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The 'High-West: Low-East' Dichotomy of Indus Cities: A Dravidian Paradigm

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Title page illustration: Indus Seal (Marshal. 338)
(Courtesy: *Corpus of Indus Seals and Inscriptions*, Vol.1)

CONTENTS

Abbreviations

General

DEMS = Direction-Elevation-Material-Social; **GIS** = Geographical Information System;

Lat./ N = Latitude/North; **Long./ E** = Longitude/East; **MSL** = Mean Sea Level

Languages

Ass = Assamese; **Beng** = Bengali; **Br** = Brahui; **Ga** = Gadaba; **Go** = Gondi; **Guj** = Gujarati;

H = Hindi; **Ka** = Kannada; **Kas** = Kashmiri; **Ko** = Kota; **Kod** = Kodagu; **Kol** = Kolami;

Kur = Kuruk; **Ma** = Malayalam; **Mar** = Marathi; **Or** = Oriya; **Pa** = Parji; **Panj** = Punjabi;

Pkt = Prakrit; **Sgh** = Singhalese; **Skt** = Sanskrit; **Ta.** = Tamil; **Te** = Telugu; **To** = Toda; **Tu** = Tulu

Works

Aka = *Akanāṉūṟu*; **CDIAL** = *A Comparative Dictionary of Indo-Aryan Languages*;

CHHS = *Chengam Herostones* (Tamil Nadu State Department of Archaeology, l972);

Cilap = *Cilappatikāram*; **Ciṟupāṇ** = *Ciṟupāṇāṟṟuppaṭai*; **DEDR** = *Dravidian Etymological Dictionary* (Revised); **EC** = *Epigraphia Carnatica*; **EDT** = *Encyclopedia of Dravidian Tribes;*

EI = *Epigraphia Indica*; **ETE** = *Early Tamil Epigraphy*; **GIT** = Glossary of Tamil Inscriptions;

Kuṟun = *Kuṟuntokai*; **Maṇi** = *Maṇimēkalai*; **MASI** = *Memoirs of Archaeological Survey of India;*

Maturai = *Maturaikkāñci*; **MW** = *Monier Williams*; **Naṟ** = *Naṟṟiṇai;* **Patiṟ** = *Patiṟṟuppattu;*

Paṭṭiṇap = *Paṭṭiṇappālai;* **Perum** = *Perumpāṇāṟṟuppaṭai;* **PNDCP** = *Teṉ Pāṇṭiya Copper Plates* (Tamil History Academy, Chennai, l967); **Puṟam** = *Puṟanāṉūṟu* ; **Puṟapporuḷ** = *Puṟapporuḷ Veṇpāmālai;* **SII** = *South Indian Inscriptions;* **TAS** = *Travancore Archaeological Series, vols. i-ix (Ist ed., l9l0-47);* **TASSI** = *Transactions of Archaeological Society of South India;* **TL** = Tamil Lexicon; **Tol** = *Tolkāppiyam*

The 'High-West: Low-East' Dichotomy of Indus Cities: A Dravidian Paradigm[1]

R. Balakrishnan

Abstract

The 'High-West: Low-East' pattern observed in the dichotomous city-layouts constitutes one of the most fundamental features of the Indus (Harappan) urbanism. Local innovations notwithstanding, excavators and Indus researchers have found significant uniformities of layout configurations, segregated neighborhoods and public amenities throughout Indus civilization. Considering the importance of cardinal directions in general layout plans and the orientation of streets along the cardinal directions in the Indus cities, it would be fair to anticipate that the method of lexical encoding and naming of cardinal directions in the 'unknown language' of the Indus civilization might have been influenced by the 'prototypes of the dominant culture' in which the concept of cardinal directions probably had a significant relevance. Based on this premise, using published archeological data and archeologically inferred views, I prepare, in generic terms, a tentative Direction-Elevation-Material-Social (DEMS) matrix for the Indus dichotomy and compare that with the Dravidian and Indo-Aryan frameworks of lexical encoding and naming of cardinal directions. In the process, I find that the Dravidian languages follow a topocentric 'High-West: Low-East' model as against an anthropocentric 'Front-East: Behind-West' model of the Indo-Aryan languages and that the Indus DEMS matrix encodes a concurring association with the Dravidian framework and a contrasting one with the Indo-Aryan. I place a mass of Geographical Information System (GIS) aided toponomic evidence to demonstrate that the probable source of influence for the 'High-West: Low-East' framework is traceable to the prehistoric Dravidian human geographies in the north-western regions of the Indian sub-continent and beyond. I establish the markers for the 'High-West: Low-East' dichotomy in the Dravidian toponyms both historic and current and their geographical context. Finally, by presenting a case study of 'fighting-cocks of east-west dichotomous settlements' of the ancient Tamil country as an additional evidence for continuity in the Indus legacy, I argue in favour of a Dravidian affiliation to the concept of the 'High-West: Low-East' dichotomous layouts of the Indus cities.

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[1] This paper is based on "Prof. M. Anandakrishnan Endowment Lecture, 2012" delivered by the author on 21 September 2012 at Roja Muthiah Research Library, Chennai. The author dedicated his presentation to Dr. Iravatham Mahadevan.

Introduction

The language of Indus people is unknown and, in the absence of Rosetta Stone type bilingual texts, the Indus Script remains undeciphered; the authors of Indus civilization continue to be anonymous, the riddles still linger and, consequently, the Indian prehistory in large parts remains undated. Glyn Daniel, who said that "the prehistorian is witness to the sad fact that the ideals perish, and it is the cutlery and chinaware of a society that are imperishable", apparently had the enigma of Indus civilization in mind, for he lamented that "we have no way of learning the moral and religious ideas of the prehistoric city dwellers of Mohenjo-Daro and Harappa but their drains, their brick rubbish chutes, and their terracotta toys survive" (Glyn Daniel l964: l32). However, his optimism that the past seemed forever gone can be brought back by the skilled use of archeological reconnaissance, excavation and interpretation remains valid.

Fresh excavations at various Indus sites and multidisciplinary interpretations of information from published data have thrown new lights on the emergence, growth and decline of the Indus civilization. Rita Wright, using archeological data, has brought focus on the consciously created landscapes of Indus cities, and suggests an 'overreaching set of ideas' behind the planning and execution of the practical layouts and the impressive built world. She finds evidence for 'long-held patterns of thoughts' that might have influenced the Indus artisans and builders in creating an "urban form totally in consistent with long held views of the natural and social order of things" (Wright 20l0: 242).

Wright's study of creation and use of landscape in the Indus cities as a methodology to examine the archeological record for social differences has aided me in attempting a tentative matrix of cardinal direction, elevation, material and archeologically inferred social dimensions for the Indus cities. It is a generic one to serve the limited purpose of providing, a sort of, basic template for discussion. The assumption is that the matrix could, even hypothetically, indicate what Wright calls "a consciously created spatial and material order that signaled social hierarchies" (Wright 20l0: 234) of the Indus Age and in turn could help us in making an attempt at identifying the probable linguistic affiliation of the makers of the Indus civilization.

Edward Sapir held a view that the 'real world' is to a large extent unconsciously built up on the language habits of the group (Sapir 1958: 69). Benjamin Lee Whorf was of the opinion that "We dissect nature along lines laid down by our native languages" (Whorf 1964: 213). Sapir-Whorf Hypothesis, which combines the principles of linguistic relativity and the linguistic determinism, though critically reviewed, continues to influence the discourse on relationship between language and culture as the mainstream of the associated psycholinguistic paradigm. The model of cultural prototypes offers an alternative that the connotation of lexical items is influenced by the prototypes of the dominant culture rather than the culture being affected by lexis (Hadley 1997: 483). However, what is relevant for this study is the fact that both the current mainstream and the alternate views underscore the close link between language and culture, notwithstanding the direction and the degree of such influence.

In this context, Cecil H. Brown's study, "*Where do Cardinal Direction Terms Come From?"* covering 127 globally distributed languages, supplies anchoring template. Apart from assembling cross-language tendencies in lexical encoding and naming of four cardinal directions, Brown's survey also demonstrates how the priority of lexical encoding is directly related to the salience of referents, be it natural or cultural. This study also indicates that a particularly conspicuous geographic feature associated with a cardinal direction may influence the encoding priority (Brown 1983: 121-161). I find Brown's work to be useful and relevant to the core objective of this paper in comparing the elements of Indus dichotomy with the encoding frameworks in the Dravidian and the Indo-Aryan languages.

Place names are the 'fossilized representation' of immemorial past. Dichotomous place names in terms of cardinal directions (East-West and North-South villages) are found worldwide. A systematic study of place names with direction-indicating prefixes can give evidence for the relative salience of cardinal directions within specific languages and human geographies. Besides, such names could also throw light on the linguistic changes, if any, with reference to the names of cardinal directions, development and loss of polysemy etc., within a language.

Marking the aspects of 'East-West' dichotomy of the layouts, fortifications, preference for elevated areas (as a functional requirement or as a symbolism) as significant

elements of the Indus town planning, I have gathered comparative toponomic evidence of the north-western geographies (including modern Pakistan and Afghanistan) and of various states of India to show how these elements find their reflections in toponyms. The idea is to gauge the importance of these elements within the context of specific human geographies. I have made use of GIS to map the locations as per geo-coordinates and altitudes above Mean Sea Level (MSL) to draw conclusions.

Migrations have shaped the contours of the pre-history and the history of the Indian subcontinent to a considerable extent. The shifting of late and post-Harappan settlements towards east, south and south-west are archaeologically evident. The fact that the Indus civilization did not suffer a sudden death but gradually declined hints at the possibility of tracking the Indus legacy through reliable markers, even outside the core geography of the Indus civilization. Hence, serious probes on Indus legacy cannot be profitably based only on the evidence of 'cutlery and chinaware of the society' but has to incorporate other tell-tale markers as well.

Thus, my thesis is built on the following four premises:

1. The 'High-West: Low-East' dichotomy of the Indus layouts was not a mere coincidence but, it was indeed an expression of some 'long-held patterns of thoughts'.
2. The cultural prototypes of the Indus civilization, in all probability, played an influencing role in the process of lexical encoding and naming of cardinal direction terms in the unknown language of the Indus civilization, and a three way comparison of the DEMS matrix of the Indus dichotomy, the Dravidian and the Indo-Aryan frameworks would offer valid clues about the linguistic affiliation of the Indus population.
3. Toponyms of Indian sub-continent both historical and current have great potential to unravel the mysteries of the Indus civilization.
4. The remnants of Indus legacy are traceable in the contemporary Indian societies.

Part I

Dichotomous Layouts of the Indus Cities

The concept of dichotomous lay-outs in terms of 'Citadel' and 'Lower Town' stands out as one of the most prominent and defining features of the Indus cities. The Indus town planners had a tendency to situate the so called 'Citadel' on a higher mound or an elevated part towards the most feasible west and the 'Lower Town' towards the east. The collective weight of the archeologically derived evidence for visible uniformities in the planning of 'practical layouts', general orientation of the houses along the cardinal directions, well regulated and encroachment-free streets, massive mud-brick platforms, impressive fortifications, segregated neighborhoods and unprecedented civic amenities in various urban settlements across the Indus civilization completely negate the possibility of this foundational feature of dichotomy being a mere coincidence. The deliberate hands in the design and execution of master-plans, rich in symbolism, are apparent.

The Roots of Dichotomy

Archaeologists have found evidence for the existence of a dichotomous settlement, around 3000 BCE, in terms of a 'Citadel' on high ground and an outer area, at Kot Diji, of Sindh Province, Pakistan (Possehl 2002: 73). Similar evidence is available at Amri, situated near the foothills of Kirthar Mountains. These 'high place/lower town settlement layouts' common to the Amrian and Kot Dijan sites may represent a tradition carried forward into the urban period of the Lower Indus (Wright 20l0: ll6). Besides, the discovery of a site of even earlier antiquity at Mehrgarh in Pakistan has broadened the canvas of understanding of the 'antecedents' of the Indus civilization.

Inventory of the Indus Dichotomy

Of the major Indus cities, the concept of 'High-West: Low-East' dichotomy is visibly well pronounced at Mohenjodaro, Kalibangan and Dholavira whereas, at Harappa, the same would demand some amount of deliberation. Other sites as well, offer valid evidence.

Mohenjodaro

Mohenjodaro has the characteristic planning – a smaller but higher part, on the west, designated as the 'Citadel' and a larger but lower part, designated as 'Lower Town' on the east, divided by a considerable open space in between (Lal 1997: 104, Jansen 1985: 161-169). The higher parts of the Citadel currently rise eighteen meters above the plain. The upper town "sat prominently to the northwest" and the sectors were separated by uninhabited 'empty' zones (Wright 2010: 116). The Citadel Mound at Mohenjodaro is generally described as 'high western mound.' This at once reveals its situation towards the west, as well its higher elevation in comparison with the Lower Town located on the eastern side of the city. Apart from the higher elevation, the presence of large, nonresidential structures such as the so called 'Great Bath', 'Granary', 'College', etc., differentiates the Citadel from the Lower Town (fig.1).

Harappa

At Harappa, the Citadel known as 'Mound AB' is situated on the west and the mounds of the so called 'Lower City' known as 'Mound E' towards east and south-east (fig.1). The reports of M. S. Vats who excavated the ruins in 1920-21 and in 1933-34 indicate that the highest mound was on the north-west, which was 60 feet above the fields (Vats 1999: 2-3). The full extent of ruins at Harappa, as Vats observes, has not yet been determined. Taking due notice of the fact that in case of Harappa the lower town did not lie due east

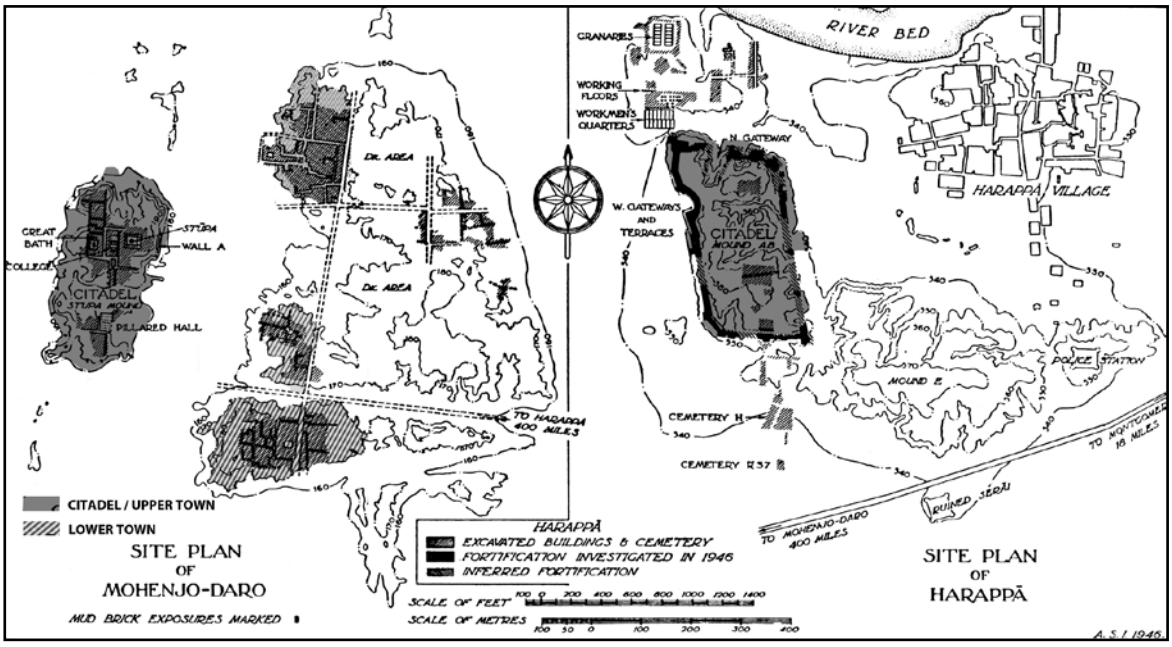


Fig.1. Layout of the Indus cities of Mohenjodaro and Harappa. (After: Asko Parpola: 2000)

of the Citadel but lay mainly to the southeast of the Citadel, B. B. Lal makes the following observation:

"The contours do not show any mound-formation due east of the Citadel, unless it is assumed that originally there did exist a mound in this part but has since been thoroughly wiped out. There is also no record to establish that the brick-robbing that took place at Harappa in the last century for laying the track for the Lahore-Multan Railway was concentrated in this area." (Lal l997: ll2)

But, there is room for assuming the existence, in the past, of a mound on the east. Alexander Cunningham who visited the site twice in l853 and l856 lamented that he made several excavations at Harappa, but the whole surface had been so completely cleared out by the railway contractors that he found very little worth preserving. He further stated:

"... the remains at Harappa had more than sufficed to furnish brick ballast for about l00 miles of the Lahore-Multan Railway. Since then brick-digging has been carried on with equal vigor by the people as a ready means of livelihood, for it is patent that the town of Harappa, which shelters about 5000 souls, as well as some neighboring *Chaks* (colonies) mainly owe their burnt brick houses to these ruins." (Cunningham quoted in Vats l999: 3)

Cunningham reported that there was a continuous line of mounds on the north, the west and the south sides, about 3,500 feet in length, but on the east side, which was only 2000 feet in length and that there was a complete gap of 800 feet for which he was unable to account. Cunningham traced the remains of flights of steps on both the eastern and western faces of the high mound at the north- west which is about 60 feet above the surrounding fields. But these structures were not traceable when Vats did his excavations in l920-2l.

Hence, what we derive from the ruins of Harappa is only an incomplete picture. Notwithstanding this restriction, the ruins at Harappa with confirmed high mound on the north west and an unaccounted gap of 800 feet on the east, read with its history of spoliation, still vouch for the concept of dichotomous layout planned and executed by the Harappan town planners. The presence of nonresidential structures on the west and northwest parts of the city differentiates these areas from the rest.

Mortimer Wheeler, who compared the general layouts of the cities of Mohenjodaro and Harappa, it seems did not find any serious deficiency for he observes that "The mounds themselves, at each site, fall into two groups: a high mound towards the west and a much more extensive but somewhat lower series to the east." (Wheeler l968: 26) Wheeler was probably willing to give the benefit of doubt in favor of Indus architects and fill the 'complete gap of 800 feet' as evidence for spoliation. Because, by that time, the concept of dichotomous lay-out of Indus cities was not a surmise, but had become an article of faith within archeological circuits. Besides, the proof for this dichotomy not merely hinges on the 'missing gap' at Harappan mounds. It has convincing evidence from other prominent Indus sites as well.

Kalibangan

The ruins at Kalibangan (fig.2) confirm the 'High-West: Low-East' dichotomy of Harappan lay out. In fact the Indus agenda is far clearer at Kalibangan. As in the case of Mohenjodaro, Kalibangan has two mounds; a smaller one, named as KLB-l on the west; and a bigger one, named KLB-2 on the east. However, the significance of excavations at Kalibangan lays in the fact that these have brought to light a settlement which preceded the Mature Harappan providing a fair idea of the transformation of pre Harappan culture into Mature Harappan. The layout of the succeeding Mature Harappan, as Lal highlights, was in the 'usual grand style' with the Citadel on the west and the Lower Town on the east (Lal l997: ll9). While drawing the layout and executing the same, the Harappan town planners it seems, took advantage of the height provided by the earlier settlement for situating the Citadel. However, for the purpose of situating the Lower Town they used a fresh area, about 40 m to the east of the Citadel.

The Harappan mind that favored a 'High-West' is readable archeologically. In the process of taking advantage of the height of the earlier mound for situating the Citadel on it, the Harappan engineers utilized the western and northern arms of the earlier fortification with necessary modifications. But, when it came to the eastern side, they completely forsook the pre-Harappan alignment and provided new alignment. This was, in the words of Lal, "evidently done in order to execute a predetermined plan, according to which the overall outline of the Citadel constituted a parallelogram, the north south

arm measuring 240 m each and the east west arm l20m - clearly a favorite Harappan proportion of 2:l" (Lal l997: ll9).

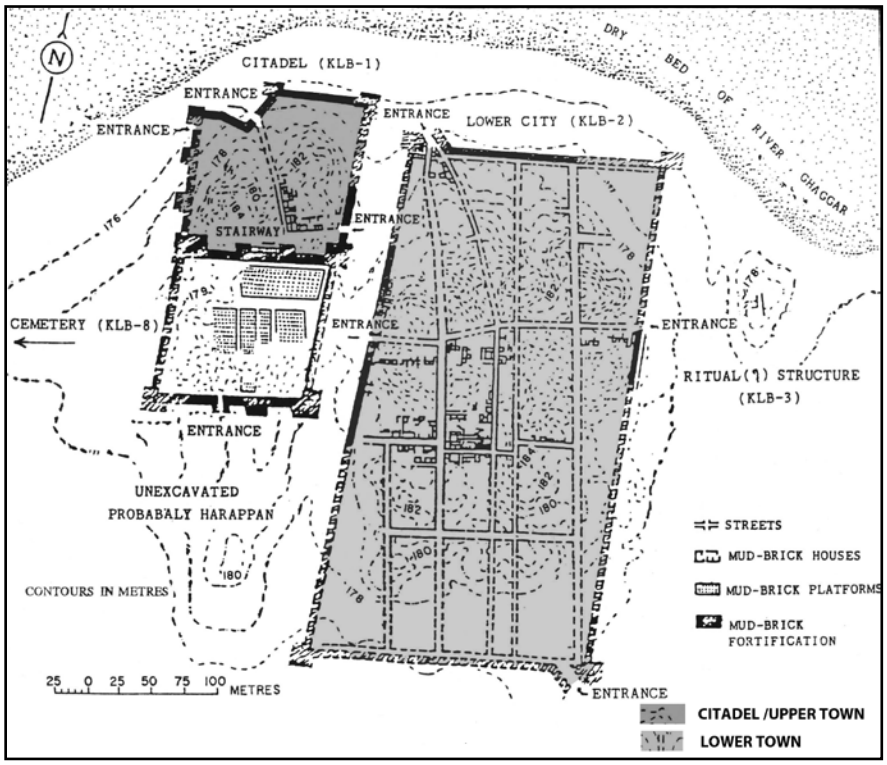


Fig.2. Layout of the Indus city of Kalibangan, (After B. B. Lal: l997)

Dholavira

At Dholavira as well, the high ground where the 'Castle' and 'Bailey' are located, is to the north-west of the layout plan. The Harappan settlement here had three distinct parts which the excavator has called the 'Citadel' the 'Middle Town' and the 'Lower Town' all interlinked within an elaborate system of fortification (fig.3). The bipartite Citadel with its two pronounced sub-parts - the 'Castle' on the east and the 'Bailey' on the west-is unique to Dholavira. Both these parts are fortified. Besides, there are walls that divide the high parts of the town and the lower town. The Castle with a height of l5-l8 m above the surrounding plane commands the entire city-complex and its environs. When compared with the height of the Castle, other parts, i.e. the Bailey, the Middle and Lower Towns are successively lower. While the Citadel occupies a 'more westerly area' the Lower Town is situated in the eastern part of the overall layout (Lal l997: l39).

Dholavira offers solid evidence in support of Harappan's preference for 'High-West' to situate the Citadel and for 'Low-East' to situate the 'Lower-Town'. The stage IIIA of the occupation as the excavator states is marked by a rapid growth of the settlement during which the existing fortress was enlarged into two divisions, namely Castle and Bailey,

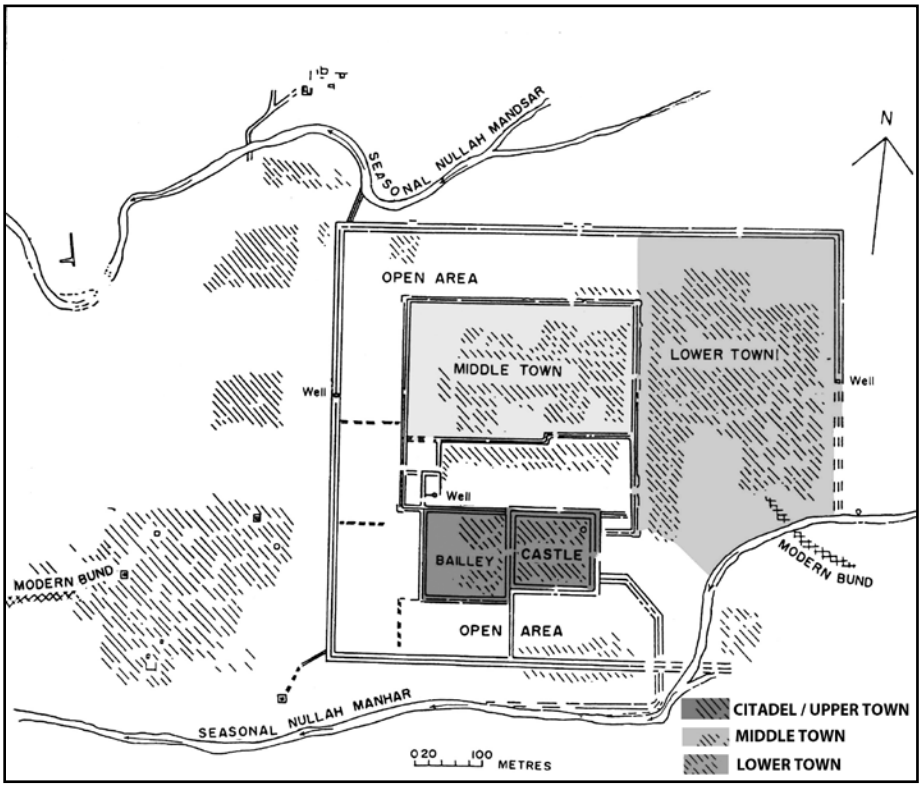


Fig.3. Layout of the Indus city of Dholavira. (After: B. B. Lal: 1997)

the former on the relics of the earlier fortress while the latter added to it from the west, both being fortified. Similarly, when Harappans added the Lower Town they chose a location that formed the eastern division of the town that was founded in stage IIIA and the city walls were extended further eastward in order to encompass the new division, the excavator reports (*Indian Archaeology 1991-92: a review.* 1996: 28).

Lothal

At Lothal, the 'ancient mound' on which the Harappan occupational debris have been discovered, rises gradually to a height of eighteen feet from the surrounding fields (fig.4). S. R. Rao, the excavator (1954-55; 1962-63) estimates that the ancient town was

much larger in extent than what is suggested by the mound which is now reduced in size owing to erosion and silting up of its slopes during the last 3000 years (Rao 1979: 20). Though the Acropolis does not occupy a separate area, it maintains its distinct identity. The excavator, who appreciates the role of a 'leader-genius' in preparing a blueprint for the civic amenities and executing the town plan at Lothal, paints the following pen-picture:

"Execution of public works on so large a scale could not have been possible but for a leader-genius who could enlist the co-operation of the inhabitants and organize and direct unskilled labour. As he was held in high regard he occupied the best mansion having civic amenities and built on the highest platforms so that the seat of authority could appear impressive. It was well protected against natural calamities. The 'Acropolis', so designated because of its function and as a seat of power, is situated in the southwestern corner of the town overlooking the dock. The Lower Town, where merchants, craftsmen and others lived, also enjoyed all civic amenities." (Rao 1979: 25)

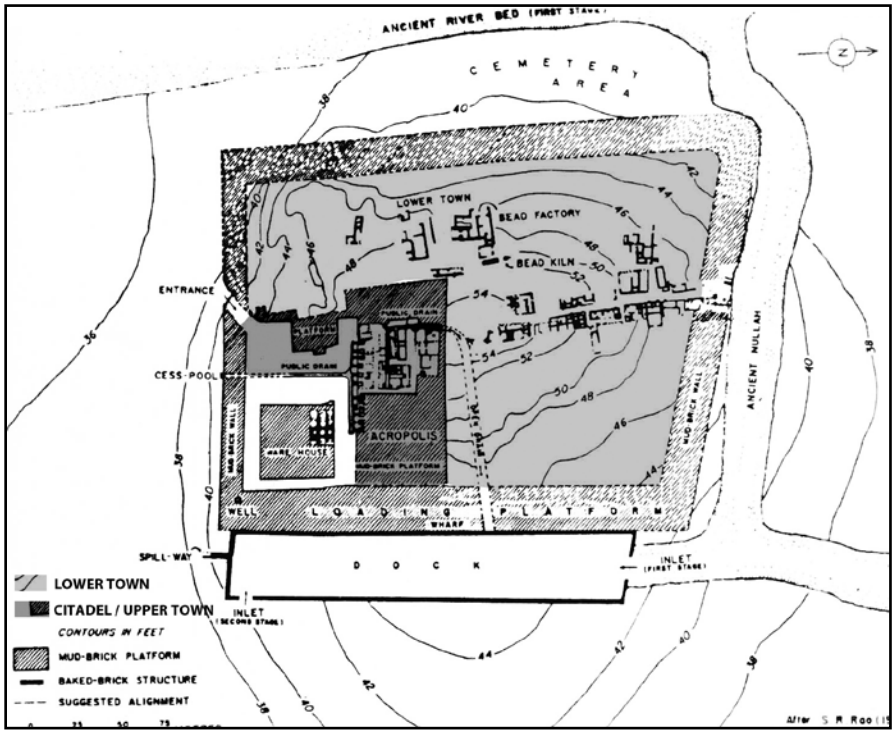


Fig.4. Indus city of Lothal, (After S. R. Rao: 1973; J. P. Joshi and R. S. Bisht: 1994)

The above narrative shows how the Harappans might have used the instrument of 'high platforms' to mark the distinction; and had a simultaneous preference for the west (southwestern, precisely) and 'height' and also argues for the social dimension of the Lothal landscape in terms of Acropolis of the 'leader genius' and the Lower town of the merchants and craftsmen. Besides, the finding of Harappan potsherds and bricks at about 200 meters southeast of the Lothal tank, and a brick-built well in a field two hundred yards east of the dock which prompts the excavator to anticipate extensions of the town to the east and south-east of the dock. And, this provides a marker for the west to east expansion of the occupation.

Banawali

At Banawali, excavations done by R. S. Bisht and his team have established that Period IC marked 'drastic and diagnostic changes' in architecture and town planning. During this sub-period the entire settlement was planned and constructed *de novo,* and the dichotomous layout, the Harappan trademark, was introduced. "The fortification of the previous period was externally chiseled or partially sliced away and doubled in width for housing the Citadel, and the lower town was laid out contiguously towards the east as well as the north, while the position in the west remained unresolved." (Indian Archaeology l986-87- a review: 33) Both the Citadel and the Lower Town were situated within the overall fortified area and the Citadel though had its own fortifications and a common wall on the southern side was not detached from the Lower Town. As the Mature Harappans went about their business of executing their new plan at the site of the earlier occupation, they saw to that the Citadel (designated as Acropolis by the excavators) occupied "a level higher than that of the Lower Town as if to oversee the latter." (Lal l997: l25)

Surkotada

At Surkotada, a small complex represents Harappan culture. B. B. Lal even wonders whether such a small complex be treated as a township on the line of other Harappan towns. But, what is relevant for this paper is that it squarely confirms the concept of 'High-West: Low-East' dichotomy (fig.5). The excavator J. P. Joshi discovered the mound at Surkotada which has an average height of five-to-eight meters (east to west)

and observed that the mound was "higher on the western side and lower on the eastern side" (Joshi 1990: 14-16). Commenting on the selection of site for the Citadel, Joshi states:

"Deep digging at various points in the mound revealed that the Harappans, on their arrival at Surkotada, discovered that the western side of the site was higher than the eastern one, the average difference in height between the two areas was 1.50 m. Perhaps, this place was found most suitable to build a citadel in the higher area and a residential annexe in the lower one. This may also suggest that the Harappans had an eye also for the selection of such site for settlement, and thus took advantage of the natural contours." (Joshi 1990: 42)

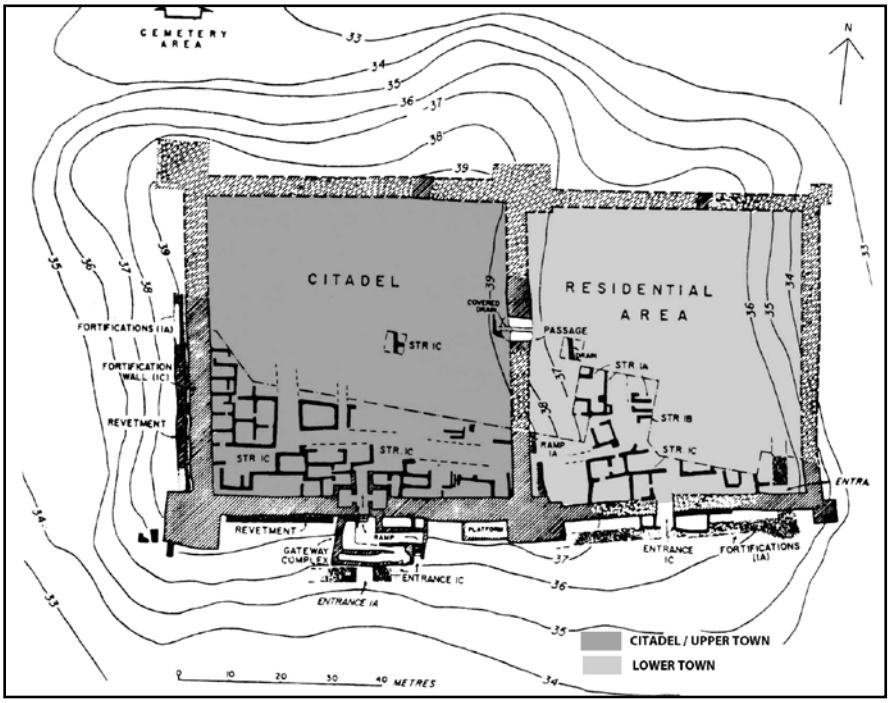


Fig.5. Layout of the Indus city of Surkotada, (After : J. P. Joshi: 1990)

The excavator describes Harappans of being 'very much platform minded'. According to him, the Harappans knowing the hazards of uneven surfaces made the entire area uniform by raising it to an average height of about 1.5 m in the Citadel area and 50 cm in the residential annexe (Joshi 1990: 42). In this context, B. B. Lal's comments that qualitatively, the main difference between the two parts seems to be that the houses in the Citadel were built over a platform of rammed earth and were bigger than those in the Residential Area, which had no underlying platform is relevant (Lal 1997: 135). This would vouch for the deliberate hands of Harappan engineers who sought to maintain the

'High-West: Low-East' equation, even symbolically, through the mechanism of underlying platforms.

Sutkagen Dor

At Sutkagen Dor, the main part of the settlement consists of what has been called a 'Citadel', although adequate evidence is not available to prove the existence of its counterpart, the 'Lower Town'. The excavations by the team led by Dales in the area outside the Citadel, to its east did not yield any substantial evidence, whereas Mockler did come across some. However, the fact remains that the Citadel commands the entire surrounding and forms a rectangle oriented along the cardinal directions (Lal l997: l43).

Balakot

Archaeologists familiar with the nuances of the Indus urbanism tend to take the dichotomous layout plans for granted. If there is a high mound at an Indus site, the archaeologists have a tendency to look east for the evidence of Lower Town. In case of Balakot, the western part of the mound is much higher than the eastern. However, there is no clear cut evidence available with reference to probable Citadel and Lower Town. Though excavations at the northern, western and southern upper edges did not reveal any surviving remains, Dales, the excavator, based on the available features, holds a view that the Western High Mound was surrounded by a formal wall.

This led Lal to make the following observation.

"As it is, the western part of the mound is much higher than the eastern, which may be due just to a much greater erosion of the eastern part. However, since the concept that Harappan settlements usually had two parts - a Citadel on the west and a Lower Town on the east- had come into being well before excavations were undertaken at Balakot, the excavator was naturally on look out for such disposition at Balakot." (Lal l997: l43)

Thus, notwithstanding local variations, the ruins of Indus towns, big and small, situated in diverse geographical regions, reveal a connecting thread of common intention and ideology that governed the design and execution of the urban landscapes of the Indus Age in terms of dichotomous layouts, at times taking advantage of the natural topography or through the symbolism of platforms, segregated areas and fortifications. Then the relevant question would be: Why did they do so?

The Sociology of Indus Town Planning

Jerome Monnet proposes that "the relationship between space, power and identity are necessarily mediated by symbols; a symbol is a concrete reality ... that communicates something intangible ... consequently, a place of power is by definition a symbolic place, which is a vehicle for power in the spatial order and for space in the order of power." (Monnet 20ll: l)

Inspired by the existing views on social dimensions of landscapes, Wright approaches the urban landscapes of the Indus cities 'as practiced places in which community identity, social order, status and wealth were formed, recognized and maintained.' She identifies some 'overreaching set of ideas' such as dichotomous layouts, large non-residential structures, massive mud brick platforms designed to raise the level of buildings and impressive walls through which the Indus architects had realized a consciously created spatial and material order that signaled social hierarchies and concludes that "like Indus material culture the city landscapes in their design and production constituted complex hierarchies, in which social differences were reinforced."(Wright 20l0: 242)

Visible separation of high parts of the town from other sectors by 'empty zones' as in the case of Mohenjodaro; visual and walled separations of the large non-residential structures and restricted access at Harappa; large open spaces in the upper town at Dholavira; presence of large, non residential structures designated as 'Great Bath', 'Granary', 'College' at Mohenjodaro, and 'Castle' and 'Bailey' at Dholavira being situated in the upper parts of the town; massive platforms designed to raise the level of buildings at many Harappan cities are among the features identified by Wright as 'markers of social and cultural identities' to argue her case that 'there clearly were preferred spaces and sites of living that reinforced social distance.'

Jansen (quoted in Wright 20l0: 237) and Wright take a special note of two massive platforms in the VS and DK-G areas of Mohenjodaro. Jansen calls these as 'founding platforms'. He recognizes the probable functional use of these massive platforms that required 'four million cubic meters of clay and sediment plus millions of bricks' to construct, as flood protection measure. However, considering that such platforms have

been constructed at places where flood protection was not a felt need, he suggests that they may have provided 'an iconographic element of elevating specific areas and structures.' Proceeding further on this, Wright identifies a symbolic connection between the Kirthar Mountain and the founding platforms of Mohenjodaro.

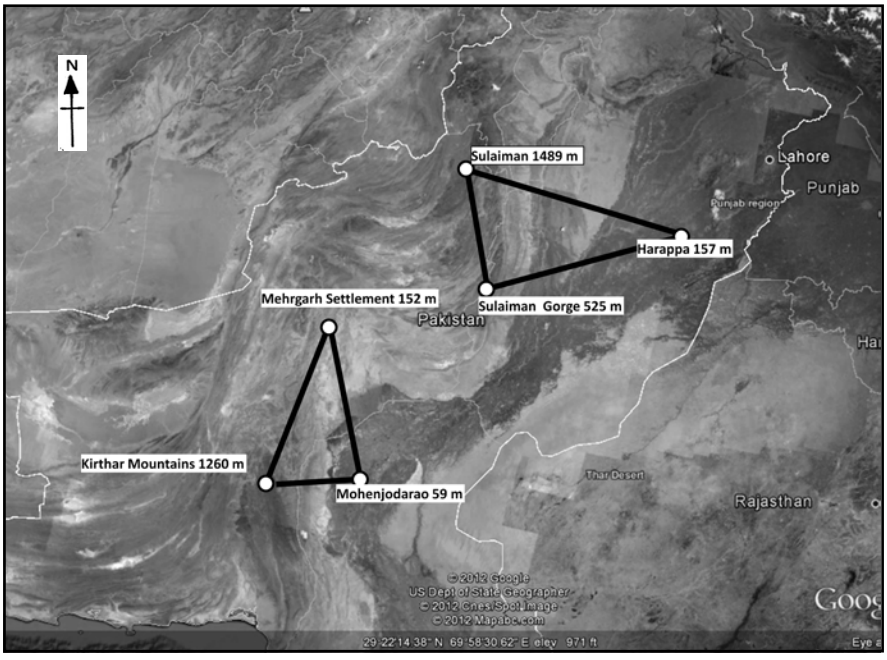
The following would sum-up Wright's view on the underlying social dimension of Indus Town Planning:

"Indus artisans and builders imposed *long-held patterns of thought* (emphasis mine) that incorporated the natural landscape into their built world. Mimicking an orientation to the natural, seen in objects of material culture, they restructured the natural landscape on grand scale into one that metamorphosed the natural into social. It was a creation of urban from totally consistent with long-held views of the natural and social order of things." (Wright 2010: 242)

DEMS Matrix for the Indus Town Planning

Therefore, on the basis of above evidence and narrative, I define, the decision makers of the Indus cities, irrespective of their eventual linguistic and cultural affiliations, as the 'High-West: Low-East' people, for whom the spatial elevations and directions were not mere concrete realities but an abstract system of preloaded symbolism as well.

Before drawing up a DEMS Matrix (Table l) for the Indus cities, it may be relevant here to pause and take a look at the Kirthar Mountain Range located in Balochistan and Sindh. (See Map l)



Map l. The Roots of Dichotomy

It forms the boundary between the Lower Indus Plain in the east and southern Balochistan in the west. The Range has a structure with the arches steepest towards the north and the west and dipping slopes towards the south and the valley of the Indus in the East. This would mean that a physical reality with a 'High-West: Low-East' gradient existed as a visible backdrop for the 'first urban climax' in South Asian history to unfold and flourish.

Table l: **DEMS Matrix**

DEMS Criteria	Citadel	Lower Town
Direction	West, North-West, Westward, more westerly area. Preference for the West	East, South East, Eastward, North-East. Deliberate positioning towards the East
Elevation	Marked by high mounds, mud brick platforms, higher elevation than Lower Town maintained. If natural advantage not available, a symbolic elevation ensured.	Lower than the Citadel/ Acropolis areas. Even when platforms are constructed, never went higher than the structures in the upper town
Material	Large, non-residential buildings. Citadel, Bailey, Castle, Great Bath, Granary, impressive walls, better drainage.	Residences of various sizes, trade objects, seals, artefacts, work sheds, workers quarters, drainage not impressive when compared with the Citadel, visible difference in the size of houses, some houses near soak pits.
Social	'Elite class rulers', 'leader-genius', 'seat of authority'	Merchants, craftsmen, other individuals

Part II

The 'High-West: Low-East' Framework in the Dravidian Languages

Sapir-Whorf Hypothesis and Alternate Views

As touched upon earlier, Sapir-Whorf hypothesis which combines the principles of linguistic relativity and linguistic determinism as well as the alternate model of 'cultural prototypes' underscore the close link between language and culture, notwithstanding the direction and the degree of influence.

Development of Names for Cardinal Directions

Cecil H. Brown in his 1983 study "Where Do Cardinal Direction Terms Come From?" (*Anthropological Linguistics,* Vol. 25, No. 2 (Summer, 1983: 121-161)) compiled data from 127 globally distributed languages which attest to cross-language uniformities in the lexical encoding and naming of the four cardinal directions and concluded that:

1. Languages have drawn on only four lexical source areas in innovating terms for cardinal directions. The sources are: (1) celestial bodies and events, (2) atmospheric features, (3) other general directional terms, and (4) environment-specific features.

2. Literal translation, polysemy and overt marking are the three indicators to reconstruct the derivational history of the terms.

3. Salience plays a crucial role in the lexical encoding, while priority of encoding is directly related to the level of salience, be it natural or cultural. High salient referents tend to be encoded before low salient ones.

4. The languages of the remote past generally lacked terms for cardinal points. When the cultural salience of the domain of cardinal direction increased, the development of names for cardinal directions took place and east and west were commonly encoded before north and south.

Salience of the Domain of Cardinal Directions in the Context of Indus Civilization

I propose to use Brown's framework of understanding to gauge the Indus mind. In spite of obscurity surrounding the issue of linguistic affiliations of the Indus population, it is highly probable that the domain of cardinal directions had acquired a high cultural salience by the time the Indus cities came into existence. The knowledge of pan-geographic fixed directions was most likely an essential and useful component of the Indus culture, known for its elaborate urban lay outs and long distance trade and mobility.

There exists a view that, in the process of orienting streets of Indus cities along cardinal directions, the "planners relied on astronomical data of the positions of the sun and fixed stars and integrated them with elements from physical landscapes." (Wankze quoted in Wright 20l0: 237). Wright adds that the Indus town planners incorporated the natural landscape elements visible on the Kirthar Mountain combined with observations of the setting sun and alignments of setting sun to provide orientation points to the city's layout (Wright 20l0: 237).

If it was true that the domain of cardinal direction had a high cultural salience for Indus people, then the lexical encoding of the terms for cardinal directions in the 'unknown' language of those people can be fairly anticipated to have been influenced by the aspects of such salience. If so, it would be an apt and fair methodology to apply Brown's framework and explore the lexical encoding process in both Dravidian and Indo-Aryan languages, the two most prominent contenders for the mantle of being called the language of the "Leader-Genius" of the Indus Civilization.

The Dravidian Lexical Encoding of Cardinal Direction Terms

Dravidian languages, it seems, use what Brown classifies as '*other general direction terms'* and '*celestial bodies and events'* as major sources for developing terms for the east and the west. Polysemy and literal translations inform two important methods indicative of derivational history.

Polysemy is the labeling of related referents, by use of a single term. The development of polysemy, involves extending a term for one referent to another. General direction

terms such as 'left', 'right', 'up', 'down', 'in front of', 'behind' and so on often share a polysemous relationship with cardinal direction terms in various languages across the globe. In case of Dravidian languages this affiliation is seen in terms of 'High-West: Low-East' Polysemies which are topo-centric.

Dravidian 'High-West: Low-East' Polysemies

'Other general direction terms'

'High-West'

DEDR: 5086

Ta. *mē* 'excellence'; *mēkku* 'west', 'height', 'high place', 'superiority'; *mēl* 'west', 'which is over', 'above', 'sky', 'excellence'; *mēlai* 'western', 'upper'; *mēṟku* 'west'
Ma. *mē* 'over'; *mēṉ* 'what is above', 'superiority', 'excellence'; *mēl* 'what is above', 'surface'; *mēlē* 'upwards'; *mēṟkku* 'westward'
Ko. *me· mu·*l 'western side'; *me· ci·m* 'western parts of Nilgiris'
To. *me·l* 'up', 'high'; *me·ṭiṇ* 'sleeping platform on right side of house'; *me·lpa·w* 'upstream'
Ka. *mē* 'that which is above'; *mēgu, mēge* 'the upper side', 'surface'; *mēgana* 'upwardly'; *mēmṇ* 'upper'; *mēṇ* 'what is above', 'upwards'; *mēl (u), mēla, mēle* 'that which is above', 'the top', 'upper part', 'surface', 'that which is high'
Kod. *meppuṇi* 'higher level in a field'; *me· ma·ḍi* = 'upper storey'
Tu. *mēlů* 'upper part of anything', 'upper', 'higher', *mēlāra* 'superficial', 'upper'; *mēlu* 'higher, 'upper', 'lying above'
Br. *bē* 'up', 'over'

DEDR: 5128

To. *muk, mok* 'up', 'west'
Ka. *mōku* 'upper portion', 'top'

DEDR: 2178

Kui. *kui* 'up', 'above', 'over', 'aloft', 'atop', 'upon', 'west', 'Kond Tribe or language'; *kuiki* 'to the place above'; *kuiṭi* 'from the place above'

DEDR: 4567

Ta.*poṟai, poṟṟai* 'mountain', 'hill'
Kol. *pode* 'high', 'up', 'the top'; *pōdēlāŋ* 'west'

'Low-East'

In Dravidian languages, the genesis of 'Low-East' polysemy is mostly traceable to the root word *kīḻ*. The Kolami word '*pallam'*; Toda word '*erk'* and Gondi word *siṛāyiñ* also confirm the polysemous nexus between the words that denote 'low' and 'east'.

DEDR: 1619

Ta. *kīḻ* 'place or space below', 'bottom', 'east'; *kīḻvu* 'place below'; *kīḻvu* 'that which is under or below'; *kiḻakku* 'east', 'low place'
Ma. *kīḻ, kīḻu* 'place below', 'under', 'down'; *kiḻakku* 'east'
Ko. *ki.* 'lower', 'east'
To. *ki.* 'lower'; *ki.koy* 'underneath place'
Ka. *keḻagu, kīḻ, kīḻa* 'state of being low', 'under', 'down',
Kod. *kī* 'lower', 'below'; *kī.da* 'place below', 'down'; *kīppuṉi* 'lower level of field'
Tu. *kīḻu* 'low'
Te. *krī* 'lower', 'below'; *k(r)inda* 'below', 'down'; *k(r)indu* 'the part or region below'; *k(r)incu* 'low'
Pa. *kiḻi* 'below'
Kur. *kiyyā* 'beneath', 'under'
Br. *ki-, kī, kē, ke* 'below', 'lower'; *kēragh* 'lower side'

DEDR: 4016

Ta. *paḷḷam* 'low land'
Ma. *paḷḷam* 'low land'
To. *paḷ* 'valley'
Ka. *paḷḷa* 'low ground';
Tu. *paḷḷa, pa'lla 'low* spot'
Te. *pallamu 'low* ground', 'wet land'
Ga. *palam* 'downslope'
Go. *palla* 'plain'
Kol. *pallām* 'east'

DEDR: 2584

Tu. *tirtů, hirtů, sirtů* 'down', 'under'
Go. *siṛ* 'under'; *iṛta* 'lower'; *siṛāyiñ* 'east'
Kui. *sīṛta* 'lower'
Kuwi. *ṛi'i* 'low', 'lower'; *ṛi'i'ka* 'lower part' (of village)

DEDR: 516

Ta. *iṟaṅku* 'to descend'
Ma. *iṟakkam* 'slope', 'descending'; *iṟavu* 'valley', 'descending slope'
Ko. *erg* 'down'; *erg-(ergy-)* 'to go down'
To. *erk* 'down', 'east'

'Celestial bodies and events'

Apart from the method of 'High-West' and 'Low-East' polysemies, some Dravidian languages have developed terms for 'east' and 'west' through the method of 'literal translation', based on 'celestial bodies and events' as a lexical source for encoding.

DEDR: 3852

Ta. *paṭu* 'to perish', 'die', 'set (as a heavenly body)', 'rain', 'lie down to sleep or otherwise'; *paṭu-ñāyiṟu* 'setting sun'
Ma. *paṭuka* 'to fall', 'sink'; *paṭiññāṟu* 'west'
Ka. *paḍu* 'to lie down', 'set' (as the sun), 'die'; *n.* 'setting', 'the west'; *paḍu-nēsaṟ* 'the setting sun'; *paḍuva, paḍaval, paḍuval, paḍuvu* 'the west'
Kod. *paḍit* 'send (child) to sleep'; *paḍi-ña·ri* 'west'
Tu. *paḍa* 'placing or laying'; *paḍḍ̃ayi* 'the west'
Te. *paḍu* 'to fall, lie', 'recline', 'sleep'; *paḍamara* 'the west'
Go. *paṭṭīnā* 'to lie down'; *pharāyīṅ* 'west'

DEDR: 5035

Ka. *mūḍi* 'rising of the sun'; *mūḍa, mūḍal, mūḍu* 'direction in which the sun rises', 'east'
Tu. *mūḍu* 'the east'; *mūḍuni* 'to rise'.

It is relevant to note that in Tamil, *mūṭu* means 'root', 'origin' and in Malayalam the same expression denotes 'the bottom', 'root', 'origin' (DEDR: 5035). The semantic association of the term with the sense of 'bottom' is evident.

The polysemous nexus between 'high' and 'west'; 'low' and 'east' comes out clearly across the Dravidian etymological spectrum in multiple ways (Table 2). The languages such as Tamil, Malayalam, Kota, Kodagu and Gondi make a polysemy of the same term, which is a typical trait for polysemy. However, in Kolami language the term *pallām* denotes 'east' while in many Dravidian languages including Tamil, Kannada, Telugu and Tulu as cited above, the word *paḷḷam* denotes 'low land'. This is indicative of a 'pan-

Dravidian' concept of lexically encoding the term for 'low' as term for 'east' and offers a glimpse of the probable influence of human geography of the Dravidian homelands.

Table 2: **'High-West' : 'Low-East' Dravidian Framework - Topo-centric**

Language	DEDR	Polysemous Term	Referent 1	Referent 2
Ta.	5086	*mēkku*	'height', 'high place'	'west'
		mēṟku		'west'
		mēl	'which is over or above'	'west'
		mēlai	'upper'	'western'
Ma.	5086	*mēṟkku*		'west'
Ko.	5086	*meˑ muˑl*	'higher place', 'up'	'west'
To.	5128	*muk, mok*	'up'	'west'
Kui	2178	*kui*	'up', 'above'	'west'
Kol.	4567	*pode/ pōdēlāŋ*	'high', 'up', 'the top'	'west'
Ta.	1619	*kīḻ*	'place, space below'	'east'
		kiḻakku	'bottom', 'low place'	'east'
Ma.	1619	*kiḻakku*	'the low land of the Tamil Country'	'east'
		kiḻakkaŋ		'man from the east'
Ko.	1619	*ki.*	'lower'	'east'
Kod.	1619	*kī*	'lower'	
		kē.kī		'east'
		kē.kiē		'eastern'
To.	516	*ki.*	'lower'	
		eṛk	'down'	'east'
Go.	2584	*siṛ*	'down', 'below'	
		siṛāyiṅ		'east'
Kol.	4016	*pallām*		'east'

Derivational History of the Direction Terms: Old Tamil Evidence

Old Tamil texts provide copious evidence for the use of cardinal direction terms and other general direction terms such as 'up', 'low', 'front', 'back', 'right', 'left', 'inside', 'outside', 'within', 'near', 'far' and so on. In the context of enumerating post-positions of the locative case markers, *Tolkāppiyam* (*Tol. Col:* 77) furnishes a list of such terms.

Tolkāppiyam and *Caṅkam* Tamil texts provide evidence to prove that the general direction terms for 'up/high' and 'low/down' provided the base for developing polysemous terms to connote the cardinal directions west and east respectively. Besides, this evidence also establishes that the general direction terms had a higher salience which was subsequently extended to connote the cardinal directions which had relatively lower salience.

While dealing with the concept of similes in poetry, *Tolkāppiyam* makes a general rule that the elements used as similes to highlight a 'quality' or an 'aspect' should be of 'higher salience and value'. However, the grammarian makes an exception to this, saying that at times, a matter of 'low value, salience or status' can also be used as a simile to serve the specific poetic requirement. In this context, *Tolkāppiyam* uses an expression *kiḻakkiṭum poruḷ (Tol. Poruḷ:* 276). If this expression has to be literally translated it should read as "matter of east". But, what the ancient extant Tamil grammarian meant was 'a matter of low value, low esteem' etc. *Perāciriyar,* the commentator to *Tolkāppiyam,* while explaining the above concept, cites the example of *Caṅkam* text (*Kuṟun:* 337.2) in which 'the sliding down of the tresses of a woman' is described as *kiḻakku vīḻntaṉavē* and elaborates further that '*kiḻakku'* means *kīḻ* (low). There are other references in *Caṅkam* texts to confirm this nexus as in *kiḻakku* 'lower place' (*Naṟ:* 297.l); 'down side' (*Patiṟ*: 36: l0). Thus, *Tolkāppiyam*, and *Caṅkam* texts at once establish the genesis of the cardinal direction term '*kiḻakku'* (east) from the high salient word '*kīḻ*' *(low).*

The author of *Cilappatikāram*, the first Tamil epic, talks about the two city gates of Maturai, the capital of ancient Pāṇṭiya dynasty. He uses the terms *kīḻtticai vāyil* ('eastern gate') and *mēṟṟicai vāyil* 'western gate' (*Cilap*: 23; l82-3) in the context of the lead

character Kaṇṇaki entering the city of Maturai through the eastern gate and exiting through the western gate to proceed to the territory of Cērās on the west. The Cērā territory on the west was situated on the higher elevation in comparison with the lower plains and coastal terrains of the Pāṇṭiyas.

In *Caṅkam* texts *mēkku* denotes the sense of 'higher elevation' (*Maturai*: 486); '(growing) upward' (*Naṟ:* 9l-6; *Akam:* 295-2l; *Kuṟun:* 26-2); '(spreading) upward' (*Akam:* l43-5); (raising) 'upward' (*Puṟam:* l43-2). The second Tamil epic *Maṇimēkalai* mentions of *teṉ mēṟku*, the south western direction, twice (*Maṇi:* 25:l54-5; 28:l75-6).

The fact that the terms *kiḻakku* and *mēkku* with their typical '*ku'* ending (which is characteristic of directional terms as in the case of *vaṭakku* meaning 'north' *teṟku* meaning 'south') are simply used in Caṅkam texts to denote 'low' and 'high' reveals that the sense of 'low' and 'high' was of greater salience and antiquity than the sense of 'east' and 'west'.

The issue of *kuṭakku* 'the west and *kuṇakku* 'the east'

DEDR: l649
Ta. *kuṭakku* 'west'; *kuṭakam, kuṭaku* 'Coorg region' (the high region on the west)

In early Tamil texts, *kuṭakku* and *kuṇakku* are the two most frequently used terms for connoting 'the west' and 'the east'. Examples:

> *kuṭa pulam kāvalar* (*Ciṟupāṇ:* 47) 'the ruler of the west land'; *kuṭakkāṟṟu (Perum:* 240) *'*west wind*'* ; *kuṭamalai (Paṭṭiṉap:* l88; *Malai:* 527) *'*the kudagu mountains on the west'; *kuṭa kaṭal (Puṟam:* l7:2, 3l:l3; *Maturai:* 7l) 'the western sea'; *kuṭavar* (*Paṭir:* 276) 'the rulers of the west'; *kuṭakkērpu* (*Naṟ:* l40:l l53:l) 'moving upward towards west'

Kudagu is a region situated in the Western Ghats. The Cērā kings were the rulers of this region and hence they were called *kuṭavar.* In the current context, the Koḍagu language speaking people of Koḍagu area (known as Coorg) are called Koḍava in Malayalam. In Tamil, *kuṭaku*, *kuṭa*kkam means, Coorg area and *kuṭakku* means 'west' because, *Kudagu* region is situated on the west.

Cecil Brown (1983: 138) lists use of '*environment specific features'* as one of the four lexical sources for encoding and naming the terms for cardinal directions. Even if we don't get into the etymological issue of why Kudagu was called so, the feasibility of the territorial name 'Kudagu' having contributed to the derivation of the term *kuṭakku* to denote 'the west' seems logical and viable. If so, it will perfectly fit in the encoding framework identified by Cecil Brown through his cross-language survey.

The fact that both the senses of 'west' as well as 'up', 'high' remain embedded in the term *kuṭakku* is established from the following usages in the *Caṅkam* texts.

kuṭakku vāṅku peruñciṉai (Naṟ: 167:1) 'the big branch of the tree that had grown high'

ñāyiṟu kuṭakku vāṅkum (Naṟ: 398:2) 'sun moved towards west'

Similarly, in *Caṅkam* text, the term *kuṇakku* has been frequently used to denote the cardinal direction 'east'.

kuṇapulam kāvalar (Ciṟupāṇ: 79) 'the ruler of the east land'

kuṇakaṭal (Maturai: 195) 'the eastern sea'

The etymological base of the term *kuṇakku* is not clear. Considering that the Dravidian languages have developed the terms for the cardinal directions 'east and west' on the basis of general direction terms such as 'low' and 'high' and taking cognizance of the fact that *kuṭakku*, the term for 'west' is probably based on the western uplands called *kuṭaku* and the term connotes both the sense of 'west' and 'up'; 'high' there is reasonable scope to anticipate that the word *kuṇakku* for 'east' could also connote the sense of 'low'. If, that possibility is assumed, one could think of the term *kuṇṭu* (DEDR: 1669) as an associated term which could throw some tentative light on the derivational history.

DEDR: 1669

Ta.kuṭṭam 'depth', 'pond'; *kuṭṭai* 'pool', 'small pond'; *kuṇṭam* 'deep cavity', 'pit', 'pool'; *kuṇṭu* 'depth', 'hollow', 'pond'

Ma. kuṇṭam, kuṇṭu 'what is hollow and deep', 'hole', 'pit'

Ka. kuṇḍa, koṇḍa, kuṇṭe 'pit', 'pool', 'pond'; *guṇḍa* 'hollowness', 'deepness'; *guṇḍi* 'hole', 'pit', 'hollow'; *guṇḍittu* 'that is deep'; *guṇpu* 'depth'

Kod. kuṇḍi 'pit'

Tu. kuṇḍa 'a pit'; *koṇḍa* 'pit', 'hole', *guṇḍi* 'abyss', 'gulf', 'great depth'

Te. kuṇṭa, guṇṭa 'pond', 'pit'; *kuṇḍu* 'cistern'; *gunta* 'pit', 'hollow', 'depression'

Pa. guṭṭa 'pool'

Go. kuṇṭa 'pool'
Kuwi. guntomi 'pit'

The above suggestion would explain the descriptions in Old Tamil texts about the 'clouds drawing waters from the eastern sea and moving up towards the western hills and pouring rains.' *(Maturai:* 238; *Nar:* l53) The meanings such as 'depth', 'deep cavity', 'pit', 'depression' 'deepness' etc., associated with the above term would testify the probable sense of 'low' connected to *kuṇakku* 'east' in the context of human geography of the Dravidian speakers.

It may be relevant to investigate the probable nexus between the root words *kuṇ-, kuṭ-, kuḷ-* and *kuḻ-* for all these roots lead to the derivation of words such as *kuṇṭu, kuṭṭai, kuḷam* and *kuḻi* all conveying a sense of 'depth' and 'pit'. Besides, the Kuvi term *kuna* which means 'root' 'edible root' 'tuber' (M. Israel l979: ll4) indicates the word association with a connotation of 'below' *'*underneath*'* etc., which would when compared with the Tamil word *'kiḻaṅku' (*esculent or bulbous root, as potato, yam, palmyra root (DEDR: l578)) which can be derived from *kīḻ* meaning 'underneath' makes a reasonable analogy.

Notwithstanding the lack of clarity with reference to the term *kuṭakku* and *kuṇakku* the weight of evidence available in languages of Dravidian family (in the form of *mēl-kīḻ* words) fairly establishes the 'High-West and Low-East' semantic orientation.

It is also important to take note that though the expression *kuṭakku* and *kuṇakku* are found in early literature and epigraphy; these words are not being used by the Dravidian speakers anywhere. Probably, these terms lost their relevance as the terms *mēl* and *mēṟku; kīḻ* and *kiḻakku* developed effective and functional polysemies to convey the sense of 'High-West' and 'Low-East.'

The issue of *paṭiññāṟu* to mean 'west'

Gundert (quoted in Caldwell l974: 20) uses the cardinal direction terms used in Tamil and Malayalam for 'east' and 'west' to build his arguments with reference to relationship between both the languages. He observes that the term *mēlku* 'west' also used in Malayalam, though *paṭiññāṟu*, properly *paṭiññāyiṟu* meaning 'setting sun' is more commonly used. He admits, as quoted by Caldwell that both *mēlku* and *kiḻakku* must

have originated in the Tamil country. Whatever the case maybe, it is obvious that Malayalam language has developed the term *paṭiññāṟu* following the Brown's criteria of 'celestial bodies and events'.

The metaphorical extensions of 'High-West: Low-East' Polysemies

Polysemy offers a creative scope, as McCarthy (l994: 25) says, for the "metaphorical extensions" of the central meaning of core words. The polysemous boundaries of 'High-West: Low-East' prototypes in Dravidian languages have expanded over a period of time, probably, in order to represent some of the aspects of socio economic ideas and understandings. The process of metaphorically expanding the meaning of 'low' and 'low side' and 'high' and 'up' to give socio-economic connotations is evident in *Caṅkam* period itself. The term *mēṟpāl* refers to 'high segment of people' and *kīḻppāl* refers to 'low segment of people' in terms of social stratification (*Puṟam*.l83). The term *kīḻōr* refers to 'cultivators of low wet lands' (*Pari:* l7-40) and *kīḻmaṭai* (*Puṟam*: 42-l3) refers to the tail-end area irrigated by channel. The 'world after valiant death' is called '*mēlōr ulakam*' meaning, 'the world of high people' (*Puṟam*: 229:22; 240:5-6; *Pari*: l7-8). To track these extensions, a scrutiny of Tamil epigraphic, literary and lexical sources, will be in order (See Annexure-I on p. 55).

These extensions show that the 'High-West: Low-East' prototypes have a deep rooted salience in the culture of Tamils since ancient times and have decisively influenced the above lexical items. The role of human geography in shaping these prototypes can be better understood through the case study of how the *mī > mīyāṭchi> mīnīr ; mēl > mēnīr > mēlvāram > mēl pāti and kīḻ > kīḻnīr > kīḻvāram > kīḻpāti* equation woks perfectly on the ground.

The farmers in the Cauvery Delta areas are familiar with the parallel terms such as *mēlnīr- kīḻnīr; mēlvāram- kīḻvāram, mēlpāti- kīḻpāti,* etc. When an absentee landlord gives his farm land on share crop-tenancy to a person who actually cultivates the land, the upper part of the land-holding, the yield from which accrues to the landlord, is variedly called *mēlvāram* ('upper side yield') or *mēlpati* ('upper half'); the tiller's share is called *kīḻvāram* ('lower side yield') or *kīḻpati* ('lower half'). The flow of Cauvery River water / canal water in the delta follows a general north- western - south- eastern gradient.

Hence, the water naturally first flows to the upper parts of the land holding (which mostly falls on the west) first and then to the lower ends (which mostly falls on the east). In case of scarcity, the upper part of the land is first irrigated and, in case of overflow, flooding and consequential damage will be more in the tail end. In a stratified traditional social milieu, land ownership and associated rights form the basis for socio-economic relationships. Hence, it is not a simple case of 'High-West: Low-East' geographical equation -but, as well makes a good economic, sociological and psychological sense. Besides, it facilitates the metaphorical extension of the *mēl-kīḻ* terms to mark the social differentiations as well.

It is surprising that, this tendency to develop such extensions is not only marked in the major Dravidian languages such as Tamil, Kannada, Telugu and Malayalam spoken by the communities with elaborate social structures but also in the languages spoken by Dravidian tribes as well. In Kuruk, the expressions *kiyyantā* and *kītānta* (DEDR: 1619) denote 'lower rank' and 'low-born' respectively. In Tulu, the expression *kīlmēlu* (DEDR: 1619) does not merely denote 'upside down' but 'inferior-superior' as well.

Part III

Derivational History of terms for Cardinal Directions in Indo-European Languages

Carl D. Buck (1949: 870) reports that majority of words for the cardinal directions in Indo- European languages are based either on the position of sun at a given time of day or one's orientation. The orientation among the Indo-European-speaking peoples was usually the sunrise ('in front' = 'east'; 'behind' = 'west'; 'right' = 'south'; 'left' = 'north'), he further observed. Cecil Brown (1983: 122) who states that the derivational histories of terms for cardinal points in Indo-European languages are for the most part very transparent, reflected by either polysemy or literal translation observes an apparent regularity, on a worldwide basis, involving 'east and west and front and back.' Brown (1983: 136) finds out that 'east' is associated with 'front' ('front', 'in front of', 'front part') four times and only once with 'back' and that conversely 'west' is always associated with 'back' ('behind', 'in back of', 'back part') and not at all with 'front'.

The 'Front- East: Behind-West' Framework in Indo-Aryan: Anthropo-centric

The development of terms for cardinal directions in Indo-Aryan follow the characteristic 'Front-East: Behind-West' framework of the Indo-European.

CDIAL: 8343, 8346

Skt. *pūrva* 'fore', 'first', 'eastern', 'ancient'; *pūrvārdhá* 'eastern side'
Pali. *pubba*, *pubbaka* 'former', 'ancient'
Pkt. *puvva* 'former', *puvvā* 'the east'
Ass. Beng. *pub* 'the east'
Or. *pūbā* 'eastern'
Mar. *pūb* 'the east'; *pūbā* 'an easterner'
Kas. *pūru* 'the east'
Panj. *puādh, povādh* 'eastern part of a district'

CDIAL: 8920, 8922, 8925

Skt. *prācīna* 'facing front, east'; *prācyà* 'being before, eastern'; *práñc* 'directed forward', 'eastern' ; Pali. *pācīna* 'eastern'

CDIAL: 8006

Skt. *paścārdhá* 'western side'; 'hinder part'
Pkt. *pacchaddha* 'back part'

CDIAL: 8007

Skt. *paścimá* 'later', 'hinder', 'western'
Pali. *pacchima* 'western', 'last'
Pkt. *pacchima* 'hinder', 'western'
Kas. *pachyum* 'the west'
Panj. *pachvā* 'western'
Sgh. *päsum* 'last', 'west'

CDIAL: 9655

Skt. *bhraṣṭá* 'fallen', 'ruined'
Pkt. *bhaṭṭha* 'fallen', 'destroyed'
Ass. *bhāṭi* 'lower part of stream', 'western part' , 'western'
Sgh. *baṭa* 'descended', 'sunk', 'descent', 'the west'

MW:102

Skt. *ávara* 'posterior', 'hinder', 'below', 'inferior', 'western'

MW: 50

Skt. *ápara* 'posterior', 'inferior', 'lower', 'western', 'west', 'in the west of'; *áparajana* ' inhabitants of the west'; *aparânta* 'living at the western border', 'the western extremity', 'death'

MW: 565

Skt. *nīcya* 'living below', 'name of certain nations in the west'

'Celestial bodies and events'

CDIAL: 973

Skt. *ásta* 'setting' (of sun)
Pkt. *attha* 'place of sunset'
Sgh. *ata* 'sunset', 'west'

CDIAL: 975

Skt. *astamāyana* 'setting' (of sun)
Guj. *āthamṇũ* 'western'

Panj. *āthuṇ* 'the west'

H. *athamnā* 'sunset', 'the west'

There are evidence to hold that the 'Front- East: Behind-West' polysemous framework in Indo-Aryan languages is extended to incorporate the aspects of social hierarchies. (See Table 3)

Table 3 : **Indo-Aryan Framework**

Language/ CDIAL/MW	Polysemous Term	Referent 1 "Front"	Referent 2 "East"	Extensions
CDIAL: 8343, 8346 / MW:643	*pūrvā*	'fore', 'situated in the front'	'east'	'ancient', 'old', 'ancestor','forefather'
CDIAL:8920, 8922, 8925 / MW:643, 651	*prāc , prācīna, prācya,*	'being in the front', 'facing', 'turned towards the front'	'eastern', 'easterly'	'previous', 'former' 'ancient' , 'to advance' 'promote'
	paurastya,	'situated in the 'front'	'eastern', 'people in the east'	
	pūrvaja	'former', 'ancient', 'primeval', 'ancestor'	'eastern' , 'born in the east'	'the deified progenitors of mankind'
	pūrvadikpati		'regent of the eastern quarter'	name of Indra
MW: 50	*ápara*	'posterior', 'later'	'west', 'western',	'inferior', 'lower'
	aparânta		'living at the western border'	'death'
MW:102	*ávara*	'posterior', 'below'	'western'	'inferior', 'low', 'mean', 'unimportant', 'the least', 'the lowest degree'

Language/ CDIAL/MW	Polysemous Term	Referent 1 "Front"	Referent 2 "East"	Extensions
CDIAL:8009	*paśca*	'hinder', 'later'	'western'	
	paścimā			
MW: 675	*pratīcya*		'the west' , 'western country'	'a designation of anything remote or concealed'
CDIAL: 9655	*bhāṭi*		'western part'	'lower part of stream'
	baṭa		'the west'	'sunk' , 'descent'
MW: 565	*nīcya*	'living below'	name of certain nations in the west	

There are expressions in Sanskrit to establish that the process of developing terms to indicate social differentiations follows an anthropocentric approach. For example, the term *varṇa* (from *varṇ*, colour) means 'outward appearance', 'exterior', 'colour of the face', 'class of men', 'tribe', 'order', 'caste'; *varṇatva* means 'the state of colour', 'the state of caste' (MW:924) ; *caturvarṇa* denotes 'the four castes' which also means 'four principal colours' (MW:385). Similarly, the social differentiation in terms of castes and tribes also follow a 'front', 'behind' approach. This is evident from the term *antyaja (*from *antya* meaning 'last in place/order') to mean 'of the lowest caste', 'a man of one of seven inferior tribes which includes mountaineers' (MW:44). This is in contrast with the term *pūrvaja* which means 'born in the east', 'eastern', 'former', 'an ancestor', 'the deified progenitors of mankind' (MW:643). The term *ávara* means 'western', 'low', 'unimportant', 'small value' and the derivative term *ávaravarṇa* means 'belonging to a low caste' (MW:l02).

Thus it is evident that in the Indo-Aryan languages, the 'Front-East: Behind West' framework has not only influenced the lexical encoding and naming of the cardinal direction terms for the 'east' and the 'west' but also the process of developing social terms.

Part IV

Human Geographies: Where 'High' is 'West' and 'Low' is 'East'

Before discussing the details of the Dravidian and the Indo-Aryan lexical encoding frameworks in comparative terms in the specific context of DEMS matrix of the dichotomous layouts of the Indus cities and making an implication analysis, I identify the human geography as the factor that could have influenced the sociology of urban space in the Indus context as well the process of lexical encoding of cardinal direction terms in the 'unknown' language of the Indus people. Similarly, I propose that the influence of the human geography can be traced more prominently in the lexical encoding of cardinal direction terms in the Dravidian languages that follow a 'topo-centric' approach. Taking due cognizance of the fact that the 'High-West: Low-East' framework of Dravidian languages show a *prima-facie* affinity to the 'High-West: Low-East' dichotomy of the Indus layouts I identify some salient features of the Indus Human Geography and Indus urban settlements and demonstrate how such elements are traceable in the historic as well the current Toponomy of Dravidian speaking populations and in the aspects of their contemporary human geographies.

Dravidian Namescapes

Tamilnadu has 15979 Census Villages and 1098 Census Towns (as per 2011 Census) and thus we have a total of 17077 Census Toponyms in the State. Of these, there are as many as 312 place names with *mēl* ('west' and/or 'up') as prefix and 328 place names with *kīḻ* ('east' and/ or 'low'), spelt in Roman alphabets as 'Kil' (206) or 'Keel' (117) or 'Kizh' (5), as prefixes. Out of these, I found 168 dichotomous pairs like in Melkaranai: Kilkkaranai; Melmanavur: Kilmanavur etc., with unique coordinates. As seen earlier, in Tamil, *mēl* means 'west' and/or 'high'; *kīḻ* means 'east' and/or 'low'. I was curious to know whether these polysemies have any relevance on the ground. In other words, I was keen to find out whether *mēl* villages as indicated by their names are really on the 'west' of the corresponding *kīḻ* villages which are expected to be on the 'east' and to what extent these 'west', 'east' villages meet the elevation criteria of 'up' and 'low' in relative terms. The findings are in Table 4. (Also see 'A Note on GIS' at the end of this paper, p.54 and

Annexure-2 on p.58 which contains more details of l68 pairs of places with dichotomous place names.)

Table 4. ***mēl- kīḻ*** **villages: True to the Name.**

Location Condition of '*mēl*' villages with reference to corresponding '*kīḻ*' villages	**Number of occurrences**
Total number of *mēl - kīḻ* dichotomous place name pairs in Tamilnadu with unique geo-coordinates	**168**
No. of pairs in which *mēl* village to the west of corresponding *kīḻ* village and at a higher elevation (i.e meeting both the criteria: 'direction' and 'elevation')	**121**
No. of pairs in which *mēl* village to the west of corresponding *kīḻ* village, but at a lower elevation (meeting only one criteria i.e. direction)	**30**
No. of pairs in which the *mēl* village to the east corresponding *kīḻ* village and at a higher elevation (meeting only one criteria, i.e. elevation)	**7**
No. of pairs in which the *mēl* village is to the east of corresponding *kīḻ* village and at a lower elevation and (failing to meet both the criteria i.e. direction and elevation)	**10**

The reason for this impressive compliance is obvious. The Western Ghats dominate the entire western border of Tamilnadu with Kerala and the eastern parts are the coastal plains. Consequently, there is a clear north-west: south-east topographic gradient. In terms of numbers, we find the occurrence of such west: east dichotomous villages more in the eastern plains than in the western hills indicative of general settlement density and its trajectories. It is interesting to note that the 'High-West: Low-East' pattern is maintained from hill tops to the coastal rims. And, this case study clearly proves the influence the aspects of human geography can have on the pattern of human settlements and on the process of naming places.

It is relevant to know that in the process of giving place names in terms of polysemous pairs (*mēl: kīḻ*) the popular direction terms *kiḻakku* (east) and *mēṟku* (west) are not at all used. In Tamilnadu, there is only one place name with *mēṟku* as prefix i.e 'Merkupathi' whereas there is no place named 'Kilakkupathi' to make it a dichotomous pair. Similarly, there are two places namely, 'Kilakku Marudur' (Viluppuram district) and 'Kilakkuchettipatti' (Dindigul district) without corresponding *mēṟku* (west) villages. On the contrary, the polysemous terms *Mēl* and *Kīḻ* (written as 'Kil' or 'Kizh' or 'Keel' in the census records) are used in all the cases of dichotomous place names. Because, the use of terms such as *mēṟku* and *kiḻakku* will not bring out clearly, the sense of polysemy, in terms of 'up, high' and 'west' : 'low and east' and only the sense of direction will become prominent.

'up' , consequently the 'west', had a greater salience in the Dravidian Milieu

The 'west' enjoys greater salience in the Dravidian milieu. Cērā kings who ruled Western Ghats were called *kuṭavar kō* meaning 'the lord of the people of western region' (*Patiṟ:* 55). In Kui, the language of Khonds, the name of the tribe, as well the name of the language is derived from the word *Kui* which means not only 'the hill' but also 'the west'. (DEDR: 2178) *Murukan*, the *numero uno* God of Tamils, is a hill-god. His temples are located mostly on hill-tops.

'East-West' Toponyms in other parts of India

Apart from the case study of *mēl-kīḻ* villages the geographical distribution of place names with 'east', 'west' prefixes in other parts of India provide an interesting insight. There are 205 census location names in India, with *pūrba* (east) as prefix and 4 location names with *pūrva* (east) as prefix. What is surprising is that these names are mostly concentrated in West Bengal and Assam and Odisha and fewer instances in other states (West Bengal 169, Assam 20, Bihar 6, Odisha 5, Uttar Pradesh 3 and Punjab 1). Same is the case with the places named with *paścim* (west) as prefix. Of the 317 such place names, as many as 277 are found in West Bengal; 19 in Assam, 12 in Uttar Pradesh, 7 in Odisha and one each in Chattisgarh and Andaman & Nicobar Islands.

Part V

The Toponomy of Hill Settlements

The Dravidian 'Hill Pride'

Dravidians essentially are the people of hills. Kamil Zvelebil calls them 'a highlander folk' and locates them 'sitting, sometimes round 4000 B.C in the rugged mountainous areas of North-Eastern Iran'… and estimates their 'important even a leading role in the ethnolinguistic composition of the Indus Valley peoples.' (Zvelebil 1972: 57)

There are numerous Dravidian tribes in India, whose ethnonyms are indicative of their hill-centric human geography. *Mal Paharia* (Rajmahal Hills, Jharkhand); *Mala Arayan* (Western Ghats, Kerala); *Mala Kuravan* (Nedumangad, Kerala); *Mala Muthan* (Ernad, Kerala); *Mala Pandaram* (Kollam, Kerala); *Mala Panikkar* (North Kerala); *Mala Pulaya, Mala Ullada,* and *Mala Veda* (Idukki, Kerala); *Malasar* (Western Ghats, Kerala, Tamilandu); *Malayalar* (Kannur, Kerala); *Malayan* (Palghat, Kerala), *Maleru* (Dakshina Kannada, Karnataka) and so on. Besides, the tribe names such *Kota* (Nilgiris); *Konda Dora, Konda Reddi* (Andhra Pradesh); *Khond, Koiter* (Odisha) are also indicative of Dravidian hill life.

An element of hill-pride is evident in the ethnonyms and myths of some of the Dravidian tribes. The ethnonyms such as *Mala Arayan, Konda Dora* literally mean 'the king of hills'. Malai Malasar ('Malasar of the hills') take immense pride in their hill-identity and call themselves 'Maha Malasar' i.e 'superior Malasar' and do not intermarry with other sub groups like 'Nattu Malasar' ('country-Malasar'). Mala Muthans ('elders of the hills') consider themselves as a very superior people and prefer to live in isolation. They practice untouchability with all communities below the rank of Nayars; even the Nambudiris and the Nayars are not allowed to enter their houses. (EDT Vol II: 207) The Headman of the Toṭṭiya caste is called *mēṭṭu-nāyakkaṉ* (Thurston 1975: 185). The expression *mēṭṭu-nāyakkaṉ* would literally mean *'nāyakkaṉ* of the elevated land'. Old Tamil traditions and texts portray the *kaṭaiyeḻu vaḷḷalkaḷ* (the last of the seven (lines of) Great Patrons) as the chieftains of specific hills.

Hill Settlements

The settlement patterns of different Dravidian hill tribes provide insight into the social, spiritual aspects of their hill life. These tribes generally tend to settle on the slopes or terraces of hill sides, near a perennial stream or river, above the high water mark. (EDT Vol I: l04) They prefer to use running water for drinking and tap it upstream of their settlements from one of the jungle rivulets. Locating the settlement above the high water mark is obviously a flood protection measure. But, the 'tapping drinking water from upstream', apart from the convenience, has other connotations. 'Drinking the water untouched by others' has symbolic relevance.

High mountains and their towering peaks have their influence on the lay-outs of hill habitats of Dravidian tribes. Among the Attapady tribes (Waynad, Kerala), all traditional hamlets are located in such a way that they command a view of the needle-shaped Malleswaram Peak. Toda settlements (in the Nilgiris) are associated with their sacred geography and rich mythological traditions; their sacred dairies are surrounded by high walls and preferably have separate water supply. Platforms are integral part of the house designs of Todas. The Kurumba term *mettu* to denote veranda is indicative of its 'elevation'. At Attapady, the headman's house dominates the top of the rows (EDT Vol I. l06). Jatapu villages are situated in the foot-hills, one- third of them fully on hill tops. In the Irula house, a platform attached to the rear wall accommodates light and incense for the household deities.

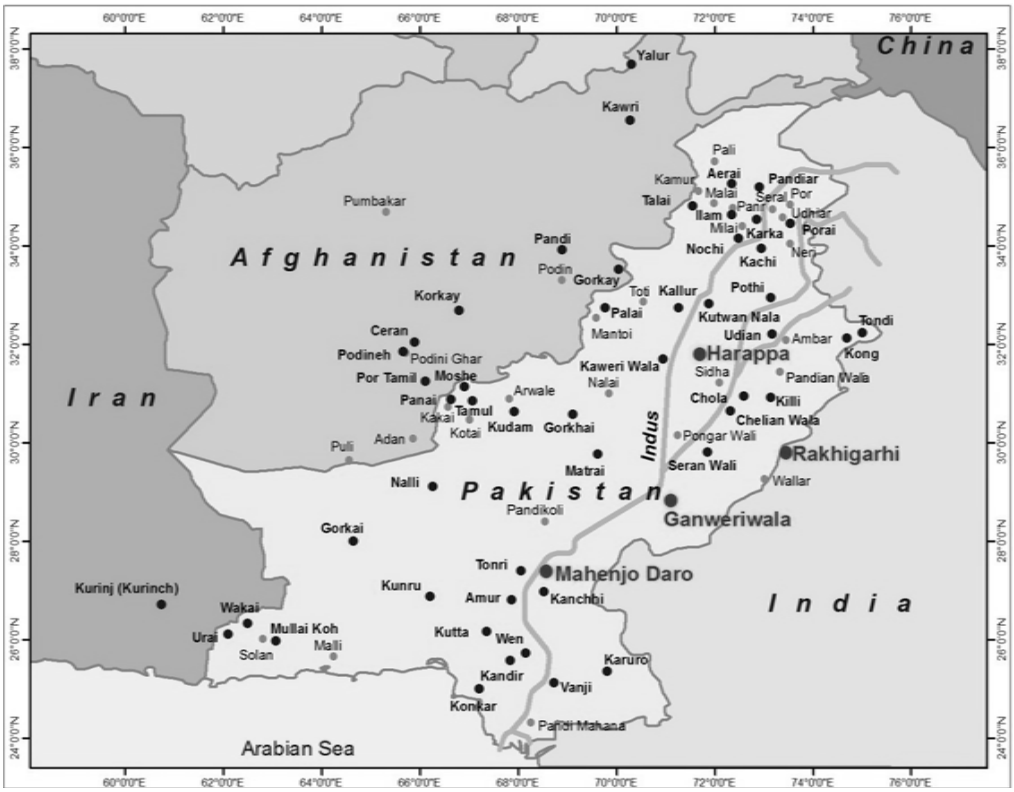
Thus, a quick inventory of the habitats of the Dravidian hill tribes shows that 'mountains, hill-tops and hills' have a greater salience in the social life of the tribes and influence the layouts and orientation of their habitats; that the concepts such as 'elevated platforms', 'walls', 'drinking water from the upstream', 'headman's house at top', indicate the symbolic extension of the imagery of hills to represent social stratifications.

In the context of tracing the genesis of 'High-West: Low-East' dichotomy of the Indus layouts, the above inputs on the 'hill-pride' of the Dravidian tribes offer an analogy. We may recall at this point, Wright's view on 'a symbolic connection between the Kirthar Mountain and the founding platforms' at Mohenjodaro and the influence of the visible natural elements of the Kirthar Mountain on the layouts of the Indus cities.

Importance of Place Name evidence

Onomastics has gained greater relevance in the context of Indus studies. Parpola considers that "Harappan Place Names could provide potential clue to the identification of Harappan language" and presents the place name Meluhha as "the most important single piece of actual linguistic evidence relating to the Indus Civilization..." (Parpola 2000: 170).

The substratum of Dravidian place names in Gujarat and Maharashtra (Allchin 1982: 352; Southworth 2005: 288-321, Sankalia quoted in Southworth 1995: 271) provides evidence for the earlier Dravidian presence in the western regions. This author, in his earlier paper (Balakrishnan 2010), has furnished evidence for "Korkay, Vanji, Tondi Complex" (KVT Complex) in the toponomic corpuses of north-western geographies which contain perfect parallels to "Koṟkai,Vañci,Toṇṭi" and numerous other geographical names exclusively connected to Old Tamil polity, ethnonyms and anthroponyms attested in *Caṅkam* Tamil texts. (Map 2)



Map 2. "Korkay, Vanji, Tondi Complex"

This map was presented by the author as part of "Professor Malcom Adiseshiah memorial Lecture" at International Institute of Tamil Studies, Chennai on 04.02.2011

Considering that these names are unknown to Indo-Aryan traditions, this author is of the opinion that the 'KVT Complex' that has survived in the toponomic corpuses of the north western geographies stands witness to a Dravidian past in the region and the use of such place names in the ancient Tamil county and their attestations in Old Tamil texts represent the 'carried forward' traditions and continuity from the Indus past.

'Dravidian Hills' in North-Western Geographies

There are toponomic evidences to situate the Dravidians and their 'hill-pride' at the heights of impressive mountains of Pakistan and Afghanistan (See Table 5 and Map 3). It would be relevant to recall that the Sanskrit word *malaya* is compared with the Dravidian word *malai* (DEDR: 4742) which could be indicative of a Dravidian substratum in Sanskrit. Besides, *malaya* in Sanskrit is used mostly with reference to 'a mountain range on the west of Malabar, the western Ghats'; and a king of the Pāṇṭiyas is called '*malaya dhvaja'* (MW:792).

Table 5. **Dravidian 'hill'-terms as place names in Pakistan and Afghanistan**

Dravidian Term	Language	DEDR No.	Place Name	Country	Latitude	Longitude	Elevation in feet above MSL
malai	Ta.	4742	Malai	Pakistan	34.86722	71.99250	4777
			Malai	Pakistan	30.84583	67.32083	6386
			Malai	Pakistan	30.56583	67.55722	7902
			Malai	Afghanistan	29.71528	64.84194	3908
mash	Br.		Mash	Afghanistan	34.28333	66.56667	10662
			Masha	Pakistan	31.23056	66.90556	5780
kuṉṟu	Ta.	1864	Kunru	Pakistan	26.875	66.2044	6263
			Kunro	Pakistan	26.3833	68.15	110
			Kunro	Pakistan	25.96667	68.76667	73
kōṭu	Ta.	2049	Kodu	Afghanistan	34.75444	71.03889	2526
kōṭai	Ta.	2049	Koday	Afghanistan	33.95000	68.45000	8810
			Koday	Afghanistan	33.75000	68.33333	7951
			Koday	Afghanistan	34.01667	68.71667	6934

Dravidian Term	Language	DEDR No.	Place Name	Country	Latitude	Longitude	Elevation in feet above MSL
varai	Ta.	5274	Warai	Pakistan	34.5961l	7l.62556	2493
			Warai	Pakistan	35.0l667	72.03333	3687
			Warai	Pakistan	34.2l389	72.00000	l033
			Warai	Pakistan	30.3l389	67.3l528	8837
			Warai	Pakistan	24.26667	67.99l67	l0
			Warai	Pakistan	34.58472	73.05556	4253
			Warai	Pakistan	24.25000	68.0l667	l0
poṛai	Ta.	4567	Porai	Pakistan	34.62222	73.00278	4068
mōḍu	Tu.	4888	Modu	Afghanistan	34.l0000	68.60000	7502
			Modu	Afghanistan	35.32l39	7l.55l94	3964
guḍḍi	Te.	l682	Guddi	Pakistan	34.62222	73.40833	4l93
guḍḍu	Ka.	l682	Guddu	Pakistan	28.50000	69.95000	263
			Guddunad	Pakistan	28.50000	69.95000	263

It is relevant to note that in Tamil, *malai* means 'mountain', 'hill' while *kuṉṟu* denotes 'hillock'. It is interesting to note that in the northwestern region, the toponym 'Malai' is used for mountainous locations of high elevations while the toponyms 'Kunro' and 'Kunru' are used for spots with relatively low altitude. Similarly, in Tamil, the expression *varai* denotes 'line', 'mountain', 'peak', 'ridge', 'bank', 'shore', 'limit', 'boundary', 'edge', 'border', 'rim', etc (TL.6: 3525). In the expressions *'nuṉi mutal aṭi varai'* ('from the upper edge to lower edge') and *'aṭi mutal nuṉi varai'* ('from the lower end to the upper edge') the term *varai* is used to denote 'edge' at either end. Incidentally, in the toponomic

Map 3. 'Dravidian Hills' in the North-West

corpus of Pakistan we come across 'Warai' as toponyms at the height of 8837, 4253, 3687 feet (mountainous region) and at l0 feet (coastal edge) above MSL representing the extreme ends of the specific geography of north western parts of the Indian sub-continent.

Dravidian hill- terms as Place Names in North, West and East Indian States

Dravidian hill-terms are used as toponyms in various parts of India. The geographical distribution of such place names offers curious insight (Table 6 & 7).

Table 6. **Dravidian hill-terms in Indian States**

Dravidian Term for 'Hill' / 'mountain'	DEDR	Place Name	State Name	District
malai	4742	Malai	Uttaranchal	Chamoli
		Malai	Uttaranchal	Garhwal
		Malai	Gujarat	Kheda
		Malai	Jharkhand	Gumla
		Malai	Maharashtra	Sindhudurg
		Malai	Uttar Pradesh	Jaunpur
		Malai	Uttar Pradesh	Jaunpur
		Malai	Haryana	Faridabad
varai	5274	Varai	Gujarat	Valsad
		Varai	Maharastra	Thane
		Warai	Maharastra	Thane
		Warai	Himachal Pradesh	Kangra
guḍḍa	l682	Gudda	Himachal Pradesh	Chamba
		Gudda	Madhya Pradesh	Shivpuri
		Guddi	Rajasthan	Jaisalmer
		Guddi	Bihar	Bhagalpur

Table 7. **'Mala' as Mono word Place Name in India**

Dravidian Term for 'Hill' / 'mountain'	DEDR	Place Name	State Name	District
Mala	4742	Mala	Punjab	Jalandhar
		Mala	Rajasthan	Ajmer
		Mala	Uttaranchal	Almora
		Mala	West Bengal	Birbhum

Dravidian Term for 'Hill' / 'mountain'	DEDR	Place Name	State Name	District
		Mala	Jammu & Kashmir	Jammu
		Mala	Bihar	Purnia
		Mala	Karnataka	Udupi
		Mala	Maharashtra	Satara
		Mala	Maharashtra	Sindhudurg
		Mala	Madhya Pradesh	Damoh
		Mala	Madhya Pradesh	Rewa
		Mala	Madhya Pradesh	Umaria
		Mala	Madhya Pradesh	Vidisha
		Mala	Madhya Pradesh	Vidisha
		Mala	Madhya Pradesh	Raisen
		Mala	Orissa	Baleshwar
		Mala	Uttar Pradesh	Pilibhit
		Mala	Uttar Pradesh	Pilibhit
		Mala	Uttar Pradesh	Pilibhit
		Mala	Uttar Pradesh	Pilibhit

Preponderance of 'Malai' as Place Names of Southern India

There are 84 places in Tamilnadu with 'Malai' suffixed place names. 'Malai' occurs as a prefix in l7 instances in the state. In Andhra Pradesh, there are 65 'Mala' suffixed place names. In Karnataka, 'Malai' as suffix occurs only once (Dhoni Malai) whereas 'Male' occurs as suffix in l5 instances. In Kerala, there are l0 'malai' suffixed place names. Interestingly, 'Malai' / 'Mala' / 'Male' does not occur as mono-word place names in Tamilnadu, Andhra Pradesh, Karnataka or Kerala.

The presence of many terms from the 'hill-glossary' of Dravidians in the Toponomic corpus of north and western states of India and the absence of mono-word place names in the corpus of south India indicate the antiquity of the usage of the term in north and western region and by implication stand witness to the probable earlier presence of Dravidian speakers in those geographies and their subsequent migrations towards southern regions.

Part VI

The Toponomy of 'Fort' Settlements

Most of the Harappan settlements were fortified. The 'antecedents' for the Harappan fortifications have been identified at Mehrgarh in Baluchistan. Parpola refers to settlement names of Dravidian origin in the Harappan area and considers the word *kōṭṭa* 'fort' (generally considered to be of Dravidian origin) to be of 'particular interest' because its distribution in North India is "mainly limited to the Harappan area and the northwest." (Parpola 2000: 170).

In the northwest (modern Pakistan, Afghanistan and the Eastern borderlands of Iran) as well as in various states of India, we come across different 'fort' terms such as 'Kot', 'Kota', 'Kottai' and 'Durga' being used as place names. Apart from 611 locations with place names having 'kot' as suffix, Pakistan is home to as many as 45 places named as 'Kot' (as a mono-word place name). The coordinates of the places having 'kot' as a mono-word place name in Pakistan, Afghanistan and Iran are given in Annexure-III at p.66.

Within India, the frequency of occurrence of 'kot' as a mono-word place name and its use as a toponomic suffix is found more in the northern and north-western states such as Uttaranchal, Punjab and Uttar Pradesh. The southern states also have a significant number of place names with suffixes such as 'Kot', 'Kota' and 'Kottai.' Of these, 'Kottai' is in the exclusive domain of Tamilnadu for all the 248 place names in India, with 'Kottai' as suffix are found in that State.

Even in the use of the Indo-Aryan word *Durgá* ('stronghold', 'citadel', 'fort') as a place name suffix, the southern region takes the lead. Out of 59 such place names as many as 35 occur in Karnataka (See Table 8).

Table 8

'Fort' Place Name	Occurrences in/ Frequency
'Kot' as mono-word	Pakistan - 45, Afghanistan - 4, Iran - 1
	India 64: (Uttar Pradesh - 18, Uttaranchal - 15, Chhattisgarh - 7, Rajasthan - 6, Madhya Pradesh - 5, Punjab - 3, Jammu & Kashmir - 3, Gujarat - 2, Maharashtra - 2 Odisha - 1, Karnataka - 1, West Bengal - 1)
'Kot' as suffix	Pakistan - 611, Afghanistan - 132, Iran - 2
	India 842: (Uttaranchal - 316; Uttar Pradesh - 100, Punjab - 87, Chhattisgarh - 48, Gujarat - 31, Madhya Pradesh - 31, Maharashtra - 34, Manipur - 40, Odisha - 44, Rajasthan - 25, West Bengal - 9, Karnataka - 6, Jharkhand - 6, Andhra Pradesh - 1, Assam - 2, Nagaland - 2, Bihar - 1)
'Kota' as mono-word	Pakistan 3, Afghanistan 5
	India 91: (Uttar Pradesh - 24, Madhya Pradesh - 17, Uttaranchal 1 - 6, Andhra Pradesh - 6, Rajasthan - 5, Jharkhand - 5, Chhattisgarh - 5, Bihar - 4, West Bengal - 3, Gujarat - 2, Odisha - 2, Karnataka - 1)
'Kota' as suffix	Pakistan 6, Afghanistan 14
	India 345: (Andhra Pradesh - 174, Uttar Pradesh - 34, Odisha - 43, Madhya Pradesh - 27, Uttaranchal - 11, West Bengal - 12, Rajasthan - 7, Jharkhand - 7, Gujarat - 9, Chhattisgarh - 3, Karnataka - 7, Bihar - 3, Madhya Pradesh - 4, Arunachal Pradesh - 2, Assam - 2)
'Kottai' as suffix	India 248: (Tamilnadu - 248, Others - Nil)
'Durga' as suffix	India 59: (Karnataka - 35, Uttar Pradesh - 10, Maharastra - 4, West Bengal - 4, Odisha - 3, Rajasthan - 2, Jammu & Kashmir - 1)

Part VII

The Comparative Frameworks of Indus, Dravidian and Indo-Aryan

A comparative analysis of the DEMS indicators of the Indus cities with reference to the lexical encoding frameworks in the Dravidian and the Indo Aryan languages give a clear impression that the underlying principles of Indus urbanism evident in the form of dichotomous layouts, management of urban space, segregated neighborhoods, fortifications and primacy of 'high mounds' and 'platforms' are more akin to the Dravidian socio-cultural and linguistic scheme (Table 9.l, 9.2, 9.3 and 9.4).

Table 9.l DEMS Criteria: **D**irection

Indicators • Relative salience of cardinal directions 'east' and 'west' • Marked by higher salience of the 'west'		
Indus	**Dravidian**	**Indo-Aryan**
• 'Citadel' on the west or westerly part and 'Lower Town' on the east, or towards the east • Preference for the west	• *mēkku* 'west', 'up', 'superiority' • *kīḻ* 'east', 'inferior' • *mēṟtalai* 'western side' (literally mean 'western head' or 'up head') • *kīḻkkaṭai* 'eastern side' (literally mean 'low end') *kiḻakkiṭum poruḷ* 'a matter of low value'	• *apara, ávara* 'west', 'inferior', 'low', 'unimportant' , 'the least' 'lowest degree' • *prāc , prācīna-* 'being in the front', 'eastern', 'to advance', 'promote'

Table 9.2 DEMS Criteria: **E**levation

Indicators • Orientation towards 'hills', 'height', 'elevation' with reference to 'west'.		
Indus	**Dravidian**	**Indo-Aryan**
• Situation of 'Citadel', 'Upper Town' on high mounds', 'mud brick platforms'	• 'Hill People' with hill -centric ethnonyms.	• Mountaineers counted as an inferior tribe Skt. *antyaja* 'a man of one of seven inferior tribes'

• Higher elevation of Citadel was maintained with high mountains to the west showing a generic west-east gradient • Probable inspiration / influence of human geography- Kirtar Mountains, Sulaiman Hills, carried forward memories of a distant past in hilly terrains and their 'west-east' gradients	• Dravidian prehistoric chieftains, (the last of the seven (lines of) Great Patrons) of Old Tamil traditions were hill based • Prolificacy of 'hill toponyms' in the current Dravidian geographies • Remnants of Dravidian 'hill-terms' in the toponyms at high altitudes of north-western geographies • In the Western Ghats tribal headman's house on the top row of the hill side village. Layout of tribal villages oriented to keep the mountain peak in view • Platform symbolism in tribal houses (sleeping place, reception, deity)	• *nīcya* is 'living below' and also the name of a nation on the west • *bhāṭi* (Assamese) means western side and lower part of a stream • *pratīcya* 'west' also a designation for anything remote or concealed

Table 9.3 DEMS Criteria: Material

Indicators ▪ Manifestation / perception of importance in terms of 'High-West: Low-East' polysemous framework.		
Indus	**Dravidian**	**Indo-Aryan**
• Large, non-residential buildings, Citadel, Bailey, Castle, Great Bath, Granary, impressive walls, better drainage in western, elevated parts	• Land owner's share of the crop, and his part of field (with reference to tenant's part) are called *mēlvāram* and *mēṛpāti* ('up', 'west side') which gets water first in case of scarcity and recedes first in case of flood showing the preference • Tapping of drinking water from upstream which has practical as well symbolic connotations. (Western Ghats tribal settlements) • Prolificacy of 'fort' toponyms in the Dravidian speaking areas and the probable Dravidian etymology of *kot* and the abundance of such toponyms in the Indus region	• *prāc , prācīna, prācya,* 'east' 'advance' 'to promote' • No tradition of associating material wealth or importance with 'up' and 'west' • *Aparanta* 'living at western border' also means 'death'

Table 9.4 DEMS Criteria: Social

Indicators • Social distances in terms of 'High-West: Low-East' in concrete as well abstract terms. • Metaphoric extensions of 'High-West: Low-East' polysemy		
Indus	**Dravidian**	**Indo-Aryan**
• Excavators situate the 'elite class rulers'; 'leader-genius', 'seat of authority' in the upper town on the west	• Social extension of *mēl: kīḻ* ('up'-'low' top-centric terms • *mēṟkuṭikkiḻāṉ* 'chieftain of higher segment' • *kīḻkkalaṉaikaḷ* 'subordinate craftsmen caste'; • *mēlōr* 'great people', 'high rank', 'high caste'; • Some element of contempt associated about the people living in low lying areas from the point of view of people who are on higher elevations • *kīḻōr* - 'farmer' • *pallām* in Kolami means 'east' and people from Kerala call a man from the low-east *kiḻakkaṉ* • Hills are associated with the abodes of Dravidian God Murukan, the 'west facing deity' at Palani Hills. • *mēṟkeḻuntaruḻiṉār* the euphemism for 'one who died' • *kiḻakkaṭaiyaṉiṉṟāḷ* 'a dancer' (of east-quarters)	• Social differentiation in terms of *varṇa* which, means 'outward appearance', 'exterior', 'colour', 'class of men', 'tribe', 'caste.' Anthropo-centric not topo-centric • *varṇatva*- 'the state of colour', 'the state of caste' • *Caturvarṇa* the four castes which also means four principal colours. • *antyaja* – 'inferior tribe' in terms of 'front' vs 'behind' or 'end'. The list of inferior tribes includes 'mountaineer' as well • *pūrvaja* eastern' 'born in the east', the deified progenitors of mankind' • Indra is called *pūrvadikpati,* the "regent of the eastern quarter' • *ávara* 'western' 'the lowest degree' and *ávaravarṇa* means 'belonging to a low caste'

Thus, the DEMS indicators for the Indus cities display a close affinity to the 'High-West: Low-East' framework of the Dravidian than to the 'Front-East: Behind-West' framework of the Indo-Aryan in socio-cultural and linguistic terms.

Part VIII

The Lingering Legacy

Gamecocks of 'High-West' and 'Low-East' Quarters Fought in Indus Cities!

At Mohenjodaro, we come across a seal (Marshall seal No.338) on which the images of two cocks are inscribed side by side, along with a sign that is generally interpreted as 'city'. Iravatham Mahadevan reads the sign sequence on the seal as 'cocks-city.' (Mahadevan 20ll: 86) For an important Indus city to be named after cocks there has to be a reason. A cock being a common domestic bird, normally found in every habitat, there has to be something special about the cocks at that specific place to justify such naming.

Fig.6. Marshal Seal No.338 "COCKS-CITY" (Mahadevan 20ll: 86)

A close scrutiny of the images reveals the tell-tale markers and the probable reason: the necks are raised; the tails are up and stiff; the legs are unsettled and slightly raised above the ground level. They are probably the gamecocks of Mohenjodaro in a fighting-mode (fig.6).

The continuity

An analogy to this is available in *'kōḻi'* (literally means 'hen'), the name of the capital town (also known as Uṟaiyūr) of early Cōḻas of Tamilnadu. In this case as well, the traditional accounts recall the valor of a 'cock' that fought against an elephant at that place as the basis for this commemorative name. In celebration of this episode, the Cōlas of the *Caṅkam* Age even issued a coin with an image of a cock fighting an elephant (fig.7). Hence, tracing the genesis of 'cocks-city' of the Indus Age to the 'fighting-quality' of the cocks of the specific-region may not be without basis.

Fig.7. Cōḻa Coin (1st cent. BCE) "The City of the Cock" (Uṟaiyūr) (Mahadevan 20ll: 86)

The concept of cockfight itself, it seems, could be a metaphoric extension of the 'East-West' dichotomy of Indus cities. Evidence to support this view is available in Old Tamil texts and epigraphic records. The legacy of cockfight lingers as a vibrant aspect of regional culture even now in the specific areas of the Indian subcontinent. In Sindh (Pakistan), the very region where the Indus civilization once flourished, the organized cockfight continues to be a prominent sport. In India, Tamilnadu and Kodagu region of Karnataka are known for cockfights.

In the year 20ll, a full-length Tamil commercial film *Āṭukaḷam* was released and had a successful run. The core theme of this movie that bagged many national awards was 'cock-fight.' The movie revolves around a master cock-trainer and his disciple, the protagonist. In my view, Tamilnadu is the only place in India that offers a socio-cultural context in which such a movie could have been viably made in modern times.

Old Tamil evidence

Going back to the earlier times, there are direct and indirect references to organized cock-fights in the ancient Tamil texts. (*Kuṟun*: 305: 5-6; *Akam*: 277: l3-l6).

'As the neck of the domestic fighting cock with the sharp beak and flaming red feathers bristles when it fights' -narrates an ancient Tamil text (*Aka:* 277, translation by Mahadevan 2003: 627).

'The ferocious cock now leaps up and jumps Forward, now backs down, and then again Attacks angrily with the blade (tied to its leg) - describes a medieval Tamil grammar work. (*Puṟapporuḷ:* 348, translation by Mahadevan 2003: 627).

Mahadevan (2003) writes about an old commentary which talks of a *'kōḻi-nūl'* ('treatise on fighting cocks'.) The commentators of ancient extant Tamil grammar *Tolkāppiyam* (*Tol. Col:* 62, *Iḷampūraṇar*) and the medieval work *Naṉṉūl* (*Naṉṉūl:* 402, commentary *Caṅkaranamaccivāyar)* refer to cockfight between 'west' and 'east' quarters namely *mēlaccēri* and *kīḻacēri.* "It appears that villages with two hamlets, *mēṟcēri* (the western quarter) and *kīḻccēri* (the eastern quarter) had fighting cocks for each quarter" observes Mahadevan (2003: 627).

Hero Stones for the gamecocks of 'east-west' quarters

Independent of these literary references, Old Tamil Epigraphy offers copious insight into the dynamics of cockfight tradition and its connection to the concept of 'east-west' dichotomous settlements. At Arasalapuram in Tamilnadu, a hero-stone, (Mahadevan 2003: 467,530) dated 5th century CE installed in the memory of a fighting-cock which fought at the behest of the western quarter of a main village called Mukaiyūr, is found. On this hero-stone, the toponym *mēṟcēri* (western quarter) is inscribed along with the image of the cock (fig. 8).

Fig. 8. 'Fighting cock' of Mēṟcēri Inscription No ll2, *ETE* (Mahadevan 2003: 530)

Fig. 9. 'Fighting cock' of *Kīḻccēri'* Inscription No.ll3, *ETE* (Mahadevan 2003: 530)

Similarly, we come across another hero-stone at a place called Indalūr, (Mahadevan 2003: 468, 530) erected to commemorate the memory of a 'fighting cock of the eastern quarter'. The toponym *kīḻccēri* (eastern quarter) is engraved on the memorial stone though the name of the main village is not mentioned. Apart from the image of the fighting cock, its pet name *poṟkoṟṟi*, which literally means '*Koṟṟi* the golden' is also inscribed (fig.9).

It is relevant to note that nowhere else in India we come across such ancient tradition of hero-stone being erected in honor of gamecocks. Apart from offering a documentary proof for the prevalence of cock-fight in ancient times as a popular sport, these images and inscriptions also for the first time link the tradition of cock-fight to the concept of dichotomous settlements divided in terms of 'east-west' quarters.

Place Name Markers

Place names can outlive most material artifacts of a civilization. As Arseny Saparov says, "The material landscape may disappear or be destroyed, the civilization that created

them may also disappear but its place-names will most probably survive." (Saparov 2003: 179).

Of the 168 'Mel' (west): 'Kil' (east) pairs of villages discussed earlier (Table 7) the place names Melacheri (79.420332 E/ 12.466958 N), and Kilcheri (79.847899 E/ 13.029903 N) deserve close scrutiny. The place names Mēṟcēri (variant of Mēlacceri) and Kīḻccēri happen to be the first set of *'Mēl: Kīḻ'* dichotomous place names to be attested in Early Tamil Inscriptions. Besides, the context of 'cockfight' in which these place names appear in the inscriptions, as well in the commentaries to Tamil grammar works, I believe, is potentially linked to the main theme of this paper.

Apart from this, we come across Mēlacheri as an ethnonym of a group of a Malayalam speaking community in Lakshadweep. Mēlacheris are believed to be the descendents of original Thiyyar immigrants from the Malabar Coast (EDT. Vol II: 264-65). There is a place called Mekeri (comparable with the place name Melacheri) in Kodagu region of Karnataka, known for its cockfight traditions.

The trail of toponym Melacheri takes us to the north western geographies and beyond. Mela and Cheri are mono-word place names in Pakistan (Mela 33.9147 N/72.02972 E; Mela 33.8975 N/ 70.14833 E; Mela 33.58778 N/ 70.47361 E; Mela 32.16667 N/ 73.15 E; Mela 33.85139 N/ 70.37083 E; Mela 33.84861 N/ 70.38056 E; Mela 33.19722 N/ 74.045 E; Cheri 27.76667 N/ 66.61667 E and Cheri 29.24167 N/ 66.00417 E). In Iran we come across not only 'Meleh' (Meleh 35.16667 N/ 47.36667 E; Meleh 36.04806 N/ 46.45222 E; Meleh 31.35028 N/ 50.88722 E ; Cheri 37.16694 N/ 58.15806 E ; Cheri 30.43333 N/ 49.68333 E) as mono-word place names but also Melehcheri (31.12333 N/ 50.11778 E) as a double-component place name.

It seems, the place names Melacheri and Kilacheri could be a linking thread to trace back the genesis of cockfight as the symbol of Indus dichotomy and eventually the linguistic and cultural affiliations of the so called 'leader- genius', the architects of the Indus cities and of course the cock-trainers, the game referees and the cheering citizens of the Indus cities.

Part IX

Conclusions

1. The 'High-West: Low-East' dichotomy of Indus city layouts was not merely a design coincidence, but a conscious and deliberate choice influenced by 'long-held patterns of thoughts.' The 'human geography' probably had played a role in moulding those thoughts.
2. The Direction-Elevation-Material and Social indicators of the Indus urbanism show closer affinity to the cultural prototypes of the Dravidians and match the lexical encoding and naming of cardinal directions in the Dravidian languages.
3. Toponyms of the Indian subcontinent, historical and current hold a huge promise in unravelling the mysteries of Indus civilization particularly in the process of identifying the probable language (or languages) of Indus people.
4. The remnants of Indus legacy are traceable in the contemporary Indian societies. The cockfight tradition is one of them.

And, I sum-up saying that, the dichotomous layouts of the Indus cities encode a Dravidian paradigm. Probably, in the open spaces between the segregated neighborhoods, the gamecocks of the 'High-West' and the 'Low-East' quarters put up fierce fights, which were at once real and metaphoric, symbolically representing the collective spirit of the Indus urbanism, as the people in the 'city of fighting cocks' cheered in some archaic Dravidian tongue.

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Note on GIS

The place names of India cited in this paper are obtained from Census of India and other State Government databases. The place names of other countries such as Pakistan, Afghanistan and Iran are sourced from GEOnet Names Server at http://earth-info.nga.mil/gns/html/namefiles.htm. I have used the place names and coordinates from the above site as such without any modification. For the purpose of analyzing '*mēl*' (west) and '*kīḻ*' (east) place names of Tamilnadu, I have used State maps of Census of India and country maps from Environmental Systems Research Institute (ESRI) data as base maps (background maps). The '*mēl*' (west) and '*kīḻ*' (east) place names were plotted on these maps based on their latitude and longitude value. Where such values were not available, these were derived from geo-referenced village boundary maps generated from census administrative maps, considering their centroid locations in GIS.

For computation of distance and direction, the latitude-longitude values of the plotted locations were converted to easting-northing values applying Universal Transverse Mercator (UTM) projection. Arc View GIS software was used for the purpose. Distance between a pair of *'mēl-kīḻ'* villages was calculated using co-ordinate geometry formula.

After plotting the locations in GIS using co-ordinates, the points are symbolized and labeled with name. The *.shp file thus generated was exported to Google Earth application compatible *.KMZ file for plotting on Google Earth. Modifications were made in the symbols and label by managing properties of the KMZ file in Google Earth. Approximate elevations of the plotted locations in Google Earth were manually recorded by clicking each point in Google Earth after activating the Terrain layer.

Annexure – I

The metaphorical extensions of 'High-West: Low-East' Polysemies

High-West

Source : Glossary of Tamil Inscriptions (GIT) Vol. l & II; Tamil Lexicon (TL) Vol. l-6;
A Concordance of the Names in the Cōḻa Inscriptions (CI) Vol. I-III and Old Tamil Texts.

Core Word	Core Refer-rent	Extended Referent	Meaning	Context	Source/ Period	Reference
mē	'high'	*mētaku*	'great'	'social'	TASSI, l962-65, p.l-3l; PNDCP, p.95-ll5; 905 CE	GIT-II : 5l7
mēl	'high'	*mēl*	'excellence'	'social'		TL-VI.3354
		mēlōr	'those who are seated high', 'the great', 'those who are of the greater rank or caste'	'social', 'stratification', 'political'	Old Tamil Caṅkam Age	*Tol. Porul.*l44
		mēl	'leadership'	'governance'		TL-VI.3355
		mēlcānti	'prime priest'	'spiritual'	TAS, ii, p.l73-207 l000 CE	GIT-II : 5l8
		mēnīr	'upstream', 'head' (canal water)	'irrigation', 'agriculture'	SII, iii, 54 l0l6 CE	GIT-II : 5l7
		mēlvāram	'land owner's share of the crop'	'agriculture'	SII, xix, 27 969 CE	GIT-II : 5l8
		mēṟpati	'land owner's share of the crop'	'agriculture'	TAS, iii, p.l59-69	GIT-II : 5l9
		mēṟkuṭikiḻāṉ	'chieftain of upper segment'	'social', 'political'	Cōḻā inscription 96l CE	CI.-vol.I: 29l

Core Word	Core Referrent	Extended Referent	Meaning	Context	Source/ Period	Reference
mēl	'west'	*mēlkai*	'higher rank, pedigree'	'social'		TL-VI.3355
mēṉ	'what is above'	*mēṉavaṉ*	'a superior'	'social'		
		mēṅkai	'authority'	'governance'		
		mēṇaṭai	'as per old tradition'	'social'	EI, xxii, 34 l008 CE	GIT-II : 520
		mēmpaṭṭa	'great'	'political'	TASSI, l962-65, p.l-3l; PNDCP, p.95-ll5; 950 CE	GIT-II : 5l7
mēṭu	'elevated land'	*mēṭṭu-nāyakkaṉ*	'Headman of the *Toṭṭiya caste'*	'social'		TL-VI.3350
mēṛku	'west'	*mēṛkeḻun-taruḻiṉa*	'one who died', 'expired' (literally – 'gone west')	'social'		
mī	'up', 'west'	*mīciṛaku*	'west-wing' (western side)	'structural'	SII, xix, l83 9l4 CE	GIT-II : 500
		mīyāṭci	'first right in the land ownership'	'agricultural', 'governance'	EI, xvii, l6 77l CE	GIT-II : 500
		mīy ñīr	'first water' (head side water)	'agricultural'	SII, vii, 889 l0l8 CE	GIT-II : 500
		mīḷi	'leader'	'polity', 'social'	SII, iv,l67 l000 CE	GIT-II : 50l

Low-East

Source : Glossary of Tamil Inscriptions (GIT) Vol. l & II; A Concordance of the Names in the *Cōḻa* Inscriptions (CI) Vol. I-III and Old Tamil Texts.

Core Word	Core Referent	Extended Referent	Meaning	Context	Source/ Period	Reference
kīḻ	'below', 'underneath'	*kīḻ*	'inferiority, baseness, low'	'social'		
		kīḻk – kalaṉaikaḷ	'subordinate craftsmen caste'	'social', 'stratification'	SII, iv, 223 l036 CE	GIT- I : l82
		kīḻppaṭṭavar	'inferiors'	'social'		
		kīḻppāl	'low caste'	'social', 'stratification'		
		kīḻāṉ	'low caste man'	'social'	*Cōḻa* inscr. l0l4 CE	CI-II: 646
		kīḻcānti	'assistant priest'		TAS, ii,p. l73-207; l000 CE	GIT- I : l82
		kīḻāḷ	'subordinate man'	'social'	SII, xix,254 980 CE	GIT-I : l83
		kīḻmaṭai	'lower most sluice of a tank'	'irrigation', 'agriculture'	Old Tamil *Caṅkam* Age	*Puram.*42
		kīḻnīr	'tail end water for irrigation'	'irrigation', 'agriculture'	SII, vii, 886 l058 CE	GIT-I : l82
		kīṇīr	'tail end water for irrigation'	'irrigation', 'agriculture'	SII, vii, 889 l0l8 CE	GIT-I : l82
		kīḻōr	'farmer', 'agriculturist'	'social'		
		kīḻpāti	'tenant's share of the crop'	'agriculture'		
		kīḻvāram	'farmer's share in the yield'	'agriculture'	EC, ix, Dv.76 l05l CE	GIT-I : l82
		kīḻīṭu	'lower tenancy'	'agriculture'	EI, ix, 32; TAS, iv, p.l-ll 973 CE	GIT-I : l83

Cardinal direction of 'Mēl' village w.r.t 'Kiḻ' village *Annexure - II*

List of 168 dichotomous pairs in Tamilnadu

Sl	Place Name with 'Mēl' prefix				Place Name with 'Kiḻ' prefix					Direction of 'Mēl' village w.r.t. 'Kiḻ' village (East/ West)	Elevation of 'Mēl' village w.r.t. 'Kiḻ' village (Higher/ Lower)	Elev. diff. (ft)	Loca-tion Type*
	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
1	Mel Kolathur	79.49	12.61	343	Kilkolathur	79.59	12.61	312	11.01	W	H	31	1
2	Mel Nemili	79.48	12.57	404	Kilnemili	79.80	12.24	107	50.91	W	H	297	1
3	Mel palur	78.94	12.40	722	Kil palur	78.95	12.40	704	1.17	W	H	18	1
4	Mel Pudupakkam	79.37	12.67	411	Kilpudupakkam	79.55	12.68	332	19.11	W	H	79	1
5	Mela Ambur	77.39	8.75	308	Kila Ambur	77.41	8.76	273	2.65	W	H	35	1
6	Mela Arasadi	78.12	8.88	47	Keela Arasadi	78.15	8.86	22	3.94	W	H	25	1
7	Mela Pattamangalam	78.59	10.07	307	Keelapattamangalam	78.60	10.04	278	3.95	W	H	29	1
8	Mela Thattaparai	78.03	8.82	92	Keelathattapparai	78.03	8.79	59	3.05	W	H	33	1
9	Melabudanur	79.72	10.84	34	Kilabudanur	79.73	10.85	18	1.02	W	H	16	1
10	Melacheri	79.42	12.47	443	Kilcheri	79.85	13.03	202	77.67	W	H	241	1
11	Meladhanur	79.10	11.46	227	Keeladhanur	79.11	11.46	217	0.74	W	H	10	1
12	Melaiyur	79.57	11.04	52	Keelaiyur	79.60	11.04	43	2.77	W	H	9	1
13	Melaiyur	79.81	11.15	26	Keelaiyur	79.85	11.16	3	4.63	W	H	23	1
14	Melaiyur	79.51	10.98	56	Keelaiyur	79.77	10.61	1	50.74	W	H	55	1
15	Melaiyur - I	79.35	10.70	79	Keelaiyur - I	79.39	10.71	66	4.37	W	H	13	1
16	Melaiyur -II	79.36	10.70	86	Keelaiyur - II	79.39	10.69	71	2.81	W	H	15	1
17	Melakadambur	79.53	11.24	48	Keelakadambur	79.54	11.23	36	1.68	W	H	12	1
18	Melakalpoondi	78.95	11.44	357	Kilakalpoondi	78.95	11.43	332	1.97	W	H	25	1
19	Melakandamangalam	78.17	9.51	249	Keelakandamangalam	78.18	9.52	226	2.00	W	H	23	1
20	Melakanjirangulam	78.18	9.62	259	Kilakanjirangulam	78.19	9.61	243	1.80	W	H	16	1
21	Melakaramanur	79.87	13.32	170	Kilakarmanur	79.99	13.32	114	13.31	W	H	56	1
22	Melakarandai	78.06	9.29	149	Keelakarandai	78.07	9.27	136	2.78	W	H	13	1

Cardinal direction of 'Mēl' village w.r.t 'Kiḻ' village *Annexure - II*

List of 168 dichotomous pairs in Tamilnadu

Sl	Place Name with 'Mēl' prefix				Place Name with 'Kiḻ' prefix					Direction of 'Mēl' village w.r.t. 'Kiḻ' village (East/ West)	Elevation of 'Mēl' village w.r.t. 'Kiḻ' village (Higher/ Lower)	Elev. diff. (ft)	Loca-tion Type*
	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
23	Melakidaram	78.56	9.17	23	Keelakidaram	78.60	9.17	17	4.65	W	H	6	1
24	Melakodumalur	78.47	9.47	146	Keelakodumalur	78.48	9.47	132	1.52	W	H	14	1
25	Melakondaiyur	80.02	13.18	99	Kilakondaiyur	80.04	13.18	92	2.40	W	H	7	1
26	Melakondur	79.27	11.96	291	Keelakondur	79.28	11.95	260	1.42	W	H	31	1
27	Melakottai	77.56	10.53	1075	Keelakottai	78.61	10.02	270	128.13	W	H	805	1
28	Melakottai	77.99	9.79	397	Keelakottai	78.68	9.44	83	85.27	W	H	314	1
29	Melakulam	78.48	9.44	127	Keelakulam	78.50	9.43	123	2.09	W	H	4	1
30	Melakuppam	79.20	12.92	771	Kilkuppam	79.26	12.87	625	8.42	W	H	146	1
31	Melakuyilkudi	78.03	9.92	496	Kilakuyilkudi	78.04	9.91	494	1.16	W	H	2	1
32	Melalathur	78.88	12.92	901	Kilalathur	78.92	12.95	890	5.66	W	H	11	1
33	Melalavandhacheri	79.45	10.73	57	Keelalavandhacheri	79.48	10.73	55	3.29	W	H	2	1
34	Melamanakkudi	78.85	10.07	187	Keelamanakudi	79.50	11.10	62	133.85	W	H	125	1
35	Melamanjanoor	78.87	12.13	633	Keelamanjanoor	78.89	12.13	611	2.51	W	H	22	1
36	Melamathur	78.03	9.96	519	Keelamathur	78.03	9.96	490	1.05	W	H	29	1
37	Melamathur	79.05	11.19	308	Keelamathur	79.69	11.26	22	69.95	W	H	286	1
38	Melandurai	79.64	13.04	285	Kilandurai	79.64	13.03	282	1.39	W	H	3	1
39	Melaneelidanallur	77.60	9.10	427	Keelaneelidanallur	77.62	9.08	425	2.41	W	H	2	1
40	Melanettur	78.54	9.63	167	Keelanettur	78.55	9.62	159	1.52	W	H	8	1
41	Melanur	79.95	13.20	110	Keelanur	79.95	13.19	108	1.23	W	H	2	1
42	Melapalaiyur	79.38	11.47	104	Keelapalaiyur	79.42	11.46	77	4.25	W	H	27	1
43	Melapalaiyur	79.46	10.85	67	Keelapalaiyur	79.50	10.82	59	5.89	W	H	8	1
44	Melaparuthikudi	79.57	10.97	46	Kilaparuthikudi	79.57	10.98	46	0.88	W	H	0	1

Cardinal direction of 'Mēl' village w.r.t 'Kiḻ' village *Annexure - II*

List of 168 dichotomous pairs in Tamilnadu

Sl	Place Name with 'Mēl' prefix				Place Name with 'Kiḻ' prefix					Direction of 'Mēl' village w.r.t. 'Kiḻ' village (East/ West)	Elevation of 'Mēl' village w.r.t. 'Kiḻ' village (Higher/ Lower)	Elev. diff. (ft)	Loca-tion Type*
	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
45	Melaparuttiyur	78.37	9.57	201	Keelaparuthiyur	78.40	9.54	173	5.26	W	H	28	1
46	Melapattam	77.77	8.76	343	Keelapattam	77.80	8.76	117	3.14	W	H	226	1
47	Melapattu	78.95	11.84	446	Keelapattu	78.96	11.84	429	1.70	W	H	17	1
48	Melapattu Rasingamangalam	79.00	10.37	290	Kilapatti Rasingamangalam	79.03	10.38	258	3.77	W	H	32	1
49	Melaperumazhai	79.59	10.44	9	Keelaperumazhai	79.60	10.46	2	2.08	W	H	7	1
50	Melaperumpallam	79.81	11.13	25	Kizhaperumpallam	79.83	11.13	7	2.30	W	H	18	1
51	Melapidavoor	78.52	9.72	219	Kilpidavur	78.56	9.69	163	5.71	W	H	56	1
52	Melappaguthi	78.20	10.74	612	Keelappaguthi	78.25	10.72	606	5.20	W	H	6	1
53	Melappanaiyur	78.67	10.33	386	Kilapanaiyur	78.92	9.73	49	71.37	W	H	337	1
54	Melapuliyur (East)	78.78	11.27	549	Keelapuliyur (North)	78.96	11.31	369	19.84	W	H	180	1
55	Melapuliyur (West)	78.76	11.26	551	Keelapuliyur (South)	78.96	11.29	358	22.70	W	H	193	1
56	Melapungudi	78.46	9.96	386	Kilapungudi	78.49	9.96	345	3.13	W	H	41	1
57	Melaputhaneri	77.82	8.72	144	Kilputhaneri	77.83	8.72	83	1.10	W	H	61	1
58	Melarajakularaman	77.61	9.38	417	Keelrajakularaman	77.65	9.39	384	4.74	W	H	33	1
59	Melaramanadhi	78.31	9.41	158	Keelaramanadhi	78.32	9.41	143	1.90	W	H	15	1
60	Melarangunam	79.30	12.28	401	Kilarungunam	79.67	11.74	45	71.56	W	H	356	1
61	Melarasampattu	78.86	12.67	1352	Kil Arasampattu	79.10	12.77	746	28.75	W	H	606	1
62	Melarasoor	78.96	11.01	281	Keelarasoor	78.99	11.01	212	3.85	W	H	69	1
63	Melarungunam	79.38	12.15	325	Kilarungunam	79.75	12.22	130	40.08	W	H	195	1
64	Melathangal	79.30	12.80	513	Kilanthangal	79.41	12.81	460	11.93	W	H	53	1
65	Melathanian	78.58	10.42	438	Keelathanian	78.60	10.40	421	2.97	W	H	17	1
66	Melathayanur	79.18	11.93	361	Keelathayanur	79.19	11.93	347	1.26	W	H	14	1

Cardinal direction of 'Mēl' village w.r.t 'Kiḻ' village *Annexure - II*

List of 168 dichotomous pairs in Tamilnadu

Sl	Place Name with 'Mēl' prefix				Place Name with 'Kiḻ' prefix					Direction of 'Mēl' village w.r.t. 'Kiḻ' village (East/ West)	Elevation of 'Mēl' village w.r.t. 'Kiḻ' village (Higher/ Lower)	Elev. diff. (ft)	Location Type*
	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
67	Melathiruvengada-nathapuram	77.66	8.69	148	Kilathiruvengada-nathapuram	77.67	8.69	135	1.76	W	H	13	1
68	Melathooval	78.52	9.42	114	Keelathooval	78.55	9.43	114	3.00	W	H	0	1
69	Melavalavu	78.30	10.10	581	Keelavalavu	78.42	10.06	476	13.37	W	H	105	1
70	Melavanniyur (Mannargudi)	79.61	11.32	23	Keelavanniyur	79.62	11.32	22	1.41	W	H	1	1
71	Melavidayal	79.42	10.87	69	Keelavidayal	79.44	10.86	65	2.38	W	H	4	1
72	Melchettipattu	79.03	12.20	578	Kilchettipattu	79.04	12.19	558	1.54	W	H	20	1
73	Meliruppu	79.49	11.69	246	Kiliruppu	79.52	11.71	185	3.50	W	H	61	1
74	Melkachirapattu	79.06	12.17	556	Kilkachirapattu	79.07	12.17	542	1.41	W	H	14	1
75	Melkadirpoor	79.65	12.84	313	Kilkadirpoor	79.67	12.83	288	2.08	W	H	25	1
76	Melkalathur	79.57	13.04	343	Kilakalathur	79.59	13.01	309	4.16	W	H	34	1
77	Melkangeyankuppam	79.48	11.67	312	Kilkangeyankuppam	79.48	11.67	307	1.01	W	H	5	1
78	Melkaranai	79.43	12.08	234	Kilkaranai	79.69	12.29	155	36.04	W	H	79	1
79	Melkaripur	78.92	12.23	671	Kilkaripoor	79.18	12.14	438	30.79	W	H	233	1
80	Melkavarapattu	79.59	11.79	75	Kilkavarapattu	79.61	11.78	68	2.70	W	H	7	1
81	Melkumaramangalam (South)	79.59	11.83	84	Kilkumaramangalam	79.74	11.84	39	17.24	W	H	45	1
82	Melkundah	76.61	11.23	6620	Kilkunda	76.66	11.26	4617	5.93	W	H	2003	1
83	Melmambattu	79.33	12.32	404	Kilmambattu	79.48	12.18	215	22.88	W	H	189	1
84	Melmanakkudi	79.65	11.48	20	Kizhamanakudi	79.67	11.48	20	1.79	W	H	0	1
85	Melmanavur	79.09	12.92	723	Kilmanavur	79.09	12.93	715	1.25	W	H	8	1

Cardinal direction of 'Mēl' village w.r.t 'Kiḻ' village *Annexure - II*

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Sl	Place Name with 'Mēl' prefix				Place Name with 'Kiḻ' prefix					Direction of 'Mēl' village w.r.t. 'Kiḻ' village (East/ West)	Elevation of 'Mēl' village w.r.t. 'Kiḻ' village (Higher/ Lower)	Elev. diff. (ft)	Location Type*
	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
86	Melmangalam	77.58	10.06	873	Kilamangalam	79.26	10.50	76	190.10	W	H	797	1
87	Melmattai	79.43	12.62	379	Kilmattai	79.53	12.64	302	10.99	W	H	77	1
88	Melmudalambedu	80.12	13.36	69	Kilmudalambedu	80.14	13.37	49	1.98	W	H	20	1
89	Melmuttukur	78.86	12.92	920	Kilmuttukur	79.01	13.00	912	18.77	W	H	8	1
90	Melnagar	79.18	12.71	586	Kilnagar	79.20	12.71	564	2.60	W	H	22	1
91	Melnariyappanur	78.81	11.62	506	Kilnariyappanur	79.03	11.61	310	23.52	W	H	196	1
92	Melnarma	79.66	12.57	220	Kilnarma	79.70	12.54	187	5.84	W	H	33	1
93	Melnayakanpalayam	79.28	12.84	604	Kilnaickenpalayam	79.70	12.75	242	46.71	W	H	362	1
94	Melnelli	79.46	12.73	381	Kilnelli	79.61	12.75	310	16.77	W	H	71	1
95	Melnemili	79.22	11.43	161	Keelnemili	79.23	11.43	157	1.19	W	H	4	1
96	Melnilavur	78.72	11.90	2578	Keelnilavur	78.74	11.90	2417	2.26	W	H	161	1
97	Melottivakkam	79.63	12.85	316	Kilottivakkam	79.79	12.80	204	18.62	W	H	112	1
98	Melpadi	79.27	13.06	741	Kilpadi	79.35	12.81	498	28.97	W	H	243	1
99	Melpadur	79.00	12.33	713	Kilpadur	79.00	12.34	687	1.55	W	H	26	1
100	Melpakkam	79.64	13.07	308	Kilpakkam	79.69	13.12	240	8.15	W	H	68	1
101	Melpallipattu	78.83	12.73	1216	Kilpallipattu	79.16	12.76	653	35.33	W	H	563	1
102	Melpappanur	79.19	10.02	39	Kilpappanur	79.19	10.02	30	0.71	W	H	9	1
103	Melpasar	78.74	12.11	873	Kilpasar	78.75	12.09	801	1.93	W	H	72	1
104	Melpattu	78.81	12.42	3036	Kilpattu	78.84	12.43	2865	3.55	W	H	171	1
105	Melpennathur	78.89	12.26	743	Kilpennathur	79.22	12.24	479	36.69	W	H	264	1
106	Melpettai	79.69	12.26	163	Kilpettai	79.92	12.13	5	29.11	W	H	158	1
107	Melpuliyangudi	79.39	11.41	94	Kilpuliyangudi	79.40	11.42	79	1.08	W	H	15	1

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	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
108	Melravandavadi	78.71	12.20	1016	Keelravandavandi	78.93	12.15	597	24.73	W	H	419	1
109	Melsathambur	77.99	11.22	525	Kilsathambur	78.06	11.15	488	10.28	W	H	37	1
110	Melsiviri	79.55	12.36	309	Kilsiviri	79.75	12.18	92	29.19	W	H	217	1
111	Melthaniyalampattu	79.46	11.84	154	Kilthaniyalampattu	79.47	11.84	138	1.04	W	H	16	1
112	Melumalai	78.09	12.60	2039	Kilamalai	78.91	9.99	119	302.42	W	H	1920	1
113	Melur	78.21	11.54	3698	Kilur	78.22	11.53	2788	1.86	W	H	910	1
114	Melur	79.20	11.46	165	Kilur	79.58	11.60	146	45.24	W	H	19	1
115	Melur	79.00	12.94	789	Kilur	79.01	12.93	776	0.98	W	H	13	1
116	Melvaithinankuppam	78.78	12.85	972	Kilvaithinankuppam	78.99	12.96	830	25.38	W	H	142	1
117	Melvalai	79.33	12.03	342	Kilvalai	79.34	12.02	321	1.65	W	H	21	1
118	Melvanakkambadi	78.74	12.24	963	Keelvanakkambadi	78.95	12.19	607	23.56	W	H	356	1
119	Melveeranam	79.46	12.98	433	Kizveeranam	79.48	12.98	400	1.85	W	H	33	1
120	Melvenbakkam	79.61	12.91	339	Kilvenbakkam	79.62	12.92	320	1.77	W	H	19	1
121	Melvilachur	79.01	12.97	810	Kilvilachur	79.03	12.95	758	2.50	W	H	52	1
122	Mela Authoor	78.06	8.62	29	Keelathur	79.04	10.36	200	220.44	W	L	-171	2
123	Mela Eral	78.00	9.11	194	Kila Eral	78.02	9.10	211	2.79	W	L	-17	2
124	Melachengambadi	78.63	12.11	801	Kilchengampadi	78.65	12.10	803	2.42	W	L	-2	2
125	Melaiyur	79.72	11.12	25	Keelaiyur	79.75	11.13	35	3.44	W	L	-10	2
126	Melaiyur	78.27	9.35	165	Keelaiyur	78.38	10.05	496	78.48	W	L	-331	2
127	Melakottiyur	80.15	12.84	81	Keelakottiyur	80.15	12.83	85	1.40	W	L	-4	2
128	Melakurichi	79.09	11.58	235	Keelakurichi	79.10	11.58	246	1.57	W	L	-11	2
129	Melalinjippattu	79.76	11.84	24	Kil Alinjipattu	79.78	11.84	30	2.07	W	L	-6	2

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	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
130	Melamattur	77.84	9.52	302	Kilamathur	79.05	11.20	308	228.12	W	L	-6	2
131	Melambi	79.64	12.87	308	Kilambi	79.66	12.86	312	1.73	W	L	-4	2
132	Melanesaneri	77.96	9.77	402	Keelanesaneri	77.96	9.74	407	3.14	W	L	-5	2
133	Melanur	78.53	12.11	1065	Kilanur	78.53	12.10	1129	1.45	W	L	-64	2
134	Melapalandai	79.39	12.65	371	Kilapalandai	79.44	12.65	374	5.02	W	L	-3	2
135	Melapanangadi	78.12	9.98	484	Keelapanangadu	78.12	9.97	485	0.91	W	L	-1	2
136	Melapandiyapuram	77.95	8.85	149	Keelapandi	78.15	10.01	494	130.11	W	L	-345	2
137	Melaparuthigudi	79.64	11.29	16	Keelparuthigudi	79.65	11.30	35	1.83	W	L	-19	2
138	Melapatti	78.42	10.25	796	kilpatti	78.81	12.87	969	293.39	W	L	-173	2
139	Melaselvanur	78.54	9.21	35	Keelaselvanur	78.57	9.21	37	3.22	W	L	-2	2
140	Melathukkuli	78.69	11.86	2009	Keelathukkuli	78.71	11.88	2285	2.57	W	L	-276	2
141	Melayur	78.58	9.63	151	Kilayur	78.96	10.29	284	84.17	W	L	-133	2
142	Melkarai	77.63	8.59	251	Kilakarai	78.06	10.07	666	171.20	W	L	-415	2
143	Melmambattu	79.57	11.72	196	Kilmambattu	79.59	11.71	201	3.05	W	L	-5	2
144	Melmaruvathur	79.83	12.43	152	Keelmaruvathur	79.84	12.42	165	1.04	W	L	-13	2
145	Melmurungai	78.74	12.86	1488	Kilmurungai	78.79	12.82	1605	6.86	W	L	-117	2
146	Melnedumbur	79.60	11.33	24	Keelnedumbur	79.61	11.33	26	1.00	W	L	-2	2
147	Melpathi	79.49	11.53	85	Kilpathi	79.51	11.53	106	1.65	W	L	-21	2
148	Melradhambur	79.57	11.25	28	Keelaradhambur	79.58	11.25	29	0.80	W	L	-1	2
149	Melsinipakkam	79.01	12.19	605	Keelsinipakkam	79.01	12.17	613	2.57	W	L	-8	2
150	Melthathiyapattu	78.86	12.48	3012	Kilthathiyapattu	78.87	12.47	3220	1.43	W	L	-208	2
151	Melvilagam	79.82	13.13	159	Keelvilagam	79.83	13.13	161	1.11	W	L	-2	2

Cardinal direction of 'Mēl' village w.r.t 'Kīḻ' village *Annexure - II*

List of 168 dichotomous pairs in Tamilnadu

Sl	Place Name with 'Mēl' prefix				Place Name with 'Kīḻ' prefix					Direction of 'Mēl' village w.r.t. 'Kīḻ' village (East/ West)	Elevation of 'Mēl' village w.r.t. 'Kīḻ' village (Higher/ Lower)	Elev. diff. (ft)	Loca-tion Type*
	Place Name	Long. /E	Lat. /N	Altitude in ft	Place Name	Long. /E	Lat. /N	Altitude in ft. above MSL	Dist. (Km)				
152	Melacheri	79.39	12.28	338	Kilcheri	79.03	10.13	127	241.92	E	H	211	3
153	Melakorukkai	79.39	10.92	92	Keelakorukkai	79.39	10.93	82	0.73	E	H	10	3
154	Melakuppam	79.70	11.87	60	Kilakuppam	79.66	11.75	52	14.12	E	H	8	3
155	Melapattu	80.08	12.63	122	Kilpattu	79.75	12.36	106	46.95	E	H	16	3
156	Melnachipattu	78.97	12.29	771	Kilnachipattu	78.97	12.29	771	0.00	E	H	0	3
157	Melpakkam	79.71	12.66	247	Kilpakkam	79.70	12.53	181	14.32	E	H	66	3
158	Melputhur	79.79	12.76	207	Kilputhur	79.79	12.75	199	1.67	E	H	8	3
159	Melachirupodhu	78.57	9.28	65	Keelachirupodhu	78.55	9.30	69	3.39	E	L	-4	4
160	Melakalani	80.17	13.47	19	Keelakalani	80.02	12.84	105	70.37	E	L	-86	4
161	Melamangalam	79.41	11.87	179	Keela Mangalam	77.96	8.96	205	359.02	E	L	-26	4
162	Melanatham	79.44	10.54	72	Keelanatham	79.24	11.04	147	59.46	E	L	-75	4
163	Melandur	79.96	13.28	122	Kilandur	79.65	13.17	237	36.24	E	L	-115	4
164	Melapalayam	78.13	10.95	386	Kilapalayam	78.00	11.36	612	47.75	E	L	-226	4
165	Melathur	79.51	12.28	251	Kilathur	79.49	12.67	336	43.16	E	L	-85	4
166	Melivayal	78.91	10.24	207	Kilavayal	78.45	10.33	626	50.69	E	L	-419	4
167	Melkuppam	80.13	12.60	69	Keelkuppam	78.53	12.22	1114	179.20	E	L	-1045	4
168	Melpadi	79.56	11.95	131	Kilpadi	79.06	11.85	387	55.37	E	L	-256	4

***Location Type :** 1 - *Mēl* village at a Higher elevation and to the West of corresponding *Kīḻ* village; meeting both the criteria direction / elevation

2 - *Mēl* village to the West of corresponding *Kīḻ* village, but at a Lower elevation; meeting one criteria i.e. direction

3 - *Mēl* village at a Higher elevation from corresponding *Kīḻ* village but to the East; meeting one criteria i.e. elevation

4 - *Mēl* village at a Lower elevation and to the East of corresponding *Kīḻ* village; not meeting both the criteria

Annexure – III

Co-ordinates of the places named as 'Kot' in Iran, Afghanistan & Pakistan

Iran

Location	Lat./N	Long./E
Kot	31.11667	61.53333

Afghanistan

Location	Lat./N	Long./E	Location	Lat./N	Long./E
Kot	29.56722	64.07694	Kot	34.13417	70.58889
Kot	35.69806	71.26722	Kot	33.17222	63.98028

Pakistan

Location	Lat./N	Long./E	Location	Lat./N	Long./E
Kot	28.95	70.36667	Kot	30.96667	72.86667
Kot	34.29972	71.61472	Kot	33.67778	70.59167
Kot	34.49667	71.72417	Kot	32.60278	74.51944
Kot	34.30639	71.95694	Kot	34.85417	72.96667
Kot	31.09611	69.55306	Kot	34.37222	72.7875
Kot	29.23333	67.13333	Kot	32.29722	74.68194
Kot	29.41667	67.56667	Kot	34.81667	72.4375
Kot	30.88333	72.63333	Kot	34.41389	73.72639
Kot	33.46667	71.56667	Kot	33.83333	73.96944
Kot	34.1	72.88333	Kot	30.95833	72.86667
Kot	34.2	71.7	Kot	34.50972	73.025
Kot	34.55	72.68333	Kot	34.60278	73.10278
Kot	34.65417	73.23611	Kot	34.65417	73.23611
Kot	34.57083	73.21389	Kot	34.57083	73.21389
Kot	34.27083	73.15833	Kot	34.27083	73.15833
Kot	34.27639	73.18333	Kot	34.27639	73.18333
Kot	34.35694	73.07222	Kot	34.35694	73.07222
Kot	34.68611	72.51111	Kot	34.68611	72.51111
Kot	34.65	72.66389	Kot	34.65	72.66389
Kot	35.45972	72.58889	Kot	35.45972	72.58889
Kot	27.93611	68.87222	Kot	27.93611	68.87222
Kot	34.37778	73.43194	Kot	34.37778	73.43194
Kot	34.33889	73.27778	Kot	31.22222	73.6375
Kot	33.02222	73.20833	Kot	34.98222	72.525
Kot	33.72917	73.82778	Kot	34.8	72.725
Kot	33.73889	73.87222	Kot	34.52083	71.45
Kot	33.04167	74.03056	Kot	32.58639	70.35528
Kot	34.20972	73.01806			

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