)(K/G:33)(M:22)(P/B:20)(N:20)(S/C:19)(V/U:17)
Elam	MKPNTCV	(K/G:13)(P/B:13)(M:16)(N:11)(T/D:11)(S/C:9)(V/U:3)

Table 2 data helps distinguish between the different families of languages, especially between Dravidian and Indo-European languages. This also points to the cross-pollination between Indian languages, especially the strong influence of the Indus-Dravidian substratum on languages like Hindi and Bengali. We can also see lateral drift of Telugu to a South Central Dravidian. Tamil language has tried to avoid Sanskritization through various political and social movements, thus showing a distinct characteristics, but as can be seen at the Swadesh-ID finger print, that Kannada, Malayalam and Tamil show a clear similarity within the Southern Dravidian, with Telugu showing the different characteristics of a South Central Dravidian language.

Using the decipherment [1] we were able to report on the frequency of occurrence initial consonant of Indus Signs by means of cumulative concordance frequency of signs grouped together on the basis of initial consonants.

Table 3 Indus script frequency table

M77 sign numbers	Initial Consonant	Glyph	Concordance Frequency
59+67+70+72	k*	𑀭++	910=373+276+73+188
373+375+379+391+403	p*	𑀮++	422=61+57+17+195+92
287+293+298	v*	𑀶++	226=86+135+5
53+225+222+229	t*	𑀭𑀮++	160=129+4+22+5
197+198+201+202+204	m*	𑀭𑀮++	154=56+4+9+9+76
374+400+321+402	n*	𑀭𑀮++	130=9+14+9+98
240+241+358+381	c*	𑀭𑀮++	50=3+1+32+14

We can conclude from this table that the equivalent Swadesh-ID for Indus script is KPVTMNC. This Swadesh-ID has highest similarity with the Southern Dravidian languages. If we study the Levinshtein copyediting distance between the Indus script Swadesh-ID (KPVTMNC) and the Swadesh-IDs of languages listed in Table 2, we can conclude that Tamil Swadesh-ID has the smallest Levinshtein copyedit distance (d=2) from the Indus Script Swadesh-ID. However, an improved copyedit distance metric with weights for rank-diff creates a better distance metric as shown in Table 4 below.

Table 4 Languages and their Swadesh distance with Indus Script

Language	Swadesh-ID	Edit distance (Levenshtein)	Edit distance by rank difference
Indus script	KPVTMNC	0	$7 1-1 +6 2-2 +5 3-3 +4 4-4 +3 5-5 +2 6-6 + 7-7 = 0$
Brahui	PTCKMNV	3	$7 1-4 +6 2-1 +5 3-1 +4 4-2 +3 5-5 +2 6-6 + 7-3 = 49$
Korean	KPCTMNV	2	$7 1-1 +6 2-2 +5 3-7 +4 4-4 +3 5-5 +2 6-6 + 7-3 = 24$
Finish	KPCMTVN	4	$7 1-1 +6 2-2 +5 3-6 +4 4-5 +3 5-4 +2 6-7 + 7-3 = 28$
Turkish	KTPCVNM	5	$7 1-1 +6 2-3 +5 3-5 +4 4-2 +3 5-7 +2 6-6 + 7-4 = 39$
Sanskrit	PCTKVMN	5	$7 1-4 +6 2-1 +5 3-5 +4 4-3 +3 5-6 +2 6-7 + 7-2 = 61$
Ashkun	KTPVNMC	3	$7 1-1 +6 2-3 +5 3-4 +4 4-2 +3 5-6 +2 6-5 + 7-7 = 24$
Mandarin	TPKCVNM	5	$7 1-3 +6 2-2 +5 3-5 +4 4-1 +3 5-7 +2 6-6 + 7-4 = 45$
Tulu	KPMTNCV	4	$7 1-1 +6 2-2 +5 3-7 +4 4-4 +3 5-3 +2 6-5 + 7-6 = 29$
Kannada	KPNMTCV	4	$7 1-1 +6 2-2 +5 3-7 +4 4-3 +3 5-4 +2 6-3 + 7-6 = 34$
Malayalam	KPMVNTC	4	$7 1-1 +6 2-2 +5 3-4 +4 4-6 +3 5-3 +2 6-5 + 7-7 = 21$
Tamil	KPVMNTC	2	$7 1-1 +6 2-2 +5 3-3 +4 4-6 +3 5-4 +2 6-5 + 7-7 = 13$
Telugu	PKCMVNT	5	$7 1-2 +6 2-1 +5 3-5 +4 4-7 +3 5-4 +2 6-6 + 7-3 = 42$
Marathi	PTKCMVN	6	$7 1-3 +6 2-1 +5 3-6 +4 4-2 +3 5-5 +2 6-7 + 7-4 = 48$
Gujarati	PTKCMVN	6	$7 1-3 +6 2-1 +5 3-6 +4 4-2 +3 5-5 +2 6-7 + 7-4 = 48$
Bengali	PCKTMNV	4	$7 1-3 +6 2-1 +5 3-7 +4 4-4 +3 5-5 +3 6-6 + 7-2 = 45$
Hindi	PCKTMNV	4	$7 1-3 +6 2-1 +5 3-7 +4 4-4 +3 5-5 +3 6-6 + 7-2 = 45$
Persian	CPTKNMV	5	$7 1-4 +6 2-2 +5 3-7 +4 4-3 +3 5-6 +2 6-5 + 7-1 = 56$
German	CPTKNMV	5	$7 1-4 +6 2-2 +5 3-7 +4 4-3 +3 5-6 +2 6-5 + 7-1 = 56$
Sumer	TKMPNCV	6	$7 1-2 +6 2-4 +5 3-7 +4 4-1 +3 5-3 +2 6-5 + 7-6 = 60$
Elam	MKPNTCV	6	$7 1-2 +6 2-3 +5 3-7 +4 4-5 +3 5-1 +2 6-4 + 7-3 = 57$

These results conclusively show the close affinity between Dravidian languages and the Indus script as deciphered by the author [1].

Origins of proto-Dravidian language as rooted in the Indus script

In this short section we will describe some of the root words of Dravidian language and it's relationship to the Indus Script. For more details please refer to the actual decipherment [1].

The numbers

- (1a) | – -al, mutal (syllable, first)
- (1b) || – -ir, iru (syllable, vast)
- (1c) ∪ || – irū (two)
- (1d) ||| – mū (mature)
- (1e) ∪ ||| – mūvū (three)
- (1f) |||| – nal (good)
- (1g) ∪ |||| – nālū (four)

The human

- (2a) 𐀀 – -an: avan (person, human)
- (2b) 𐀀𐀀 – annan (brother)
- (2c) 𐀀𐀀 – kāvalan (guardian)

- (2d) 𐎧 – mutalvan (chief)
- (2e) 𐎧, 𐎧 – vēlan, vēṭan (hunter)

Ūr and it's various manifestations

The original role model of a town, the Sumerian town:

- (3a) 𒂍 – ūr – town/village – origin – farmer's town

It has deep connections to the Dravidian language. All towns first start as farming villages where they melt the soil to increase fertility. The earthworm also helps in melting the soil, especially in the black soil:

- (3b) 𐎧 𐎧 𐎧 𐎧 ñālam-nilam - fertile land, ricefield (DEDR 2913, 3676)
- (3c) 𐎧 – plough
- (3d) urukku (DEDR 661) – melt the soil
- (3e) 𐎧 – uṛavan – farmer

Such a fertile farmer's town creates a great cogglomeration of near relatives:


- (3f) 𐎧, 𐎧 (DEDR 710) – to be close, nearness, relation
- (3g) 𐎧 – uṛ – inside
- (3h) 𐎧 – ū – flesh, body, thing

The sun and the ancient scripts

The sun ☼ is quite central to life in early civilizations. In the Indus script, we associate the oval sign ○ with the syllable “pakal” (daylight) and so in essence it is the syllable “pa”. The “pa” has many bright-white associations such as “pal” (teeth), “pala” (many teeth), “pāl” (milk), “pallā” (tusk, elephant), “pantu” (ball), “pattu” (ten – many). In the ancient Chinese characters also the sun is also denoted by the oval sign ☉ which then regularized later on to the rectangular form 日, with a combination of sun (日) and the moon (月): 日月 being the common abstraction, the brightness. Just like the Dravidian mild-male association of “appan”, “appu”, and “appa”, in the Egyptian hieroglyph also it leads to a patriarchal bright sun – the “ra” (king-god). In the Indo-European, the etymological root of the “sun” is also the feminine “*sāwel/sunne” similar to the feminine Greek goddesses “Sol” (sun) and “Luna” (moon). The “*sawelyo” eventually morphed into masculine “helios”.


The sun

- (4a) ○ – pa: pakal (sun, daylight)
- (4b) ① – pal, pāl, pala (teeth, milk, many)
- (4c) ② – pallā, piṭṭir (tusker, elephant trumpet)
- (4d) ③ – pammu (twine, to drum)
- (4e) ④ – pū (flower, insect)
- (4f) ⑤ – poḷ (bright)

(4g)  – par, parai (drum)


(4h)  – pan, pan, paṇ, pān (palm tree, agriculture land, work, song)


The bird

(5a)  – pori, puri, puṛā, puṛa, pūr (courage, pride, chicken, pigeon, dove, quail, pheasant)


(5b)  – irakkam, irappu, irakkam, irappu (mercy, death, loss)


The pot


(6a)  – ta: tavaḷa (frog, small pot)


(6b)  – tattu, tatti (leap, jump)

(6c)  =  + | – taḷu, tadu (push, block)

(6d)  – mū-taṛi (burial pot)


(6e)  – toṭu (touch)

(6f)  – tai (weave)

(6g)  – taṭṭi, taṭṭu, taṭṭāṇ (mat, strike, carpenter, bronze smith)


The fish-boat


(7a)  – kanni (fish, boat, vehicle, trap)


(7b)  – kāl, kōl, koḷ (vehicle, sail-boat, accept)

(7c)  – konde (bullock)


(7d)  – kō (cattle herder chief)

(7e)  – kōṭa (fort)


(7f)  – kōṭṭam (fort, congregation)

(7g)  – kōṭṭai (fortress, united fort)

The net


(8a)  – vala, valai, vaḷai, vāḷai (right, net, bent, a fish)


(8b)  – valaiyan (fisherman, trapper)


(8c)  – iṭa, iṭai (gap, left)

(8d)  – iṭaiyan (herdsman)

Tiny zero

(9a)  – no, noccu, noyya (small, tiny, minute)

(9b)  – nāṇ (thread)

(9c)  – nuḷḷāṇ, nuḷḷan (mosquito, tailor)

Syllable	English Swadesh list	Morphemes	Dravidian variations and expansions
avvōṅannan	elder brother	-anan, -aṇṇal	aṇ, aṇṇaṇ, aṇṇe, aṇṇa, anna, aṇṇal
kāvalaṇ	guardian	kā-	kāvalaṇ, kākkai, kaval, gavana, kavanam
vēlan	lancer	vē-l-an	vēlan, vēlāṇ, vēli
vēṭan	hunter	vē-ṭ-an	vēṭan, vēṭṭuvaṇ, vēṭṭai, vēṭṭa
ūr	town, village	ū-r	ūr, ūru, uṟu
ñālam	black soil	nal-mū	ñālam
nilam	land	nil-mū	nilam
uṟu	melt	ū-r-ū	uṟu
urukku	melt	ū-r-ū-ku	urukku
uṟavan	tiller	ū-r-an	uṟavan
mutalvan	first one	mutal-an	mutalvan
uru	relate	ū-r-ū	uṟu
uṟavu	relation	ū-r-ū	uṟavu
ul	inside	ū-l	ul, ulḷu
ū	meat, body	ū-, -ū	ū
pakal	daylight	pa-, -pa	pakal, pagaṭi, hāgalu, pagelda
pal	teeth	pa-l	pal, pallu, hallu, dantālu
pāl	milk	pa-l	pāl, pālu, hāllu,
pala	many	pa-l	pala, cālā, halavu, valare
pallā	tusker	pa-l-āru	pallā
piḷḷir	elephant trumpet	pa-l-āru	piḷḷir
pammu	twine	pa-mū	pammu, pammal, hammu
pū	flower	pa-ū	pū, pū, pūvu, pāi
poḷ	to flower	pa-ū-l	poḷ
para	drum	pa-ra	para, dolu
paraḷ	drumming, message	pa-r-ai	paraḷ
paṇ	work	pa-no	paṇ, pan
pān	song	pa-no	pān, pāṇ, pāṇu, pāṇṇu, pāṇan
pori	chicken, trap,	para-	pori, poru
puri	strength, courage, pride, love	-puri	puri
puṟā	pigeon	para-	puṟā, para
puṟa	pigeon	para-	puṟa, para
pūr	quail	pūr-	pūr
iṟakkam	pity	iṟa-	iṟakkam
iṟappu	death	iṟa-	iṟappu, iṟappu, iṟakkam
tavaḷa	frog, small pot	ta-	tavaḷa, tavaḷa
tattu	leap	-tattu	tattu, tatti
tala	head	ta-l	tala, tale, talai
taḷu	push	ta-l-ū	taḷu
tadu	block	ta-d-ū	tadu
taṟi	burial pot	taṟ-	taṟi
toṭu	touch	ta-ṭu	toṭu
tai	stitch	ta-inai	tai
tatṭi	mesh	-tatṭi	tatṭi
tatṭu	tinker	-tatṭu	tatṭu
tatṭāṇ	smith	tatṭi-an	tatṭāṇ, tatṭaṇ
kanni	trapper	ka-	kanni
kāl	vehicle	ka-l	kāl, kaḷe, kalu, kalam
kōl	boat	ka-l	kōl
koḷ	accept	ka-l	koḷ
konde	bull	-konde	konde
kōṭa	fort	kō-ṭa	kōṭa
kōṭṭam	fortress	kōṭṭa-mū	kōṭṭam
kōṭṭai	fortress	kōṭṭa-ai	kōṭṭai

Syllable	English Swadesh list	Morphemes	Dravidian variations and expansions
vala	right	vala-	vala
valai	net, bend, scabbard fish	vala-ai	valai, vaḷai, vālai
valaiyan	netter	valai-an	valaiyan
iṭa	gap, left	iṭa-	iṭa, iṭai
iṭaiyan	herder	iṭa-an	iṭaiyan
no	tiny	no-, na-,	no, noccu, noyya
ñāṇ	thread	no-no	ñāṇ
nuḷḷāṇ	musquito, tailor	no-l-an	nuḷḷāṇ, nuṛan

Conclusion

In this short note we briefly outlined some of the ancient root words of Dravidian that lie at the heart of the logo-syllabic Indus script, a script that is fundamental to the conception and the genesis of a simple proto-Dravidian language, the Indus-Dravidian, a language that germinated from the barter trade transactions of the Indus river transport system. In order to establish this further, a Indus-Dravidian Swadesh list is being proposed, which can further the cause of this decipherment.

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