

Indus Musicians in Mesopotamia

Bull Lyre of Indus Valley and 90 words that Harappans May Have Spoken

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Abstract

Human is a musical creature. It is seen ubiquitously through times and spaces that a certain percentage of human population is always musically inclined irrespective of their profession. Music is also an integral part of many social activities humans generally observe like religious practices, marriages, deaths and what more. Due to the possible presence of Harappan population in Mesopotamia, it may be surmised that a number of Harappan musicians and some of their musical instruments could also have reached there. In this investigation, crucial help could also come from the fact that many a times, names of musical instruments travel with them.

On account of a very likely possibility of such an occurrence, a study of archaeological and Sumerian textual records in Mesopotamia was strongly suggestive of a significant presence of Harappan musicians and musical instruments in Mesopotamia. In fact, study of Sumerian text has shown that about 30 musical terminologies out of a total of nearly 60, in the categories such as names of instruments, singers, names of songs and even musical notations, etc. in Sumerian (PSD) are found to be phonetically and semantically very similar to ancient Indian terms with some “*Sumerianization*”. The study also demonstrated certain patterns in the way words were *sumerianized*. To verify the data, other words were studied from the areas that are related to Harappan presence in Mesopotamia based on the patterns obtained from musical

terminologies; which yielded many more positive results. A total of 90 such words are found till now, which are reported here. Furthermore, the study of iconography in Mesopotamian archaeological records has also shown very compelling parallels in musical traditions. Importantly, it predicted a possibility of a Harappan lyre, shaped realistically like a bull, that may have travelled from Indus to Mesopotamia and evolved there in local styles in the forms as found in the Royal Cemetery of Ur.

Introduction

It is sad that Harappan Archaeomusicology hadn't been studied in any detail so far and Harappan music remained just a quick passing reference in publications. Present paper is a part of an ongoing effort to work towards a better situation. In a forthcoming paper, we discuss in detail some of the archaeological artifacts (iconography/toy forms/likely non-perishable parts of instruments) found at various Indus sites that show a possibility of presence of a variety of instruments including:

(a) Arched Harp, Drum (both are seen on seals)

(b) Multiple specimen of what are most likely different types of tuning pegs (made of ivory, bone and terracotta, sometimes decorated) with expected damage patterns, found at various sites indicating possibility of multiple types of stringed instruments. Similar pegs are used till today in the Indian subcontinent in a very large variety of instruments (c.f. Fig. 1.1-1.2 Harappan and modern tuning pegs). Fig 1.3 shows comparison of damage patterns in Harappan specimen and modern tuning peg of a *Sitār*. As apparent in both the cases, lower part is damaged more. This part goes inside the body of instrument and since the tuning is required to be adjusted frequently, more damage occurs to this part in general. String marks are present at similar position in both examples and appear fairly consistent, as musicians usually tie the strings quite neatly. Modern *Sitār* uses fine metallic strings but for Harappan specimen, it is more likely to be gut (or even silk?) (For presence of silk see Good, Kenoyer, Meadow 2009 "New Evidence For Early Silk In The Indus Civilization").

(c) A terracotta object that is probably a sound box of a small or toy lute.

(d) Early Ocarina (vessel flute) type instruments found in miniaturized form of terracotta toy whistles. A tradition of similar instruments is still present in rural areas of Pakistan and India around some major Harappan sites. (c.f. Fig. 2 Harappan whistles and modern vessel flutes).

(e) Terracotta specimen of rattles; etc.

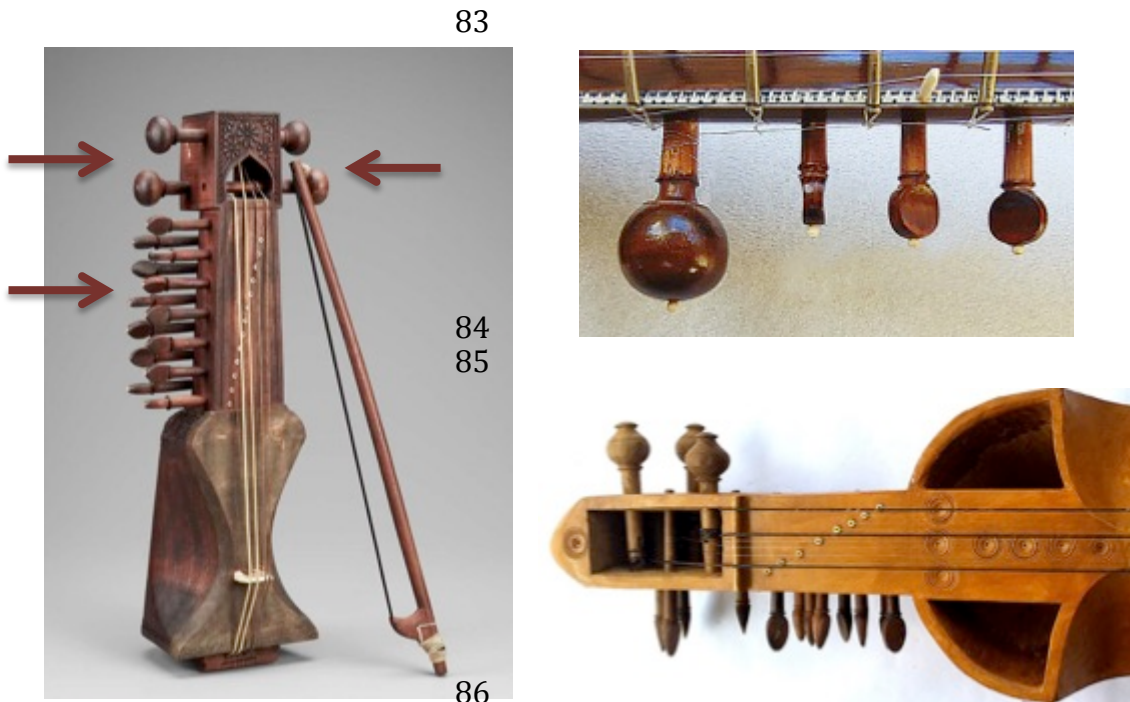


Fig. 1.1 Examples of use of tuning pegs (indicated by arrow) in south Asian instruments: (clockwise from left) sindhī sārangi, sitār, sārindā (many more examples can be seen in fig. 6 and 7)



Fig. 1.2 some of the pegs (terracotta) found at various Harappan sites



Fig. 1.3 A Comparison of damage patterns in (Left) a Harappan (terracotta) and (Right) modern Indian tuning peg (of a Sitār, wooden) (details in Vyas, forthcoming). In both the cases, lower part is damaged more. String marks (indicated by arrow) appear at similar position and are fairly regular in both, as musicians usually tie the strings quite neatly. Modern Sitar uses fine metallic strings but for Harappan specimen, it is more likely to be gut (or even silk?).



Fig. 2: Harappan toy whistles (above) and (Below) a tradition of similar instruments, which is still present in rural areas of Pakistan and India around some major Harappan sites. Only major difference between Harappan and modern ones is the number of holes.

111 However, in context of a large urban civilization like Indus, presently
112 available evidence in archaeology doesn't seem to give any comprehensive
113 account of music. Profuse use of perishable material in the manufacture of
114 instruments usually makes it very difficult in archaeology to provide any direct
115 evidence for actual instruments in reasonable detail. Most importantly, there is a
116 conspicuous absence of central temples, palaces and (*especially*) elaborate elite
117 burials (Kenoyer 2006a), where one would hope to seek better evidence, like in
118 Egypt or Mesopotamia. Another equally important issue is, according to Kenoyer
119 (2010) "(...) because the earliest phases of the Indus cities are deeply buried,
120 very few examples of early art have been recovered". Standardized nature of
121 majority of seals, which usually employs animals (real or composite/imaginary)
122 as main motif, further compounds the problem. Few parts of instruments, which
123 are non-perishable or a few fortunate depictions of instruments in iconography,
124 are the only help here. The Indus script remains undeciphered till date and with
125 presently available corpus of '*Harappan* text' where about 5 signs is average total
126 length of a piece of text, i.e. on seals, how much a decipherment would directly
127 help in understanding the intricacies of their musical ideas is highly doubtful.

128
129 However, Indus was the largest urban civilization of its time. Sea-faring urban
130 Harappans built planned cities with water management and sewage systems,
131 implemented civilization wide standardizations for units of measurements and
132 seals, etc., had very developed craftwork and associated technologies and more.
133 It is highly likely that they had reasonably intricate musical traditions as well; it
134 is only natural that it would be so.

135
136 But there still are some untapped resources that can bring new knowledge, i.e.
137 the other contemporary cultures and civilizations with which Harappans traded.
138 Harappan articles, trade connections and even settlements are found at far and
139 wide places and the most important of them is Mesopotamia. According to
140 Massimo Vidale, "The connections between these ancient Bronze age
141 civilizations could one day help answer a lot of questions. People moved around
142 a lot more than we think, and interactions between cultures were just as rich as
143 they are today." Vidale's 2004 paper "Growing in a Foreign World: For a History
144 of the "Meluhha Villages" in Mesopotamia in the 3rd Millennium BC" is a good
145 reference here. The paper, in his own words, is "aimed at summarizing part of
146 the information piled since Gadd's paper (1932), and presently available on the
147 question of the Meluhhan communities in Mesopotamia". I'll reproduce a few
148 relevant passages here as needed.

Nature of connections between Mesopotamia and Indus

"In 1932, C.J. Gadd opened a new line of archaeological research, collecting and publishing in a fortunate paper a series of seals from Mesopotamia (found during digs or acquired on the antiquarian market) sharing what he regarded as an "Indian style"" (Vidale 2004). Since then numerous scholars have studied the nature of relations between both the civilizations. Connections between Indus valley and near east may have started quite early.

"Long-distance trade by navigation between the two poles of the Gulf was already established by late-Neolithic and early Chalcolithic times (Carter 2002a, 2002b). It was the beads and shell trade that, in Mesopotamia, in the Gulf, most probably at Susa and possibly even in Bactria, gradually promoted the local settlement of families of specialized merchants and craft-persons from the Indus valley, who channeled along their tracks the supply of raw materials and, in general, the complex know-how of the Indus crafts. Archaeological evidence pushes back the beginning of this process at least to the end of the 4th millennium BC, when Late Uruk Sumerian engravers frequently employed the colummella of the Indian shank shell (*Turbinella pyrum*) for their cylinder seals (Kenoyer, in print)" (Vidale, 2004).

J. M. Kenoyer too, is of similar opinion about Harappans in near east, "(...) if people were moving from one region to the other, it is not unlikely that trading colonies were established at different locations along the trade route." He goes even further and suggests possibility of marriage exchange to solidify trade relations as documented in later historical periods (Kenoyer 2013). If true, this would obviously have implications in the spread of Harappan cultural elements in Mesopotamia.

Apart from the known settlement of Harappans, situated in the territory of the old city-state of Lagash, there is evidence that suggest colonies and trade enclaves of Indus merchants and craftsmen at many other sites in Mesopotamia (and surrounding area) like Ur, Kish, Susa, Elam and more.

The trade between Mesopotamia and Meluhha (the name of Indus in Mesopotamian records, agreed by most scholars) flourished with time and by the middle of third millennium BCE and later, a larger-scale trade is attested in archaeological records. Meluhhan ships exported to Mesopotamia precious

goods among which exotic animals, such as dogs, perhaps peacocks, cocks, bovids, elephants (? Collon 1977) precious woods and royal furniture, precious stones such as carnelian, agate and lapis lazuli, and metals like gold, silver and tin (among others Pettinato 1972; During Caspers 1971; Chakrabarti 1982, 1990; Tosi 1991; see also Lahiri 1992 and Potts 1994). In his famous inscriptions, Gudea, in the second half of the 22nd century BC, states that Meluhhans came with wood and other raw materials for the construction of the main temple in Lagash (see Parpola et al. 1977: 131 for references).

“(…) Indus settlers in Mesopotamia intelligently established critical connections with local cults and temples. Besides temple overseers, in charge of scribes and craftpersons, keepers and financers of sacred gardens, traders transporting cereals for the temples (…) Wood, timber for construction, ships and wooden furniture are consistently mentioned as coming from Meluhha, and both the trade in timber and the overall industry had a strategic economic role in 3rd and early 2nd millennium economies” (Vidale 2004).

During Casper (1979) concludes, “When one sums up the salient points (…) and adds them to various applicable factors (…) then one is almost irresistibly drawn to the acceptance of strong cultural and/or commercial liaison, between Mesopotamia and Indus valley, already established in Early Dynastic-or pre Akkadian-times.”

In this milieu, it is not unlikely that some Harappan musicians (and other performing artists) may have also reached Mesopotamia. A few possible scenarios could be as follows:

(a) It is seen everywhere in human societies that a certain percentage of population is always musically inclined, irrespective of their profession. Their level of expertise may vary but some of them would surely be very accomplished. In the absence of outrageous number of ways of entertainment and complicated life like modern times, it is highly likely that a larger percentage of people would have been musically active in the past. Music is also an integral part of many social (and personal) activities humans observe like religious practices, marriages, deaths and what more. Therefore, on account of these very natural reasons, the possibility of arrival of Harappan music in Mesopotamia seems likely even for no other reasons.

(b) For long distance trade, overland or maritime, it is likely that traders would keep means of entertainment along with them. Some big and wealthy traders could even carry along a reasonable orchestra, dancers or other performers with them. This can be postulated a little further that these artists would also perform for their friends, partners and wealthy customers in Mesopotamia (at the banquettes perhaps), which would not only be helpful for trade but could also have played a significant role in popularizing Harappan culture.

(c) Music (and other performing arts) itself is a profession and so is the business of making and selling musical instruments. The manufacturing of musical instruments would not be very different from that of royal furniture, which the Indus trade centers were regularly supplying to Mesopotamia. The possibility of involvement of Harappan craftsmen in the manufacture of musical instruments in Mesopotamia is thus a tenable premise and as evidence suggest, could be the case (see below).

This process may have its roots in early times of their relations due to these natural and trade related reasons. We should also remember the scale of such probable interactions in terms of both the area and time, which makes it more likely that the actual situation could be a combination of many such phenomena occurring simultaneously at different places and times in Mesopotamia.

While there is clear evidence for a lot of Harappan activity in Mesopotamia, situation back home in Indus Valley, surprisingly, was completely different. According to Vidale, "(...) it soon became clear that no Mesopotamian article – for example, not a single Sumerian cylinder seal – had been recovered at Mohenjo-Daro (nor would have been found in later excavations at other Indus sites). (...) On the basis of the present evidence, it is more likely that, although we have ascertained that Indian groups travelled, traded and settled in the west, Sumerians did not travel directly to the coasts and plains of the Indus, nor they settled – at least in substantial groups – in the Indus cities" (Vidale 2004). Parpola in his book "Roots of Hinduism" (2015) says that "(...) the fact that hardly a single object of clearly West Asian origin has been excavated in the Indus realm, makes it very unlikely that the language spoken by the Harappans was any of the West Asian languages". Another important issue here is that Harappans settled in Mesopotamia never came back. This situation, thus, forces us to conclude that any significant Mesopotamian impact on local musical traditions in Indus Valley is highly unlikely. But there can still be some (although,

most likely very rare) musical elements from Mesopotamia that may have reached Indian subcontinent. Such a find would be equally useful but the identification of those elements can be very tricky as there is no support in archaeology for such an occurrence. Therefore, any speculation in this regard should be splendidly supported otherwise.

But such ideas were presented earlier too. Archeomusicologist Fancis W. Galpin, in his 1937 book “The Music of Sumerians and their Immediate Successors – The Babylonians and Assyrians”, had drawn some parallels between Indian and Mesopotamian music and musical instruments. He even suggested the Indian origin of a couple of the instruments seen in Mesopotamia. Comparing the music, Galpin remarked that the musical note intervals were taken as “leaps” and “slides” in very ancient *sāman* chant of India, as in the modern *rāgās*. It may have been so in Babylonia, too (pp. 64). At that time, Indus civilization was recently discovered and little was known about the depth of inter-civilizational relationship, although it was evidently clear that there were connections between them. Unfortunately, nobody worked on musical instruments in the Indus civilization and this angle of musical connections was not investigated until this study.

We shall discuss textual and archaeological records separately in what follows.

Textual Evidence

Musical instruments have a unique, albeit majorly overlooked quality i.e. when they travel to other places, many a times, their names travel with them too, just like any technical term. E.g. Violin, Guitar and especially Harmonium (which has now become an integral part of Indian music), etc. are all known with the same names in India (and the world). This is a very common phenomenon recorded since ancient periods, e.g. musical terms from Sumerian are seen not only in Akkadian but also in Hittite, Egyptian, etc. as well. Therefore, if Harappan musical instruments indeed reached Mesopotamia, then it is possible that some of their ‘Indian’ names may also have got recorded in the text.

Language of Indus Valley civilization is among the most hotly debated topics with contenders including Dravidian, Indo Aryan, Austro-Asiatic, an unknown language and also ‘all of them’ probably with a *lingua franca*.

While musical tradition is not directly or specifically related to language but names of instruments are. Any surviving *Indian* names of instruments in Mesopotamian records can also give us some clues on language/s spoken by Harappans.

The Translators of *Meluhhan* Language in Mesopotamia

Assyriologist A. Leo Oppenheim in his book “Ancient Mesopotamia: Portrait of a Dead Civilization” 1964, mentioned a Mesopotamian cylinder seal referring to an interpreter of the “*Meluhhan*” language, Shu-ilishu, who probably lived around 2020 BCE during the late Akkadian period. Possehl (2006) suggested that he may have been literate and could read the undeciphered Indus script.



Fig. 3.1 Seal of Shu-ilishu, the Interpreter of Meluhhan Language

Fig. 3.1 shows a roll out of the seal. Iconography of the seal has a very curious thing to note: depiction of a musician playing an instrument. Musicologist Richard Dumbrill in his book “The Archaeomusicology of the Ancient Near East” (pp. 367) identified the instrument as a kettledrum placed on stand and a person sitting at far left is playing the instrument (c.f. Fig. 3.2, an example of similar tradition in India).



Fig. 3.2 Mizhavu, played in Koodiyattam performances in Kerala in southern India. In fact, a large variety of pot/kettle drums are found till today all over India. They are present since earliest known records, e.g. Rigveda mentions 'dundubhi', which is a kettledrum.

Specific depiction of a musician with an instrument on a seal related to an interpreter of Meluhhan language is quite intriguing and supports the assumption that Harappan traders may have brought musicians and musical instruments with them, or it may show some kind of significance of music (and animals) in relation with identity of Harappans in Mesopotamia. This appears quite probable when we see that about 50% of the Sumerian names of musical instruments and related words are quite similar to early Indian terminologies.

Sumerian (a language isolate) was chosen to be studied first (and the focus of present paper), because this was the language spoken in Mesopotamia at the time when relations between Indus and Mesopotamia started and developed. Akkadian (a Semitic language) started to spread in Mesopotamia after conquest of Sargon of Akkad around 2250 BCE (exact date is debated). Even then, Sumerian was still spoken in the region, creating a *sprachbund*, area of linguistic convergence (Deutscher 2007). It remained language of literature, liturgical and scientific texts. While it gradually became extinct as spoken language after 2000 BCE, as a classical language it was preserved till as late as around 200 BCE (100 AD?). Another issue is that Akkadian borrowed heavily from Sumerian. Therefore it was necessary to search for Harappan musical instruments in Sumerian first and then to extend the search in Akkadian. After all, the seal of interpreter of Meluhhan language, while from Akkadian period, still have inscriptions rendered in Sumerian.

Since, many a times, random phonetic similarities in some words can be found

between languages, certain strict measures were used to identify a positive result:

1. Words should, not only be similar phonetically but semantically as well, i.e. they should have similar meaning too. Only occasional variations within same context were allowed, which is a natural occurrence. Such as name of an instrument in one language recorded as part of instrument in other, or name of a performance or style recorded as name of instrument etc.
2. To maintain verifiability, the phenomenon to look for is “direct word transfer”. E.g. there should generally be no need to invoke proto-roots and create unattested combinations using them. This is not to suggest that such interactions may not have happened but these hypothetical occurrences were deliberately kept out from the present paper. For a nonmusical example, a person-name “*which sounds Indian and may be created by combining these two roots*” would not be considered as a positive result here.
3. Phonetic variations should be within the scope of the usual patterns seen in other words. A general formula for these patterns is given below.

Sumerian names of musical instruments were compared with early terms found in two major language families in India namely Indo-Aryan and Dravidian, as well as instruments from other areas, e.g. *Santhāli* terms. As the study commenced, some of the Sumerian terms began to show affinity to those found in early Sanskrit texts. These texts pertain to the same geographic area as that of Indus civilization. While there is a huge debate on their time periods, but at any rate, some of them are quite close temporally as well and even overlap with late Harappan period. Michael Witzel (1999) considers the early *Vedic* texts, since they are earlier than Dravidian texts by at least a thousand years, to be at an advantageous position of having the oldest linguistic data of the region.

Detailed list of words is given later in this text; here are just a few examples:

Sanskrit	Sumerian	Sanskrit meaning	Sumerian meaning
<i>ḍiṇḍima</i>	<i>dimdim</i>	a kind of drum	a musical instrument
<i>mṛja</i>	<i>meze</i>	a kind of drum	a drum
<i>śarkara</i>	<i>šukarak</i>	a kind of drum	a musical instrument
<i>vāṇa</i>	<i>bana</i>	arched harp	arched harp
<i>ḍamaru</i>	<i>dimmaršu</i>	a sacred drum	a musical instrument

<i>śamyā</i>	<i>šamuša</i>	a kind of cymbal or other musical instrument	a type of instrument
<i>mangalatūrya</i>	<i>malgatum</i>	an instrument played at festivals	a musical instrument
<i>mṛtyutūrya</i>	<i>miritum</i>	an instrument played at funerals	a musical instrument
<i>sāyaṃtūrya</i>	<i>sabitum</i>	an instrument played at evening	a musical instrument
<i>kinnara</i>	<i>nar</i>	a class of anthropomorphic musicians and singers	a musician and singer
<i>ṣaḍja</i>	<i>sagida</i>	a musical notation	a musical notation
<i>gada</i>	<i>gude</i>	a musical instrument	a lute
<i>gargar</i>	<i>harhar/ ḡarḡar</i>	a lute	a musical instrument
<i>svara</i>	<i>saḡara</i>	a musical notation	a musical notation
<i>stavitṛ</i>	<i>eštu</i>	a praiser, singer	a type of singer
<i>gaṭṛ/gala</i>	<i>gala</i>	a singer/a musical instrument and throat	lamentation singer

388

389 There are about 60 words in total in Pennsylvania Sumerian dictionary that are
390 related to music, particularly in categories like singers, musical instruments,
391 musical notation, songs, etc. Out of which some 30 words are found to be very
392 similar to Sanskrit phonetically as well as semantically but with an apparent
393 “Sumerianization”, as evident in examples given above.

394

395 Interestingly, many similar instruments are found in the southern region of India
396 as well, where the Dravidian languages are primarily spoken today and similar
397 cultural symbolism can also be seen in their designs. But the Dravidian names of
398 instruments did not show resemblance to Sumerian names, except for just a
399 couple of terms, which too seem to be of Sanskrit origin. In fact, there are many
400 terms of Sanskrit origin in south Indian musical spheres. Another clinching
401 evidence comes from a study of musical scales. There are some seven scales
402 mentioned by Anne Kilmer that are recorded in Mesopotamia; all of which are
403 *heptatonic* (having seven notes) (Kilmer 1998) and are descending in order
404 (Dumbrill 2017). Earliest known scale from north India is of *Sāmveda*, which too
405 is *heptatonic* and descending; and importantly, it is similar to one of those seven
406 recorded in Mesopotamia. Whereas, scales in early Dravidian texts are *pentatonic*
407 (having five notes) and only later *heptatonic* scales enter Dravidian music.

408

But the curious part is the “*Sumerianization*” seen in most cases. Which is, in a way, seems similar to “Phono-Semantic Matching”.

Phono-Semantic Matching

Phono-semantic matching (PSM) is the incorporation of a word into one language from another, often creating a neologism, where the word's non-native quality is hidden by replacing it with phonetically and semantically similar words or roots from the adopting language. Thus, the approximate sound and meaning of the original expression in the source language are preserved, though the new expression (the PSM) in the target language may sound native. (See Zuckermann 2003a, 2003b, 2004, 2006, 2009)

One of the Sumerian text (from Sargonic period) records that Lu-sunzida “a man of Meluhha” paid to the servant Urur, son of Amar lu KU, 10 shekels of silver as a payment for a tooth broken in a clash. The original text is as follows:

BM 86314 = E. Sollberger, CT 5o (1972) no. 76.

Obv.

1. 10 gin kug

2 kug zu gul-la-kam

3 ur-ur ni-is-ku

4 dumu amar-lu-ku₄

5 lu-sun-zi-da

6 lu me-luh-ha-ke

7 i-na-ab-su-su

Rev.

8 lugal-iti-da

9 maskim

10 ugula EN-ilu

The name Lu-sunzida literally means “Man of the just buffalo cow,” a name that, although rendered in Sumerian, according to the authors (Parpola et al. 1977), does not make sense in the Mesopotamian cultural sphere and must be a translation of an Indian name (Vidale 2004). Another similar example is found on an Indus style seal with Sumerian inscription from 2500 BCE. (Aruz & Wallenfels

2003a no. 301b, p. 410; Gadd 1932a no.1, pp.5-6, pl.I: 1; Mitchell T C 1986a no.7, p.280, fig.111; Woolley 1956a p.174). The inscription on the seal is believed to be an Indian name translated to Sumerian (either SAG.KU(?).IGLX or SAG.KU(?).P[AD](?)). Unfortunately, in both the cases, we don't know their original Indian forms; therefore it cannot be verified that whether or not these names had any phonetic similarity to their respective origin. But this is not the situation with the names of musical instruments and other words that are found in this study, as corresponding Indian words are known.

Curiously, a comparative study demonstrated certain patterns in the way words were *sumerianized* in terms of handling of phonemes and word structures that are not compatible with Sumerian. Some part of it could be a necessity to make them expressible in the Cuneiform script.

Sanskrit has 33 consonants, 11 vowels (14 in Vedic variety), whereas Sumerian has only 16-18 consonants and 4 vowels (Sumerian is still not understood well and there is a debate on their exact number of consonants and vowels and their phonetic values). There are other inherent limitations too, like no word in Sumerian can have two or more consecutive consonants in the beginning or at the end of the word and not more than two anywhere in the word (mostly at the intersection where morphemes join). This is not the case with Sanskrit, which uses clusters of half syllables (consonants with no power or vowel attached to it) as well as many compounds like *tr*, *pr*, etc. Let us call them "*non-compatibles*" here, some examples are mentioned with the list of words.

Close study of musical terms suggested some consistency in process of *sumerianization*, which was evident in majority of cases. It can be loosely understood in general as:

Sanskrit word → Removal of non-compatibles → Replacement with closest Sumerian phoneme/morpheme/root/word → Final word rendered in Sumerian

Along with this (a sort of) global theme, some other intermittent sub-patterns were also observed in some examples (mentioned with the associated words in the list).

Words related to Music

Sans. = Sanskrit

Sum. = Sumerian (Period of attestation is given with the words wherever possible)

Akk. = Akkadian (while Sumerian is point of discussion here but Akkadian terms are given wherever possible)

wr. = written as

(1) Sans. **ḍiṇḍima** डिण्डिम a kind of drum. This instrument is played till today in India, known as *dimdi*.

Sum. **dimdim** a musical instrument wr. $\text{ḡešdim}_3\text{-dim}_3$

ṇ (𑌶) is a non-compatible, rest of the word remains the same. In Sanskrit, there are many similar names of instruments like *dundubhi*, *dardura*, *dardara*, *bhambha*, etc. as found in the *Rigveda* and later texts, showing a continuing tradition of such names.

(2) Sans. **mṛja** मृज a kind of drum (lex., *mṛj* root RV, AV)

Sum. **meze** a drum (3x: Old Babylonian) wr. *me-ze₂*; *meze*; *mezem?*

Akk. *manzû*

‘two consecutive consonant in the beginning of the word’ and ‘ja’ are non-compatibles. (‘ṛ’ is actually a vowel in Sanskrit, which is also not present in Sumerian). Interestingly, while *mṛja* is shown as lexical entry in Sanskrit dictionaries but a somewhat ‘*apabhraṃśa*’ (literally means “corrupt”) and probably later form ‘*muraja*’ is attested in *Mahābhārata* and *Nāṭyaśāstra*.

(3) Sans. **śarkara** शर्कर, a kind of drum

Sum. **šukarak** a musical instrument (5x: Old Akkadian, Ur III, Old Babylonian) wr. ḡeššû-kara_2

(4) Sans. **sālikā** सालिका a kind of flute

Sum. **SALI** a musical instrument wr. SA.LI Akk. *Pagû*

Large number of similar variations or word pairs are seen in Sanskrit itself

and in later IA languages as well, e.g. *bhumi-bhumika*, *jeev-jeevika*, etc. Alternatively, removal of 'kā' could be an example of clipping, a.k.a. "truncation" or "shortening"; in this particular case *apocope*, i.e. the loss of one or more sounds from the end of a word. Clipping is seen in many other examples as here. There are no non-compatibles, hence, no change in the word otherwise.

- (5) Sans. **vāṇa/bāṇa** arched harp, arrow (Rigveda), a harp with 100 strings (*Taittirīya Saṃhitā*, *Brāhmṇa*, *Śrauta Sūtra*)
Sum. **bana/pana/ban** arched harp; bow; a geometric figure (63x: ED IIIb, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian) wr. $\text{êš}^{\text{š}}$ pana; ba-na; $\text{êš}^{\text{š}}$ pana_x([ŠE.NUN&NUN]) Akk. qaštu

Both the syllables are non-compatible, but such isoglosses are commonly seen. Similar variations of the word are found in Indian musical sphere too like *Bāṇam* and *Pena* (both instruments *played using a bow*). A sign in Harappan script is clearly derived from a multi-stringed arched harp (Sachs 1944) (sign no. 311 Mahadevan 1977). Indus script possibly had its roots in about 3500 BCE and was fully formed by 2800 BCE (Kenoyer, 2006b). Their presence in script suggests that they were already popular by then. Therefore, it is highly likely that multi stringed arched harps were present in Indus culture at least (well) before 2800 BCE. It is also an important instrument in *vedic* literature, in Rigveda and others. *Taittirīya Saṃhitā* mentions it as an instrument with 100 strings. A simple single stringed 'harp' i.e. 'musical bow' is basically a bow in construction with a simple resonator e.g. human mouth, any pot with bow resting on it while playing, a gourd, etc. Men probably had bows long before 3500 BCE (13000 BCE?). Adding one more string is very easy and in a way, an obvious next step. So it is not improbable for harps to have evolved into simple multi stringed variety (e.g. 2 or 3 strings) relatively early after people had realized musical use of a bow. Harps continued and remained popular in India till as late as second half of 1st millennia AD, after which they faded away.

Vāṇa appears to be an onomatopoeic word, which represents sound of the string of bow or bow-shaped harp. Phonetic quality of the second syllable *ṇ* is very close to sound of resonance of a vibrating string that is heard *after* the initial attack of the sound. Fig. 4 shows volume envelope curve (ADSR) of a sound waveform. This phenomenon can be easily experienced by

vocalizing or mimicking sound of any stringed instrument that decays quickly i.e. which do not have long or continuous sound like a violin. E.g. a musical bow, but any similar sound would suffice for the purpose. When we try to vocally mimic sound of a vibrating string, a component of a nasal /ŋ/ like sound is mostly present there in combination with other sounds depending on timber of instrument being mimicked.

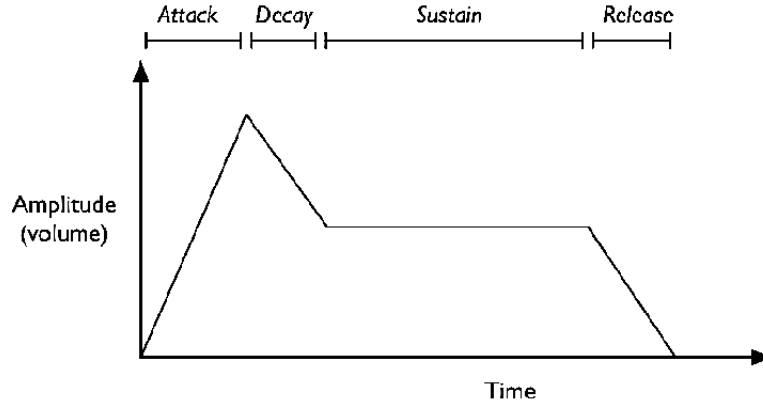


Fig. 4 Volume envelope curve (Attack-Decay-Sustain-Release) of a sound waveform

In the Vedic literature, another meaning of *vāṇa* (or *bāṇa*) is 'arrow'. This is interesting; as a similar sound would be produced by the action of shooting an arrow. Hollow and airy quality of /v/ could be a representation of whizz of arrow and /ŋ/ of the sound of the string vibrating after that. This suggests a possibility that origin of this word could be very old, expressed in the root **vaṇ** (√ वण्), to sound. Thus, *Vāṇa* could be what produces that sound whether it's an arrow or the bow itself in the form of a harp. There are many other words found in Sanskrit text which clearly indicate its relation to sound, such as:

vaṇa वण sound, noise

vāṇī वाणी sound, voice, music (*plural* a choir of musicians or singers)

vīṇā – A generic term for the category of stringed instruments. Also used as suffix with any instrument that is stringed, to denote its nature. E.g. *Kachhapi vīṇā*, *Rudra vīṇā*, etc. In other words, *vīṇā* could be any instrument that produces the sound by means of vibrating string. It appears in *Taittirīya Saṃhitā* and *Atharva veda* and remains highly popular till today. It is possible that *vīṇā* is an invented term, coined colloquially most probably by musicians (and not grammarians).

kvaṇa क्वण the sound or tone of any musical instrument

- 588 **dhvaṇ** ध्वन् to sound
- 589 Interestingly, in both the above example (*kvaṇa*, *dhvaṇ*) different
- 590 phonemes are added in the beginning of the word. As explained above, this
- 591 could be due to different characters of the sounds these words may be
- 592 representing. E.g. *kvaṇa*, with its strong attack section, could be inspired
- 593 from sound of a string instrument played with a plectrum, which would
- 594 naturally have stronger attack than something played with fingers. C.f.
- 595 *kvaṇit* to vibrate.
- 596 **śravaṇa** श्रवण the act of hearing *śatapatha brāhmaṇa*, *mahābhārata*, etc.
- 597 **vāṇaśabda** वाणशब्द the sound of a lute, the whizz of an arrow (here the
- 598 connection is with lute instead of harp along with arrow, which may
- 599 suggest that its not about a particular instrument but the sound of it).
- 600
- 601 While arched harp exists in Dravidian records too but the Dravidian word
- 602 for it, 'vil' or 'vilyazh', does not match as closely with the Sumerian word.
- 603
- 604 In the context of Indo-European languages, the word *vāṇa* is exclusive to
- 605 India. It is part of those about 300 words from *Rigveda* listed by Kuiper
- 606 (1955, 1991) and proposed to be part of 'Harappan' language by some
- 607 (Witzel 2001(?)).
- 608
- 609 (6) Sans. **gargara** गर्गर a kind of musical instrument (*Rigveda* viii , 69 , 9)
- 610 (possibly a lute)
- 611 Sum. **harhar/gargār** a musical instrument (31x: Ur III) wr. ḡešhar-har
- 612
- 613 (7) Sans. **sara** सर a cord, string (c.f. sans. **trisarī** त्रिसरी Name of a stringed
- 614 instrument having three strings)
- 615 Sum. **sa** string (of a bow, musical instrument), gut, sinew, tendon, catgut
- 616 string (68x: Old Babylonian) wr. sa Akk. dāmu; erru; matnu; pitnu
- 617
- 618 It could be result of clipping seen in many example here. Attestation is late
- 619 in Mesopotamia and there are older words with similar meaning. *Sā* is also
- 620 an abbreviation for the first note in Indian scales.
- 621
- 622 (8) Sans. **stavitr** स्तवितृ a praiser, singer, *Maitrāyaṇī Saṃhitā*

- 623 Sum. **eš₃ta₂lu** a type of singer (2x: Old Babylonian) wr. eš₃-ta-lu₂; aš-ta-lu₂
 624 Akk. aštalû
 625
 626 Sanskrit word is pronounced as *istavitr*. –*vit* is clearly a non-compatible.
 627 Word seems to have entered in Akkadian period as attestation is late and
 628 word is very similar in both Sumerian and Akkadian.
 629
 630 (9) Sans. **gātr** गान्त्र a singer
 631 Sans. **gala** an instrument; throat; also **gai** singer
 632 Sum. **gala** singer, lamentation singer (500x: ED IIIb, Old Akkadian, Lagash
 633 II, Ur III, Old Babylonian) wr. gala; gala₁₀ Akk. kalû
 634
 635 (10) Sans. **Svara** musical notation (*Rigveda*)
 636 Sum. **saġara** a musical notation (54x: Old Babylonian) wr. sa-ġar-ra
 637
 638 ‘*sva*’ is non-compatible.
 639
 640 (11) Sans. **ṣaḍja** षड्ज A musical notation, an ancient musical scale (one of the
 641 three ancient intonation schemes i.e. *grama*) *Nārdiya Śikshā*, *Nātyaśāstra*,
 642 etc.
 643 Sum. **sagida** a musical notation; a musical instrument (59x: Old
 644 Babylonian) wr. sa-gid₂-da Akk. sagiddû
 645
 646 ‘*dja*’ is non-compatible.
 647
 648 (12) Sans. **godhā** गोधा a chord; a musical instrument - possibly a lute (Griffith,
 649 Roth, Hillebrandt etc.) (*Rigveda* viii, 58, 9). Sans. **godhāvīṇākā** गोधावीणाका a
 650 kind of stringed instrument (*Kātyāyana Śrauta Sūtra* xiii, 3, 17) (the term
 651 *godhāvīṇākā* would generally mean “a *vīṇā* i.e. stringed instrument named
 652 *godhā*”). Also Sans. **gada** गद name of a musical instrument, and Sans. **guṇa**
 653 गुण the string of a musical instrument, chord
 654
 655 Sum. **gude** lute (1x: Old Babylonian) wr. gu₃-de₂
 656
 657 Non-compatible ‘*o*’ and ‘*dhā*’. It is seen in many examples here that ‘*o*’ is
 658 seemingly replaced by other vowels.

659

660 (13) Sans. **ḍamaru** डमरु a sacred drum shaped like an hourglass, used by the God
661 śiva

662 Sum. **dimmaršu** an instrument (1x: Old Babylonian) wr. ^{ḡeš}dim₃-mar-šu
663

664 Fancis Galpin (1937) had suggested that *ḍamaru* may have originated in
665 Indus Valley. There is a signs in Indus script that appears quite similar to it
666 (sign no. 214 and its variations, Mahadevan 1977). *Ḍamaru* is the
667 instrument of śiva in Hinduism, the originator of music. Hourglass drums
668 are played till today in sumptuous varieties throughout India, which
669 supports its ancient Indian origin as suggested by Galpin and others.
670

671 (14) Sans. **ghuṣ** घृष् to sound; to cry or proclaim aloud, call out, announce
672 publicly, declare, etc. (Rigveda, Mahabharat, etc.)

673 Sans. **ghoṣa** घोष The sound of a drum (or any musical instrument), of a
674 conch-shell, of the soma stones, of a carriage, etc. *Rigveda*, *Atharvaveda*, etc.

675 Sans. **ghoṣavatī** घोषवती a peculiar kind of stringed instrument
676

677 Sum. **guš** a musical instrument?; a part of a musical instrument? (1x: Old
678 Babylonian) wr. ^{ḡeš}gu₂-uš

679

680 Although exact meaning is not clear in Sumerian but relation to music is
681 apparent. Only comes in a praise poem of Culgi. (^{ḡiš}gu₂-uš za-mi₂-a kam-ma
682 sag₉-ga mi-ni-zu (Culgi B, 161))
683

684 (15) Sans. **śamyā** शम्या a kind of cymbal or other musical instrument

685 Sum. **šamuša** type of instrument? (1x: Old Babylonian) wr. ša-mu-ša₄
686

687 'y' is non-compatible.
688

689 (16) Sans. **kamrā** कम्प्रा a kind of musical instrument

690 Sum. **kamma** a part of a musical instrument?; tuning? (2x: Ur III, Old
691 Babylonian) wr. kam-ma
692

693 (17) Sans. **mṛtyutūrya** मृत्युतूर्य a kind of drum beaten at funeral ceremonies

694 Sum. **miritum** a musical instrument (4x: Old Babylonian) wr. mi-ri₂-tum

695

696 Very difficult word from Sumerian perspective with many non-compatibles
697 like consonant cluster in the beginning 'mṛty', as well as ending 'tūrya'. There
698 is a particular pattern is seen in many examples here in use of 'tum' (or
699 lum/hum, etc.) as a replacement for such non-compatible parts at the end of
700 the word.

701

702 (18) Sans. **sāyaṃtūrya** सायंतूर्य instrument played in evening

703 Sum. **sabitum** a musical instrument (5x: Ur III, Old Babylonian) wr. ḡešsa-
704 bi₂-tum; sa-bi₂-tum

705

706 'y' is non-compatible (ṃ is a transliteration of *anuswaar*) and also the 'tum'
707 pattern is present for non compatible ending *tūrya*.

708

709 (19) Sans. **maṅgalatūrya** मङ्गलतूर्य a musical instrument used at festivals

710 Sum. **malgatum** a musical instrument; a type of song (5x: Old Babylonian)
711 wr. ma-al-ga-tum Akk. malgātu

712

713 (20) Sans. **āḍambara** आडम्बर a kind of drum

714 Sum. **adab** a drum; a song (42x: Old Babylonian) wr. a-da-ab; a-da-ba
715 Akk. adapu

716

717 Clipping or shortening of *apocope* variety seems to be the case here, as seen
718 earlier in *sālikā/SALI* and other words.

719

720 (21) Sans. **śabdaviśeṣa** शब्दविशेष a particular note, the varieties of sound (these
721 the sāmkhya- arranges according to the accents, udātta-, an-udātta-,
722 svarita-, and the notes of the gamut, ṣaḍ-ja-, ṛṣabha-, gāndhāra-,
723 madhyama-, pañcama-, daivata-, niṣāda-, etc.)

724 Sum. **sabarsud** notation; composition division notation (1x: Old
725 Babylonian) wr. sa-bar-sud

726

727 (22) Sans. **kroḍa** क्रोड an additional verse or note, a notation

728 Sum. **kidu** a musical notation (1x: Old Babylonian) wr. ki-du₁₂

729

- 730 (23) Sans. **karatāla** करताल beating time by clapping the hands, clapper, small
 731 cymbals, clappers with cymbals, etc. Kara (RV)+ Tāl (Tal root (RV)) Nardiya
 732 Shiksha, bhāgavata-purāṇa
 733 Akkadian. **Katral** small cymbles?, clapper? Galpin (1937), Sachs (1940)
 734
 735 *karatāla* is made from combining *kara* i.e. hand (*Rigveda*) and *tāla* i.e.
 736 rhythm (*Naradiya Shiksha*, root *tal*, present in *Rigveda*). Galpin (1937)
 737 connected the Akkadian word ‘*katral*’ to small cymbal and suggested its
 738 origin from Indian word ‘*karatāla*’. But Curt Sachs in “History of Musical
 739 Instruments” (1940) identifies Indian *karatāla* with clappers and so he
 740 disagrees with Galpin’s identification of the instrument but he agrees that
 741 “the Akkadian term ought to be taken from it (Indian term *karatāla*) and
 742 transformed by metathesis”. This confusion about exact meaning is easily
 743 understandable if one looks at the vast tradition of *karatāla*-s all over the
 744 subcontinent. It is one of most popular percussion instrument in folk,
 745 temple related and classical music in some form or other. Sage *Narada*, the
 746 celestial musician of highest regard in Sanskrit texts, is always depicted
 747 with a *vīṇā* and a *karatāla*. There are innumerable varieties of *karatāla*-s
 748 found in India since ancient times ranging from two simple pieces of wood
 749 or small cymbals to highly decorated or zoomorphic clappers with
 750 jingles/small-cymbals and/or small metallic rattles attached to them. Usage
 751 of the word is same all over India including Dravidian speaking south. The
 752 word *karatāla* represent a family of instruments, which sound somewhat
 753 like handclap and perform a similar function in music i.e. of keeping time.
 754 There is a sign in Indus script (sign no. 294 Mahadevan 1977) similar to the
 755 clappers seen in Mesopotamian iconography, being played by
 756 anthropomorphic musicians (discussed in detail in the section of
 757 Archaeological Evidence). Although it is a simple shape but as arched harp
 758 and *damaru* are seemingly represented in the indus script, it becomes
 759 tenable that there could be a few more script signs inspired by musical
 760 instruments, at least the most popular ones.
 761
 762 (24) Sans. **sindhu** सिन्धु a *rāga* in Indian classical music (a *rāga* is a melodic
 763 framework based on which many compositions/songs can be performed)
 764 **sindhu bhairavi** सिन्धु भैरवी a *rāga*
 765 **sindhi bhairavi** सिन्धी भैरवी a *rāga*
 766 **Sindh** सिन्ध a *rāga*

767 *sindhurā* सिन्धुरा a *rāga*

768 *sindhurā bhairavi* सिन्धुरा भैरवी a *rāga*

769 Sans. *sindhu* सिन्धु the name of the river Indus

770

771 Sum. *endu* a song (76x: Lagash II, Ur III, Old Babylonian) wr. en₃-du; en-du

772 Sum. *enduana* a song (1x: Old Babylonian) wr. en₃-du-an-na

773

774 Sum. *enduġarġar* composer (1x: Old Babylonian) wr. en₃-du-ġar-ġar

775 Importantly, *gargara* is an instrument mentioned in *Rigveda*.

776

777 Sum. *endudugdug* chanter? (1x: Old Babylonian) wr. en₃-du-dug₄-dug₄

778

779 Despite similar names, they are different *rāga*-s. Many of them are present

780 in both Hindustani (northern) and Carnatic (southern) classical music and

781 existent as important part in long standing folk traditions of Rajasthan,

782 Sindh, Gujarat and Panjab. Sans. *sindhu* सिन्धु is the name of the river Indus;

783 it has been used in identification of geography, populace and cultures of

784 Indian subcontinent (or part of it) by outsiders throughout later historic

785 period and from which India got its names (more on that later with word

786 no. 55 Sum. *hindum*, beads).

787

788 (25) Sans. *lāsya* लास्य dancing, a dance (*especially* accompanied with

789 instrumental music and singing), a dance representing the emotions of love

790 dramatically (this was at one time a principal part of the drama), including

791 also a style of dramatic composition in which there is abrupt transition

792 from Sanskrit to Prakrit and from Prakrit to Sanskrit; the term *lāsya* is also

793 applied to the *Nach* [Nautch] dance of the Indian dancing girls, consisting

794 chiefly of gesticulation with a shuffling movement of the feet forwards and

795 backwards, as invented by *pārvati* (wife of *śiva*) and opposed to the

796 boisterous masculine dance called *tāṇḍava* practiced by *śiva* and his

797 followers (*Mahābhārata*, *Nāṭyaśāstra*, etc.) Also Sans. *las* लस् to sound,

798 resound; to play, sport, frolic; to embrace; to dance; to cause to teach to

799 dance; to exercise an art

800

801

802

Sum. **lilis** a musical instrument, kettledrum (8x: Old Babylonian) wr. li-li-is₃; li-li-is₃^{zabar}; li-li-is₂; liliz Akk. lilisu



Fig. 5: *Lilis*

Lilis seems most likely of Indus origin because the tablet on which its drawing and name is present (Fig.5), also has a humped bull shown on it, which is native to south Asia only. The bull is sitting in a calm position similar to how it is represented heavily in śiva-’s temples in India. On the other hand, *lāsya* is related to *pārvati*, wife of śiva.

(26) Sans. **bhāṇḍa** भण्ड a musical instrument, any pot (especially metallic) implement, tool, instrument (root **bhaṇ**, to sound, most probably onomatopoeic, has resemblance to the sound of metallic object/pot struck loudly.)

Sans. **bhāṇḍa** भण्ड a class of folk musicians, performers and entertainers. Later became a cast. Also known for using disguises during performances, also a jester, buffoon, mime

Sans. **bhāṇḍa** भण्ड a form/school of drama and performance; can also mean mimicry, buffoonery. C.f. **bhāṇa** भाण name of a sort of dramatic entertainment (in which only one of the interlocutors appears on the scene, or a narrative of some intrigue told either by the hero or a third person)

Sans. **bhaṇḍila** भण्डिल an artisan

Sum. **balaḡ** a large drum or harp (154x: ED IIIa, ED IIIb, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian) wr. balaḡ; ḡešbalaḡ Akk. balangu

Sum. **balaḡ** temple functionary or servant Gods, associated with variety of instruments (Wolfgang Heimpel, Franklin John Curtis 2016)

Sum. **balaḡil** musician (1x: Old Babylonian) wr. balaḡ-il₂

bh>b is easy, ‘ṇḍa’ is non-compatible. There is a similar example in category of ‘Other Words’ below, sans. śaṇḍa → sum. saḡḡa, which replaces ṇḍa with ḡḡa. Whereas in this case, instead of bhāṇḍa to something like baḡḡa, a ‘la’

is also present between *ba* and *ĝ*. A deeper study revealed that there is no word in Sumerian (PSD) that starts with *ba* followed by *ĝ*, effectively rendering *ba-ĝ* combination, a non-compatible. *Ba-la* combination, on the other hand, is present in many other words.

bhāṇḍ-s are a class of traditional folk entertainers of India. In later time it became a cast. According to Henry Miers Elliot (Supplement to the glossary of Indian terms, N.H. Longden, 1845), "(...) Those also are called *Bahand* (*bhāṇḍa*) who without reference to caste follow the occupation of singing, dancing, and assuming disguises (...)"

Today *bhāṇḍ*-s are present in Uttar Pradesh, Kashmir, Panjab, etc. in India. While most present day *bhāṇḍ*-s belong to families that are/were engaged in folk entertainment as their hereditary profession, their specific art forms vary greatly by region, community and language. The term *bhāṇḍa* itself can also mean a specific dramatic story or an entire form/school of drama.

(27) Sans. ***Svara*** sound of any musical instrument or singer; music; notation, etc. (Rigveda)

Sum. ***sur*** plectrum?; a musical instrument? (1x: Old Babylonian) wr. *ĝešsur*₉
Akk. zannaru

Exactly same variation (*sur*) is present in many later Indian languages as well. Exact meaning is not clear in Sumerian.

(28) Sans. ***vidūṣaka*** विदूषक a jester, wag, buffoon (*especially in dramatic language*) (Bhagvata Purana, etc.)

Sum. ***uddatuš*** jester (40x: ED IIIb, Ur III, Old Babylonian) wr. *ud-da-tuš*

Apart from non-compatible beginning 'vi-', there is no Sumerian word (PSD) that ends with '-saka'. Sans. *vidūṣaka* is mentioned as "the jocose companion and confidential friend of the hero of a play (he acts the same confidential part towards the king or hero, that her female companions do towards the heroine; his business is to excite mirth in person and attire, and to make himself the universal butt; a curious regulation requires him to be a Brahman, or higher in caste than the king himself)" (Monier William Sanskrit dictionary).

878 (29) Sans. **kinnara** (*kiṃnara* pronounced **kinnara**) किन्नर *kiṃ+nara* literally “is
879 it a man?” “whether a man?” “what sort of a man?”; anthropomorphic
880 mythical beings with a human figure with animal head or animal figure
881 with human head, usually horse or bird but may be others too; reckoned
882 among the *gandharva*-s or celestial choristers and celebrated as musicians;
883 also attached to the service of *kubera*; a class of traditional musicians and
884 performers known for their use of animal costumes and disguises, similar
885 traditions still continue in small pockets; in Jainism, one of the eight orders
886 of the *vyantara*-s
887 Sans. **kinnarā** किन्नरा a kind of musical instrument
888 Sans. **kinnari** a lute, also a female *kinnara*
889 Sans. **kinnara** kingdom- a kingdom of *kiṃnara*-s in *Mahābhārata*
890 Sans. **kinnara nagara** किन्नर नगर a town of the *kiṃnara*-s (*Divyāvadān*)
891 **kinnaur** – name of a present day district in northern state of Himachal
892 Pradesh in India.
893
894 Sum. **nar** musician; singer (643x: ED IIIa, ED IIIb, Ebla, Old Akkadian,
895 Lagash II, Ur III, Early Old Babylonian, Old Babylonian) wr. nar
896 Akk. **kinnāru** a lyre
897 Akk. **nāru** a musician and singer
898 Akk. **nārē** a band of lyre and harp players
899 Egyptian. **knr** a lyre
900 Hittite. **Kinir** a lyre
901 Hurrian. **kinnar uhuli** a lyre player
902 Hebrew. **kinnor** a lyre
903
904 The cuneiform sign for Sumerian ‘*nar*’ is derived from a pictogram of an
905 animal head (Cheng 2009). Similarly, *kinnara*-s in Sanskrit records, are
906 often depicted with animal heads or as part human and part animal/bird.
907 There is a remarkable tradition of mixing animal and human attributes
908 recorded in Harappan archaeology and in later periods in south Asian
909 cultures; (more on that later in the section of archaeological records). This
910 word seems to follow the pattern of “clipping” as found in some other
911 words, in this particular case, “initial clipping”, “apheresis” or “procopé”.
912 Initial clipping retains the final part of the word, e.g. *phone* (telephone), *net*
913 (Internet), *gator* (alligator), *varsity* (university), etc. Other similar example
914 here is Sans. *romaś/lomaś* → Sum. *maš*, a goat (see below). But curiously, in

both the cases, the removed first syllable is also accompanied with a non-compatible, i.e. vowel 'o' in *romash* and *anusvāra* with 'ki' in *kiṇnara*, expressed as a dot in *devanāgrī* script as किं and transliterated as *ṁ*. Pronunciation of *anusvāra* depends on the sound that follows. In *kinnara*, it is pronounced as the first 'n'. Sans. *Kiṇnar* is not a word but actually a sentence with a question mark in it "*kiṇ nara?*" meaning "what sort of a man?" or "is this a man?" etc. (in a way, expressed as "What! man?"). It encapsulates the expression of an astounded observer. Both '*kiṇ*' and '*nara*' are *Rigvedic* words. Apart from the popular clipped version, i.e. Sum. '*nar*' or Akk. *nāru*, etc., the word is duly present in its entirety as well in names of instruments and as musicians in Mesopotamia and surrounding region in many languages like Akkadian, Hittite, Egyptian, etc. and remained popular till later, e.g. attested in Hebrew Bible as *kinnor*, a lyre. Parpola (2010) confirms with help of Assyriologists that its word structure doesn't match with west Asian languages and is clearly of south Asian origin.

A detailed comparison of the tradition of anthropomorphic musicians in both the cultures is given below in the section of archaeological records.

(30) Sans. **ājākāra आजकार** *śiva*-s bull

Sum. **alġar** a musical instrument, bull lyre (Galpin 1937, Dumbrill 2005, Cheng 2009, etc.) (12x: Old Babylonian) wr. ḡeš-al-ġar; al-gar Akk. Alû

'j' is non-compatible. k>g/ġ is seen in other examples here but it is also present in Sanskrit itself e.g. *abhikara/abhigara* (a priest). *ājākāra* to *alġar*, not only fits well according to the formula but also, importantly, to the traditions of naming instruments in India, (discussed below). An instrument named '*algojā*' is still found in folk music of modern day Panjab, Rajasthan and Sindh (all of which are home to many important Harappan sites), although it is not a stringed instrument anymore but a pair of reed flutes.

Śiva is considered to be the originator and supreme God of music and there are many terms in south Asian musical spheres that are related to him or to the concepts associated with him, which include names of instruments, *raga*-s (scales), *tāla*-s (rhythmic meters), dance forms, poetic meters and more (see *ḍamaru* and *lāsya* above). In later periods, in India, word *nandi* is

attested as *śiva*'s close aid and his bull (actually a bull-calf). Consequently, in *Mahābharta* and *sutrā* literature of late *vedic* period, bull-shaped instrument too gets the moniker '*Nandi*', mentioned as an instrument played on happy occasions. *Nandi* as instrument is attested later in *Harivamsh* as well, after which it doesn't seem to be mentioned anywhere. But many other instruments associated with *Śiva* (e.g. *rudri/rudra vīṇā*, *damaru*, etc.) and *rāga*-s, *tāla*-s, etc. continues till today.

Traditions of naming instruments in India – In India, names of instruments are mostly found to be auto-logical or self-describing and sometimes onomatopoeic (representing sound of the instrument). Thus, names mostly give additional information about the instruments. While concentration of this discussion is on Sanskrit but similar practices are found in all language families in India, which is in a way, remarkable.

- A. Sometimes they describe shape of the instrument like *Kachchapi* – a lute shaped as tortoise or *Kachchapa*; *Mayuri* – a lute shaped like peacock or *Mayura*, *Gomukha* – an instrument with cow/bull face, *Nandi* – an instrument shaped like bull, etc. There are many such examples mentioned later. If it is a stringed instrument of any kind then some times word "*vīṇā*" is suffixed with names to denote that.
- B. Material used in manufacture like *Vamsha* – a flute made from *vamsha* i.e. bamboo; *Mridang* – a horizontal drum played from both sides, made from *Mrida* i.e. clay; *Tumbi vīṇā* – a lute which has a *tumbi* i.e. a gourd used as a soundbox.
- C. Sound of instrument – *Dindima*, *Gubguba*, *Tuntuna*, *Vāṇa*, etc.
- D. Number of strings in the instrument like *Ektantri*, *Dotārā*, *Sapta tantri*, etc.
- E. Based on name of the person/deity they belong like *Rudri/Rudra-vīṇā*, *Saraswati vīṇā*, *Rāvan-Hast*, instruments related to *Śiva*, *Saraswati* and *Rāvana* of *Rāmayan* respectively; *Tumburu vīṇā*, the *vīṇā* of a celestial anthropomorphic musician *Tumburu*) and *Kinnari/Kinnarā/Kinnaram*, instruments related to *Kinnara*-s.

While all of these musical terms are fully verifiable in both the languages but it could be confirmed further. If these findings were correct about the kind of

cultural impact this list suggests, then there must be more words in Sumerian records pertaining to the other fields and activities for which there is direct or indirect evidence for Harappan involvement of some kind, belonging to same underlying language as that of musical terms (i.e. Sanskrit) and also exhibit similar patterns in the process of *sumerianization*.

Below is a list of terms found in other areas. Same strict measures were employed to identify a positive result as mentioned earlier along with an added condition that it should be related to the fields or activities that can be linked to Harappans or south Asia in some way.

Trade and Craft Related Words

Units of Measurement

Harappan style weights have been found not only in Mesopotamia but also in Bahrain, Oman, etc. in archaeological records. The same appears to have reflected in the Sumerian text as well:

(31) Sans. **māna** मण a particular measure or weight (equals *kṛṣṇata*-or *raktikā*;- according to scholiast or commentator on TS and KSS 100 *māna*-s = 5 *paṇa*-s or *pala*-s) *Taittirīya Saṃhita*, *Kātyāyana Śrauta Sūtra*

Sum. **mana** a unit of weight (9459x: ED IIIa, ED IIIb, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian) wr. ma-na Akk. manû

(32) Sans. **paṇa** unit of weight, coin, share in gambling, a trading community in *Rigveda*

Sum. **ban** unit; unit of capacity (117x: ED IIIb, Old Akkadian, Ur III, Old Babylonian) wr. ba-an; ban₂; ban₃; ba-an-AŠ; ^{dug}ban₃ Akk. sūtu

As seen earlier *ṇ* becomes *n*. p/b isogloss is anyways seen a lot.

- 1027 (33) Sans. ***kola*** कोल the weight of one tola- (= 2 ṭaṅka-[or śāṇa]= 1/2 karṣa-
 1028 Sum. ***kila*** weight (2450x: ED IIIb, Old Akkadian, Lagash II, Ur III, Early Old
 1029 Babylonian, Old Babylonian) wr. ki-la₂ Akk. šuqultu
 1030
 1031 "o" is non-compatible.
 1032
- 1033 (34) Sans. ***agra/agrā*** अग्र/अग्रा a measure of food given as alms/ measure of
 1034 amplitude (Surya Siddhānt) (the distance from the extremity of the
 1035 gnomon-shadow to the line of the equinoctial shadow)
 1036 Sum. ***aḡ*** measure ; to measure (219x: ED IIIb, Old Akkadian, Ur III, Early
 1037 Old Babylonian, Old Babylonian) wr. aḡ₂ Akk. Madādu
- 1038 (35) Sans. ***bhāra*** भार a burden, load, weight (*Rigveda*), a particular weight (= 20
 1039 *tulā*-s = 2000 *pala*-s of gold)
 1040 Sans. ***bhara*** भर in full measure ,a large quantity, great number, mass, bulk,
 1041 multitude, abundance, excess, etc., with all one's might, a burden, load,
 1042 weight and also a particular measure of weight equals *bhāra*
 1043
 1044 Sum. ***bur*** unit; a unit of area; a unit of volume (123x: ED IIIb, Old Akkadian,
 1045 Ur III, Old Babylonian) wr. bur; bur₃ Akk. Būru
 1046
- 1047 (36) Sans. ***droṇa*** द्रोण a measure for measuring fields (as much land as is sown
 1048 with a *droṇa* of corn), a measure of capacity (= 4 *āḍhaka*-s = 16 *puṣkala*-s =
 1049 128 *kuñci*-s = 1024 *muṣṭi*-s, or = 200 *pala*-s = 1/20 *kumbha*-, or = 1/16
 1050 *kharī*- = 4 *āḍhaka*-s, or = 2 *āḍhaka*-s = 1/2 *śūrpa*= 64 *Seras*, or = 32 *Seras*), a
 1051 wooden vessel, bucket, trough, etc. (*Rigveda*, *Mahābhārata*, *Lex*)
 1052
 1053 Sum. ***dana*** a unit of length, double-hour (distance), double-mile (54x: ED
 1054 IIIb, Old Akkadian, Ur III, Old Babylonian) wr. da-na; danna; dana₂
 1055 Akk. bēru
 1056
 1057 The combination 'dr', 'o' and 'ṇ' are non-compatibles.
 1058
- 1059 (37) Sans. ***goṇī*** गोणी a weight measure of 4 *droṇa*-s, still used in India.
 1060 Sum. ***gun*** load; yield; a unit of weight; rent, tax, tribute; (5551x: ED IIIb, Old
 1061 Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian, Middle
 1062 Babylonian) wr. gun₂; gu₂-un Akk. biltu

- 1063
- 1064 (38) Sans. **īṣā** ईषा a particular measure (*Sulbha Sūtra*)
- 1065 Sum. **eše** area unit; a unit of length (2x: Old Babylonian) wr. eše₃; eše₂ "a
- 1066 unit of area; a unit of volume" Akk. eblu, also Akk. aslu
- 1067
- 1068 (39) Sans. **krośa** क्रोश a measure of distance, commonly called a **kos**= 1000
- 1069 daṇḍa-s = 4000 hasta-s = 1/4 yojana-; according to others = 2000 daṇḍa-s =
- 1070 8000 hasta-s = 1/2 gavyūti-) *Kātyāyana Śrauta Sūtra, Mahābhārat*, etc.
- 1071
- 1072 Sum. **kuš** unit; a unit of length (1990x: ED IIIb, Old Akkadian, Lagash II, Ur
- 1073 III, Early Old Babylonian, Old Babylonian) wr. kuš₃ Akk. ammatu
- 1074
- 1075 (40) Sans. **guru** गुरु heavy, weighty (*Rigveda* i, 39, 3 and iv, 5, 6; *Atharva veda*),
- 1076 large, valuable, highly prized
- 1077 Sum. **gur/guru** unit of capacity; a measuring vessel; grain heap; grain
- 1078 store; ship's hold; to heap up; unit of capacity (27945x: ED IIIb, Old
- 1079 Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian) wr. gur;
- 1080 gur₉ "" Akk. kurru; namandu / (849x: ED IIIb, Old Akkadian, Ur III, Early
- 1081 Old Babylonian, Old Babylonian)
- 1082
- 1083 (41) Sans. **likhya** लिख्य a measure of weight, nit, young louse, the egg of a louse
- 1084 (*Śārṅgadhara Samhitā, Agni Purāṇ*) Also **likṣā** लिक्षा (as a measure of weight
- 1085 = 8 *trasa-reṇu*-s) (also written *likkā*) also **laghu** लघु small, little, light, easy,
- 1086 not heavy or difficult
- 1087 Sum. **lidga** measuring vessel; a unit of capacity (158x: ED IIIb, Old
- 1088 Akkadian) wr. lid₂-ga; lid₂-da-ga; li-id-ga; lid₂; lidda; lidda₂ Akk. litiktu;
- 1089 namaddu; parsiktu
- 1090
- 1091 It is striking that all the words (except one) related to units/measures are
- 1092 attested in Mesopotamia since Early Dynastic periods and are mostly attested
- 1093 well.
- 1094
- 1095
- 1096
- 1097
- 1098

Trees/Woods, Wooden Furniture and Related Words

As quoted earlier, trees/woods, timber for construction, ships and wooden furnitures are consistently mentioned as coming from Meluhha in Sumerian accounts.

(42) Sans. **meṣī** मेषी the tree Dalbergia Ougeinensis (Oujeinensis/Ujjeinensis) a.k.a. the Ujjain Desmodium or Desmodium Oojeinense or Ougeinia Oojeinense or in Hindi *sandan* (from Sans. *syandana*, see below, not to confuse with *candan* i.e. Sandal) and many other names

Sum. **mes** a tree (81x: ED IIIb, Old Akkadian, Ur III, Old Babylonian) wr. ^{ĝeš}mes Akk. mēsu

It is mentioned to have come from Meluhha in Sumerian records and a popularly cited example. [^{ĝeš}mes me-luḥ]-ḥa (Emar 6/1, p. 105-109, Msk 731030 o ii 56; OB Nippur Ura 1 51; IB 1535+ ii 15; Syria 12, pl. 46-47, 03 + pl. 47, 04 o ii 35; SLT 143 o 1; IB 1547 iii 1).

J.S. Gamble in “A Manual of Indian Timbers” (1972, first published in 1881) states:

“This very pretty and useful tree is a valuable one in India (...) The wood is much in request for agricultural implements, such as ploughs; and, being tough and strong, is useful for carriage-building. It makes excellent furniture. Roxburgh mentions that the pillars of Maharaja Sindhia's palace at Oojein (*Ujjain*) are made of it”. The timber of this species is superior to Teak (*Tectona Grandis*) in terms of shock resistance, shear strength and hardness (Pearson and Brown 1932). It has a slew of medicinal usages in Ayurveda, Siddha, Folk and Sowa Rigpa systems of medicine. Bark fibers are suitable for making rope. A red, transparent, astringent gum is obtained from incisions in the trunk. It is also a specialty timber for marine plywood. The tree is a host plant for lac producing insects. The resulting shellac is of high quality (Purkayastha and Krishnaswamy 1958).

So named in Sanskrit most probably because of its flowers, which appear similar to face of a sheep i.e. *meṣa* मेष with its ears stretched outwards (c.f. fig. M.1)

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Fig M.1

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Dalbergia Ougeinensis is native to Indian subcontinent only. It is found in almost the whole of northern and central India and into the greater part of the Deccan peninsula. Including lower Himalaya from Jammu to Bhutan, Punjab, Sindh (Pakistan), Rajasthan, Gujrat, Maharashtra, Uttar Pradesh, Bihar, Madhya Pradesh, Karnataka and the northern slopes of the Nilgiris.

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Its bark is sometimes black, grey or dark brown; hence in Hindi and Marathi, the tree is also known as *Kālā Palāsh* and *Kālā Paḷas* respectively, literally 'a black Butea Monosperma', with which it bears some similarities. Interestingly, in the Mesopotamian text too *mes* is occasionally referred to as a black tree/wood. Even more interestingly, it is also mentioned as *ḡešmes-babbar*, lit. 'a white *mes* tree'. It could be possibly because of white color of its flowers in central Indian variety as found in Gujarat, Maharashtra and Madhya Pradesh and surrounding regions as opposed to a darker purple hue as found in northern regions like Panjab, Himachal Pradesh, etc. (fig. M.3). In full bloom, the tree of the central Indian variety would actually appear white (fig. M.4).

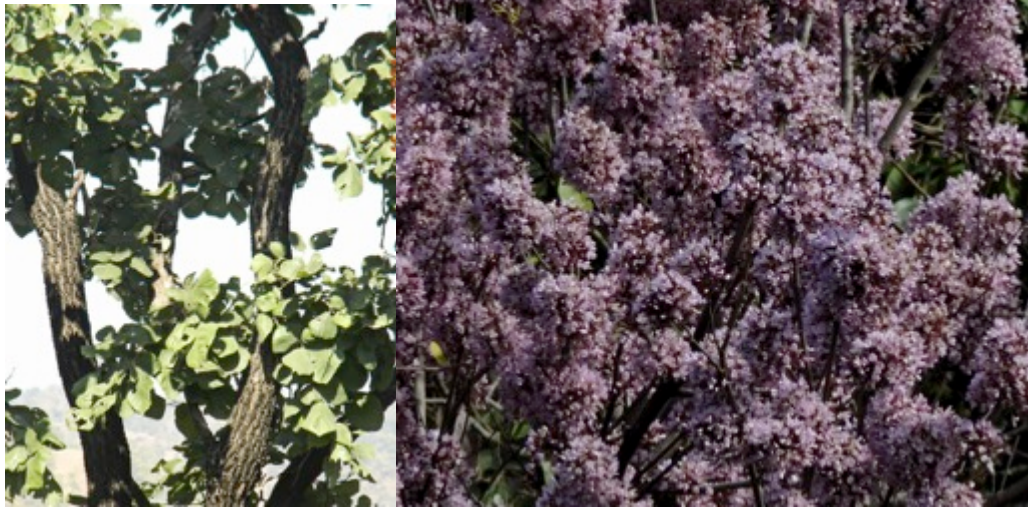


Fig. M.2 the tree and fig. M.3 full flower - purple variety from Himachal Pradesh



Fig M.4 Full flower - white variety from Maharashtra

It is mentioned in *Rigveda* as *spandan* (iii, 53, 19) in contexts of parts of a chariot. According to V. S. Agrawala (1952) “it certainly denotes a tree. Its variant is *syandana*. The botanical name may be *Ougeinia dalbergioides* denoting the tree called *sandan* in Hindi”. Its popularity and usage since ancient periods is reflected in its many Sanskrit names (more than 25!) as found in *Rigveda* and other texts. Several of these names are derived from various wooden objects, which suggests its preferential use in manufacture of those objects. Some examples are given in the table below.

Other Sanskrit names of <i>meṣī</i>	Derived from
<i>syandana/syandanadruma/syandani</i>	<i>syandana</i> - a war-chariot, chariot, car
<i>akṣaka/akṣika/akṣīka</i>	<i>akṣa</i> - an axle, axis, wheel, cart, car, beam, chariot
<i>cakrin</i>	<i>cakra</i> - wheel
<i>nemi/nemin</i>	<i>nemi</i> - the felly of a wheel, any circumference or edge or rim
<i>ratha/rathadru/rathadruma/rathika</i>	<i>ratha</i> - a chariot, car, especially a two-wheeled war-chariot, any vehicle or equipage or carriage (applied also to the vehicles of the gods), waggon, cart
<i>śakaṭa</i>	<i>śakaṭa</i> - a cart, waggon, car, carriage, an implement for preparing grain
<i>citrakarman</i>	<i>citrakarman</i> - any extraordinary act, wonderful deed, a painting, picture, devoted to various occupations
<i>citrakṛt</i>	<i>citrakṛt</i> - astonishing, painting
<i>sarvasādhaka</i>	<i>sarvasādhaka</i> is a name of <i>śiva</i>

Consequently, it is called “Chariot tree” in English.

“The natural reproduction of *Sandan* is excellent, and it is very easily propagated artificially. (...) It is often grown for ornament in gardens and when in full flower and covered with its purple inflorescences, it is very pretty” (Gamble 1881). Intriguingly, as stated earlier, Harappans are also mentioned as keepers and financers of sacred gardens and one of the terms for ‘gardener’ in Sumerian and Akkadian is Sum. *santanak/šandana* and Akk. *sandanaku*. Its leaves are trifoliate. It is worth noting that trefoil designs are present in Harappan art and script (sign no. 233 to 235 Mahadevan 1977). Similar designs are also found in Mesopotamia and considered to be a Harappan influence (Bisht and others).



Fig M.5 Trifoliate leaves as seen on a young shrub

No wonder if Harappans used and brought this multi-purpose tree with them to the west. Unfortunately, today, timber exploitation has degraded the natural stands of this species. In fact, according to Jagdish Chander, Chief Conservator of Forests, Haryana state (india), “(in Hariyana) tree has almost become endangered and so is not exploited commercially”.

Oddly, despite having much importance historically as suggested by its Sanskrit names, this tree seems to have eluded scholarly attention until now in the studies related to these subjects.

(43) Sans. *śīmśapā* शिंशपा/*śāṃśapa* शांशप the tree Dalbergia Sissoo/made of its wood; commonly known as (North) Indian Rosewood and *śīśam*, *sisam*, *sissu*, etc.

Sum. **samazum** a tree (1x: Old Babylonian) wr. ḡešsa-ma-zum

It’s an important commercial timber species native to Indian subcontinent and southern Iran. It is interesting to compare its popular Indian vernacular forms *śīśam*/*sisam* with Sumerian word.

Gamble (1972/1881) states “the wood is very durable, seasons well, and does not warp or split. It is highly esteemed for all purposes where strength and elasticity are required. (...) It is extensively used for boat-building, carts and carriages, agricultural implements, in construction, and especially for furniture. As a furniture-wood and for carving, it is probably the finest wood in India, and it is in regular demand for these purposes all over the

1219 North. (...) Sissoo wood is an excellent fuel, good pieces burning almost like
1220 coal; it also makes excellent charcoal.”
1221
1222 Importantly, it is highly regarded in manufacture of musical instruments
1223 for its superior acoustic qualities and durability, traditionally in India – for
1224 folk and classical instruments, as well as all over the world today. In fact, it
1225 is one of the most widely used woods in guitars (Paiva and Santos, 2014)
1226 and in other instruments.
1227
1228 Another tree that is known with same/similar names vernacularly
1229 (*śiśam/sisam/sissu*, some times with prefix *kālā* i.e. ‘black’) and in Sanskrit
1230 (*kṛṣṇa-śiṃśapā*, *śyāma-śiṃśapā*, lit. ‘black Dalbergia Sissoo’) is Dalbergia
1231 Latifolia, also known as (East) Indian Rosewood, Bomabay Blackwood, etc.
1232 Found mostly in central and southern parts of India and scarcely in the
1233 North. Its wood is similar to D. Sissoo but with a darker purpal shade
1234 instead of light brown; highly valuable for furniture work and used for
1235 musical instruments as well.
1236
1237 (44) Sans. **asana** असन the tree Terminalia Tomentosa (synonyms: Terminalia
1238 Alata, Terminalia Elliptica) commonly known as Indian Laurel, *asain*, *asin*,
1239 *sain*, *ain*, *saaj*, *aisan*, etc.
1240 Sum. **esī** a tree (40x: Ur III) wr. ḡešesi Akk. ušû
1241
1242 A large deciduous tree. It is mentioned to have come from Meluhha in
1243 Sumerian records. According to Gamble “perhaps the most widely
1244 distributed of all the important Indian forest trees, and the one in the most
1245 universal employ for building native houses and other country purposes. It
1246 is found in the sub-Himalayan tract and Lower Himalaya from the Ravi
1247 eastwards, ascending to 4000 ft. in the hills, in places. From the Himalaya it
1248 extends down both Peninsulas.” The wood is used for furniture,
1249 cabinetwork, joinery, paneling, specialty items, boat-building, railroad
1250 cross-ties (treated), decorative veneers and for musical instrument.
1251 Silkworms (*Antheraea paphia*) feed on its leaves that produce the Tussar
1252 silk, which is a commercially important wild silk. Bark and fruits are used
1253 to dye and tan leather. The “white wax” insect (*Ceroplastes ceriferus*, Sign.)
1254 is often found on it, the resulting wax (commonly known as Chinese wax) is
1255 used in the manufacture of polishes, sizes, and candles. (Size - a gelatinous

- 1256 solution used in glazing paper, stiffening textiles, and preparing plastered
 1257 walls for decoration)
 1258
- 1259 *Asansol* city in present day West Bengal state in India is named after this
 1260 tree. It is situated on the banks of river Damodar where *asan* trees are also
 1261 found (possibly from Sans. *asana* + *cola/kula* i.e. bank/shore/coast). It is
 1262 the second largest city in the state and has a long history.
 1263
- 1264 (45) Sans. ***abja*** अब्ज the tree *Barringtonia Acutangula*
 1265 Sum. ***ġeša'abak/ġešabak*** a tree wr. ġeš-ab-ba; ġeš-a-ab-ba; ġeš-a-ab Akk.
 1266 kušabku
 1267
- 1268 Mentioned to have come from Meluhha. *Barringtonia Acutangula* is native
 1269 to Indian subcontinent, Afghanistan and south-east Asia to northern
 1270 Australasia and Philippines, etc., commonly known as Mangrove, Indian
 1271 Oak, Itchytree, Mangopine, etc. It is found on riverbanks, swampy sites and
 1272 rocky or sandy shores.
 1273
- 1274 Sans. *abja* literally means born in water. It has many other names in
 1275 Sanskrit that are related to water like *nadija* (born in river), *jalaja*, *ambuja*
 1276 (born in water) and *samudraphala*, literally, sea-fruit. Similarly on account
 1277 of Sumerian *a-ab-ba* meaning 'sea', it has sometimes been translated as 'sea
 1278 wood' (Landsberger 1964–1966: 261; Hansman 1973: 560; Thapar 1975:
 1279 9; Parpola 1994: 14b).
 1280
- 1281 According to Gamble (1972/1881) its bark is dark brown, rough but the
 1282 wood is white, shining, soft, even-grained. The wood is more durable than it
 1283 seems at first sight; if cut on the quarter it presents a noticeable silver grain
 1284 and apparently does not warp much if so cut. It is used for boatbuilding,
 1285 well construction, and for making rice pounders, cabinets, and carts. The
 1286 bark is used to intoxicate fish, also for tanning; the leaves and fruit are used
 1287 in native medicine.
 1288
- 1289 (46) Sans. ***kūrca*** कूर्च a bunch of anything, bundle of grass, etc. often used as a
 1290 seat (*Taittirīya Saṃhitā*, *Śatapatha Brāhmaṇa*); almost all later Indian (and
 1291 surrounding region's) languages have words like *khurcī*, *kursi*, *khuraśī*,

1292 *kurcī, kasēra*, etc. for chair; also Sans. *garta* गार्त a high seat, throne (of mitra-
 1293 and varuṇa-)
 1294 Sum. **guza** chair, stool, throne (1431x: Old Akkadian, Lagash II, Ur III, Early
 1295 Old Babylonian, Old Babylonian, unknown) wr. ḡešgu-za; gu-za; gu₂-za;
 1296 ḡešguza; ḡešaš-te Akk. kussû
 1297
 1298 It is mentioned to have come from Meluhha in Sumerian records [ḡešgu-za
 1299 me-luḥ-ḥa (OB Nippur Ura 1 180)]. k>g is common. '-rca' is a non
 1300 compatible. Akkadian form, *kussû*, makes it even clearer. The Sanskrit word
 1301 *kūrca* has most archaic and broad meaning for anything used as a seat. The
 1302 word seems to have spread in far and wide places and popularly used for
 1303 chair till today, e.g. Marathi *khurcī*, Hindi *kursi*, Gujarati *khuraśī*, Tuluḡu
 1304 *kurcī*, Malayalam *kasēra*, Indonesian *kursi*, Khmer *kawei*, Arabic *kursii*,
 1305 Chinese *Yīzi*, Thai *kēāxī*, Malay *kerusi*, Ukrainian *krislo*, etc.
 1306
 1307 Word '*kursi*' and its variations are usually thought to have come from
 1308 Arabic *kursii* but the akkadian and sumerian records evidently show its
 1309 existence well before that and its relation with Meluhha.
 1310
 1311 (47) Sans. **vaṃśaja** वंशज made of or produced from bamboo; from Sans. *vaṃśa*
 1312 वंश Bamboo cane (*Rigveda*), in Hindi, Panjabi, Ranjasthani, Nepali - *bānsa*,
 1313 Gujrati - *vānsa*, Marathi - *bāmbū*, Bangla - *bāṃśa*; c.f. Sans. *vaṃśa/vaṃśī* or
 1314 commonly *bānsurī/bansurī/bansarī*, flute made of bamboo.
 1315 Sum. **banšur** table (256x: ED IIIa, ED IIIb, Old Akkadian, Ur III, Early Old
 1316 Babylonian, Old Babylonian) wr. banšur; ḡešbanšur; banšur₂; ḡešbanšur₂;
 1317 banšur₃; ḡešbanšur₃; banšur_x([URU×IGI]) "table" Akk. paššūru
 1318



Fig. B.1 serving table seen on panel of a lyre from Ur and fig. B.2 a modern table made from Bamboo

1322

1323 *banšur* is mentioned to have come from Meluhha. In Sumerian textual
1324 records, it is mostly mentioned with food object including various fishes,
1325 pig, sheep, cheese, bread, fruits, etc. In Mesopotamian iconography, tables
1326 with food and drinks are shown in many banquet scenes as found on seals
1327 and otherwise. Those tables appear very similar to furniture made from
1328 Bamboo (c.f. fig. B.1 and B.2). Figure B1 shows the second register of the
1329 panel on one of the bull-headed lyre from Ur cemetery (discussed in later in
1330 this text), an animal costumed figure is carrying a similar table, lifting it
1331 quite high. Bamboo furniture can be far lighter in weight than the ones
1332 made from any hardwood and thus, serving in the manner shown on lyre is
1333 actually very much possible. Bamboos are of notable economic and cultural
1334 significance in South Asia, Southeast Asia and East Asia where majority of
1335 the Bamboo species are found and being used for building materials,
1336 furniture, as a food source, as a versatile raw product and for musical
1337 instruments since ancient periods. Its uses are mentioned in Rigveda.
1338 Bamboo doesn't occur natively in West Asian region where ancient
1339 Mesopotamia was situated.

1340

1341 (48) Sans. ***mattavāraṇa*** मत्तवारण a bedstead

1342 Sum. ***mayaltum*** bed (44x: Ur III, Early Old Babylonian, Old Babylonian) wr.
1343 ḡešma-al-tum; ḡešma-a-al-tum Akk. Mayyaltum

1344

1345 (49) Sans. ***mañca*** मञ्च a bedstead, couch

1346 Sum. ***maršum*** bed (2x: Old Babylonian) wr. ḡešmar-šum Akk. maršu;
1347 mayyaltu

1348

1349 '-ñca' is non compatible.

1350

1351 (50) Sans. ***maṅginī*** मङ्गिनी a boat, ship

1352 Sum. ***magilum*** a boat (5x: Old Babylonian) wr. ḡešma₂-gi₄-lum; ḡešma₂-gi-
1353 lum; ḡešma₂-gi-la₂ Akk. magillu

1354

1355 Identified as coming from Meluhha in Sumerian records - ḡi₅ma₂-gi₄-lum
1356 me-luh-ha-^{ki}-a-ke₄ (Enki and the world order 128)

1357

1358

- 1359 (51) Sans. **gopura** गेपुर the ornamented gateway of a temple
 1360 Sum. **ĝešbur** architectural ornament (5x: Old Babylonian) wr. ĝeš-bur₂
 1361
 1362 'o' is non compatible, p>b is commonly seen here. Sumerian texts clearly
 1363 suggest it to be a door ornament or gateway or gate (most likely wooden as
 1364 suggested by use of *ĝeš* in place of 'go-'). E.g.:
 1365
 1366 ĝiš-bur₂-ba me-te e₂-a-ke₄ ni₂ il₂-il₂-a il₂-bi ba-e-gub (The lament for Eridug
 1367 44)
 1368 The loftiness of its awe-inspiring door-ornament, befitting a house,
 1369 collapsed. (ETCSL)
 1370
 1371 e₂-e ĝiš-bur₂ mah-bi ba-šub bad₃-si-bi ba-gul (The lament for Sumer and
 1372 Urim 420)
 1373 The house's great door ornament fell down, its parapet was destroyed.
 1374 (ETCSL)
 1375
 1376 ĝiš-bur₂-de₃ muš-šag₄-tur₃ muš-huš-e gu₂-da am₃-mi-ib-la₂ (The temple
 1377 hymns 418)
 1378 (...) on your awesome and radiant gate a horned viper and a *mušhuš* are
 1379 being seized in a trap. OR (...) on your awesome and radiant gate a
 1380 decoration displays horned viper and a *mušhuš* embracing.
 1381
 1382 (52) Sans. **sūtrakāra** सूत्रकार a carpenter (*Rāmāyaṇa*)
 1383 Sum. **šukara** carpenter wr. ^{lu₂}ĝeš^šu-kara₂; ĝeš^šu-kara₂ Akk. naggāru
 1384
 1385 (53) Sans. **ammarā** अम्मरा the second beam of timber over a door
 1386 Sum. **amra/amru** beam, timber (15x: ED IIIb, Ur III) wr. am-ra; am-ru;
 1387 amra Akk. amrû
 1388
 1389 (54) Sans. **praśas** प्रशस् a hatchet, axe, knife (*Aitareya Brahmana*) also **paraśu**
 1390 परशु
 1391 Sum. **pašu** a type of axe (1x: Old Babylonian) wr. pa-a-šu
 1392
 1393 There are other words for axe in Sumerian that are older and more
 1394 popular; least popular is *pašu* with only single entry.
 1395

1396 Jewellery

1397

1398 (55) Sans. **sindhu** सिन्धु the Indus river

1399 Sum. **hindum** a bead (3x: Ur III) wr. hi-in-dum

1400

1401 Harappan beads are found almost all over Mesopotamia and are one of the
 1402 most important Harappan export attested in archaeology. As mentioned
 1403 earlier, historically, variations of the word *sindhu* have been used to
 1404 identify the region i.e. Indian subcontinent – the area around and beyond
 1405 *sindhu* river, its people, culture, ethnicity, religion and products. E.g. later
 1406 Akkadian words attested in Standard Babylonian, *sindu/sinda/sindū* and
 1407 *sinduja* (c.f Sans. *sindhuja*, born or produced in the country Sindh,
 1408 *Mahābhārata*), used as adjective ‘Indian’ (said for Indian wood). The
 1409 ancient Greeks referred to the Indians as *Indoi* (Ἰνδοί), "the people of the
 1410 Indus" and Persian used *hindu* for the same.

1411

1412 *Hindum* seems to be the only word in Sumerian dictionary (PSD) that starts
 1413 with ‘hin’ (or *hi-in*) combination. Many other words exist for bead in
 1414 Sumerian, e.g. *ellaĝ*, *nunuz*, *ad*, *allanum*, *za*, etc.

1415

1416 (56) Sans. **hāra** हार a garland of pearls, necklace (according to some, one of 108
 1417 or 64 strings) *Mahābhārata*, etc.

1418 Sum. **hara** an ornament wr. ^{na}₄hara₅ Akk. *harû*

1419

1420 (57) Sans. **hiraṇya** हिरण्य any vessel or ornament made of gold RV AV

1421 Sum. **hiritum** an ornament (of gold) (3x: Ur III) wr. ^{na}₄hi-ri-a-tum
 1422 Akk. *hirītu*

1423

1424 Always mentioned/associated with gold in Sumerian. Again non-
 1425 compatible ending i.e. *-anya* becomes ‘*-tum*’.

1426

1427 (58) Sans. **karṇāṇḍu** कर्णाण्डु an ear-ring

1428 Sum. **kamkammatum** earring (30x: Ur III, Old Babylonian) wr. kam-kam-
 1429 ma-tum Akk. *aṣabtu*

1430

1431

- 1432 (59) Sans. **śaraṇḍa** शरण्ड a kind of ornament
 1433 Sum. **šerkan** ornament (56x: Ur III, Old Babylonian) wr. še-er-ha-an; še-er-
 1434 ka-an; še-er-kan²; še-er-ga-an; še-er-kan
 1435
 1436 (60) Sans. **nepathya** नेपथ्य an ornament, decoration, costume (especially of an
 1437 actor), attire, *Mahābhārata*, etc.
 1438 Sum. **nabihum** an ornament (65x: Ur III) wr. na-bi²-hu-um Akk. nabihu
 1439
 1440 p>b is commonly seen here. -*thya* is non-compatible ending (tum/lum/hum
 1441 pattern)
 1442
 1443

1444 Trade - General Terms

- 1445
 1446 (61) Sans. **mudra** seal, inscription, mark, gesture, pose
 1447 Sum. **musara** inscription (55x: ED IIIb, Old Akkadian, Lagash II, Ur III, Old
 1448 Babylonian) wr. mu-sar-ra Akk. Musarû
 1449 Sum. **mašdara** inscription (3x: Ur III, Old Babylonian) wr. ġešmaš-dara₃
 1450 Akk. maštaru
 1451
 1452 Seals most likely played a very important role in Harappan trading
 1453 methods. As mentioned earlier, many Harappan and “Indus style” seals are
 1454 found in Mesopotamia.
 1455
 1456 In Sanskrit, word *mudra* has wide spread, varied and important usage in
 1457 the context of fields like *yoga*, art, music, dance, drama, martial arts; many
 1458 types of symbolic or ritual gestures or poses in Hinduism, Jainism and
 1459 Buddhism; economy (in this context, it means money in general and coin as
 1460 well); trade and administration (i.e. seal or mark); jewellery (finger ring);
 1461 and even for sexual positions! This gives an impression that origin of this
 1462 word could be very ancient. In *Rigveda*, it appears as part of a name
 1463 *Lopamudra*, which may show popularity of the word in common people.
 1464
 1465 (62) Sans. **śravadraṅga** श्रवद्रङ्ग market, bazaar, stirring town, a fair
 1466 Sum. **šakanka** market; market-price (10x: Old Babylonian) wr. šakanka
 1467 Akk. mahīru
 1468

- 1469 (63) Sans. **nidhimat** निधिम् containing treasure or forming a store, abundant
 1470 (Rigveda)
 1471 Sum. **nakamtum** storehouse (9x: Early Old Babylonian, Old Babylonian)
 1472 wr. na-kam-tum
 1473
- 1474 (64) Sans. **goraṅku** गोरङ्कु a bailsman, guarantee
 1475 Sum. **ginatum** guarantee (10x: Ur III) wr. gi-na-tum "" Akk. tūnātu
 1476
 1477 "o" is non compatible, there is no word in Sumerian (PSD) that has *ranku* or
 1478 *anku* anywhere in the word. We have seen this particular pattern of use of
 1479 'tum' etc. as a replacement for such non-compatible parts at the end of the
 1480 word.
 1481
- 1482 (65) Sans. **śratkṛ** श्रत्कृ to make secure, guarantee (Rigveda)
 1483 Sum. **šudua** guarantee (31x: ED IIIb, Old Akkadian, Ur III, Old Babylonian)
 1484 wr. šu-du₈-a
 1485
 1486 Except for ś, everything else seems non-compatible.
 1487
- 1488 (66) Sans. **sarga** सर्ग agreement, assent
 1489 Sum. **šega** agreement (16x: Early Old Babylonian, Old Babylonian, un-
 1490 known) wr. še-ga Akk. mitgurtu
 1491
 1492
- 1493 **Trade - Miscellaneous**
 1494
- 1495 (67) Sans. **kṛvi** कृवि Name of a utensil used by a weaver, loom (?) (*Uṇādi-sūtra* iv,
 1496 57)
 1497 Sum. **kura** ~loom; a designation of looms (1x: Old Babylonian) wr. ġeškur-
 1498 ra; ġeškur₄-ra; ġešku-ra Akk. iṣi kura
 1499
- 1500 (68) Sans. **akṣadevana** अक्षदेवन dice-playing, gambling
 1501 Sum. **EKIDma** a wooden object used in a game (9x: Old Babylonian) wr.
 1502 ġešE.KID-ma
 1503

1504 Harappan dices are found at many places in Mesopotamia (Dales 1979).

1505

1506 (69) Sans. *ūrṇā* ऊर्णा wool, a woollen thread, thread (Rigveda, etc.)

1507 Sum. *ulin* twine, colored twine wr. u₂-li-in Akk. barumtu

1508

1509 (70) Sans. *kṣurin* क्षुरिन् a barber

1510 Sum. *šu'i* barber wr. šu-i Akk. gallabu

1511

1512

1513 Animals

1514

1515 As cited earlier, Meluhhan ships exported many animals to Mesopotamia. Here
1516 are some of the Sumerian terms that are found similar to Sanskrit in this context.

1517

1518 (71) Sans. *aṃsakūṭa* अंसकूट a bull's hump, the protuberance between an ox's
1519 shoulders.

1520 Sum. *asqumbitum* hump wr. as-qum-bi-tum Akk. asqubbītu

1521

1522 Humped bull is native to south Asia and considered to have reached
1523 Mesopotamia with Harappans.

1524

1525 (72) Sans. *nandi śiva's* bull; also *nanda* son, RV

1526 Sum. *ninda* breeding bull; bull calf (19x: ED IIIb, Old Babylonian) wr.
1527 ^{gud}ninda₂ Akk. būru; mīru

1528

1529 It is important to note that *śiva's* bull too is a calf and not a fully-grown bull.

1530 It is a very commonly seen human behavior to address (and actually
1531 consider) pets as sons and daughters. It is possible that early people
1532 addressed their bull calves as *nanda*, their son or its affectionate variations
1533 like *nandi or nandu*, still used in names of people.

1534

1535 (73) Sans. *romaś/lomaś* a goat (Rigveda)

1536 Sum. *maš* goat; extispicy; sacrificial animal for omens (10699x: ED IIIa, ED
1537 IIIb, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian,
1538 1st millennium) wr. maš₂; maš Akk. būru; urīšu

1539

1540 Initial clipping like in *kinnara* (both words are discussed with word no. 29

- 1541 *kinnara* above). On translator's seal (above) we see a figure holding a
 1542 (baby) goat.
 1543
- 1544 (74) Sans. **barkara** बर्कर a goat
 1545 Sum. **barakara** (meaning unknown) (3x: Ur III) wr. ba-ra-kar-ra
 1546
- 1547 This Sanskrit word *barkara* seems to represent the sound of the goat,
 1548 which would be the easiest way to describe the animal. It is also basis of
 1549 most common words for goat, i.e. *bakarā/bakari* (for male/female) in India
 1550 today. The meaning of this word is unknown in Sumerian records.
 1551 Sumerologists may check and report on this matter, if this meaning i.e. goat,
 1552 fits the context. At one place it is mentioned with *udu* i.e. sheep (below),
 1553 udu ba-ra-kar-ra PDT 1, 462 3.
 1554
- 1555 (75) Sans. **huḍu** हुडु a ram
 1556 Sum. **udu** sheep (28818x: ED IIIa, ED IIIb, Ebla, Old Akkadian, Lagash II, Ur
 1557 III, Early Old Babylonian, Old Babylonian, 1st millennium, unknown) wr.
 1558 udu; e-ze₂ Akk. immeru
 1559
- 1560 (76) Sans. **bhaiḍaka** भैडक (fr. bheḍa, bheṇḍa) relating to or coming from a sheep
 1561 Sum. **barsuga** ~sheep, a designation of sheep; without fleece; plucked
 1562 fleece (61x: Ur III) wr. bar-su-ga; bar-sug₄-a Akk. ?
 1563
- 1564 (77) Sans. **vr̥ṣākapi** वृषाकपि "man-ape" or "great-ape" *Rigveda* (RV iv, 18, 8) a
 1565 mythological anthropomorphic monkey like creature; Sans. **kapi** a monkey
 1566 Sum. **ugubi** monkey (13x: Old Babylonian) wr. ^ugu^ugu₄-bi; ^ugu^uu-gu₅-bi
 1567 Akk. uqūpu
 1568
- 1569 'Vr̥ṣ' is non-compatible and *k>g* and *p>b* are common. It is understood that
 1570 Indian monkeys reached Mesopotamia. Figurines of monkeys performing
 1571 act of climbing on a stick or in various acrobatic poses are found at Indus
 1572 sites. Kenoyer suggests that pet monkeys were probably a common sight in
 1573 the bazaars or neighborhood markets of Indus cities (Kenoyer 1998).
 1574 Similar figurines are found in Mesopotamia as well and it is generally
 1575 thought that the bulk of Early Dynastic to Larsa period monkey figurines in
 1576 Mesopotamia depicts Indian primates (Ratnagar 1984, Possehl 1994).
 1577 There are still-present traditions of classes of folk/street performers who

1578 perform with a short tailed monkey. The monkey is mostly dressed like a
 1579 human. As part of their performance, they address the monkey using
 1580 mischievous names to generate interest in the audience. They usually
 1581 emphasize that their monkey is no ordinary one; it has human like or even
 1582 super-human qualities and more. ‘*Vṛṣākapi*’ surely fits such descriptions
 1583 and its transformation into *ugubi* is well within the scope of the formula.
 1584 Same strategy could have helped merchants who were selling monkey
 1585 figurines.

1586

1587 (78) Sans. **vājibhūmi** वाजिभूमि a place where horses are bred or a spot abounding
 1588 in or suitable for horses.

1589 Sum. **wadaltum** shed? a shed where animals are born? (3x: Ur III) wr. wa-
 1590 da-al-tum Akk. ?

1591

1592 It is very rare in Sumerian for words to start with ‘w’.

1593

1594 (79) Sans. **haṃsira** हंसिर a kind of mouse

1595 Sum. **humsirum** mouse wr. ha-mun-zi-lum Akk. humṣīru

1596

1597 Possibly a large mouse (a rat?) according to Akkadian records. Stories
 1598 about ship-rats are present everywhere in world. This could be a species
 1599 that travelled on ships and reached.

1600

1601

1602 Other Words

1603

1604 Most of the words listed above are related to the fields that can be connected
 1605 with Harappans or south Asia through some way or the other. But given the
 1606 influence seen in above list, there could be many more words related to general
 1607 human activities. Only some examples are presented here:

1608

1609 Disease

1610

1611 Humans do fall ill and so would Harappans in Mesopotamia. It appears that some
 1612 of Indian names of disease also got attested. Here are some as under:

1613

- 1614 (80) Sans. **adhimāṃsaka** अधिमांसक impaction; inflammatory oedema of the last
 1615 molar teeth or wisdom teeth; proud flesh or cancer (especially in the eyes
 1616 or the back part of the gums)
 1617 Sum. **amudaseke** dropsy (1x: Old Babylonian) wr. a-mud-a-se₃-ke
 1618
- 1619 (81) Sans. **aṅgaja** अङ्गज a disease
 1620 Sum. **aganġar** a disease (1x: Old Babylonian) wr. a-ga-an-ġar
 1621
- 1622 (82) Sans. **ajagallikā** अजगल्लिका "goat's cheek"; an infantile disease
 1623 Sum. **aġizzal** a disease (1x: Old Babylonian) wr. aġizzal_x
 1624 ([GIŠ.TUG₂.PI.ŠIR₂t.SIL₂]) Akk. na'lu
 1625
 1626
- 1627 (83) Sans. **agnidāha** अग्निदाह a particular disease
 1628 Sum. **agantum** skin disease (5x: Old Babylonian) wr. a-ga-an-tum₃
 1629 Akk. epqēnu
 1630
 1631
- 1632 **Other - Miscellaneous**
 1633
- 1634 (84) Sans. **sneha** स्नेह tenderness, love, blandness, attachment to, fondness or
 1635 affection for
 1636 Sum. **neha** calm, peace (14x: Old Babylonian) wr. ne-ha Akk. nēhtu
 1637
 1638 Cluster 'sn' in the begining is non-compatible. Exactly same variation of the
 1639 word i.e. *neha* is present in later Indo Aryan languages too.
 1640
- 1641 (85) Sans. **mud** joy, happiness, gladness, etc. (Rigveda, Vajasneyi Samhita)
 1642 Sum. **mud** joy (1x: Old Babylonian) wr. mud₅
 1643
 1644 Mud has many meanings in Sumerian. Most attested is 'jar'. Others are tube,
 1645 blood, etc. Joy is most poorly attested (i.e. only once).
 1646
- 1647 (86) Sans. **umā** उमा fame, reputation, splendour, light, wife of the god *śiva*; also
 1648 called *pārvatī* and *durgā*

- 1649 Sum. **uma** triumph, victory (18x: Ur III, Old Babylonian) wr. u₃-ma; u₂-ma
 1650 Akk. ernittu
 1651
- 1652 (87) Sans. **mah** मह / **maha** मह great, strong, powerful, mighty, abundant
 1653 (*Rigveda, Vajasneyi Samhita*)
 1654 Sum. **mah** great; (to be) great (3271x: ED IIIb, Old Akkadian, Lagash II, Ur
 1655 III, Early Old Babylonian, Old Babylonian, unknown) wr. mah; mah₂
 1656 Akk. kabtu; mādu; rabû; šīru
 1657
- 1658 Sanskrit and later indo Aryan speakers have a habit of using “*maha*” (as an
 1659 adjective) with almost everything to show a greatness or superlative
 1660 quality, e.g. pandit-maha pandit, gyani-maha gyani and many more. Similar
 1661 practice is found to be present in many Sumerian examples where the word
 1662 is used for same purpose. But as suffix instead of prefix. E.g. *gala* ‘lament
 1663 singer’ - *galamah* ‘chief lament singer’; *agrig* ‘steward, housekeeper’ -
 1664 *agrigmah* ‘top administrator’.
 1665
- 1666 (88) Sans. **amlavetasa** अम्लवेतस vinegar (obtained from fruit)
 1667 Sum. **aĝeštinak** vinegar (98x: ED IIIb, Old Akkadian, Ur III, Old Babylonian)
 1668 wr. a-ĝeštin-na
 1669
- 1670 Almost entire word seems non-compatible as ‘*am-la*’ combination in the
 1671 beginning of the word is not seen as well as ‘*v*’, and even *t-s*- (with any
 1672 vowel) in the end too is quite rare.
 1673
- 1674 (89) Sans. **śaṇḍa** शण्ड name of an *asura* priest (son of *śukra*); name of a demon,
 1675 a patronym (*Vajasneyi Samhita, Maitrayani Samhita*)
 1676 Sum. **saĝĝa** an official, the chief administrator of a temple household
 1677 (1862x: ED IIIa, ED IIIb, Old Akkadian, Lagash II, Ur III, Old Babylonian) wr.
 1678 saĝĝa; |GAR.ŠID|; |ŠID.GAR| Akk. šangû
 1679
- 1680 *ṇḍa* is non-compatible (see *bhaṇḍa* above).
 1681
- 1682 (90) Sans. **saranyu/śaranyu** सरण्यु/शरण्यु wind, air
 1683 Sum. **satium** east wind; east; easterner (7x: Ur III, Old Babylonian)
 1684 wr. tumu_{sa12}-ti-um; sa-ti-um; tumu_{sa12}-tu-um; tumu_{sa12}-tum₃; tumu_{sa}-ti-um

1685

1686 -*ranyu* is non-compatible. It is very interesting to compare the meaning in both
1687 the languages. Indus Valley is, in fact, in the east of Mesopotamia.

1688

1689

1690

1691 Much more study from all angles is required to understand this
1692 phenomenon and its extent. Its implications can be far reaching. The
1693 sumerianization process requires investigation from sumerologists. Formula is a
1694 general indicator of the patterns that were seen in musical terms that lead to the
1695 discovery of other words that were following similar patterns, which also
1696 confirmed the music related data. But the apparent accuracy in transformation of
1697 many of the words may suggest the possibility of some kind of active human
1698 involvement in the process. It is possible that interpreters like Shu-ilishu were
1699 probably not only translating the languages but also employing mechanisms
1700 similar to Phono-Semantic Matching to bring foreign words into local languages.
1701 It is also possible that early Harappan traders or their scribes themselves may
1702 have started *sumerianizing* their words for local customers and also, importantly,
1703 to make them expressible in the cuneiform script.

1704

1705 About 30% of the words are attested since Early Dynastic periods but they are
1706 also some of the important ones, e.g. classes of musicians and jesters i.e. *kinnara*,
1707 *gatr/gala*, *bhāṇḍa*, *vidūṣaka*; most of the measuring units; some of the
1708 trees/timbre and furniture and some other trade related terms including seal;
1709 etc. This suggests that Harappan cultural and commercial influence was already
1710 established by this time, which confirms with conclusions drawn by During
1711 Casper (see above) and many others.

1712

1713 It seems likely that early Harappan merchants had a practice of keeping
1714 musicians with them. As the data suggest, Harappan music and performances
1715 may have become very popular in Mesopotamia.

1716

1717

1718

1719

1720

1721

Language of Indus Valley?

So does this data provide definitive evidence for the language of Indus Valley?

This is a big question and requires debate but here are a few observations:

(a) Data is statistically significant and found *en-bulk* in the areas where Harappan words were likely to be found. Their periods of attestation, i.e. from Early Dynastic, through Akkadian till Old Babylonian, correspond with the Harappan presence in Mesopotamia in archaeology. Qualitative analysis of the list of words suggests that they may belong to a fairly advanced/urban culture. Approximately same time period is the mature urban phase of Harappan civilization.

(b) Majority of the words found in this study, are technical terms i.e. '*jargon*', e.g. musical terms, measuring units and other trade related terms. Jargon is the specialized terminology associated with a particular field or area of activity (Murray, 2012). Most jargon is technical terms, involving terms of art, or industry terms, with particular meaning within a specific industry. Use of jargon can make it very difficult for the outsiders to understand a conversation between members of a given group, even if they speak same language. There can be very rare, random or coincidental similarities but it is not likely for technical terms to be very similar *en-bulk* in unrelated languages without borrowing. For example, without some kind of direct influence, it would be highly unlikely that about 50% of the musical terms in Sumerian dictionary would be very similar in sound and meaning to those found in a linguistically and geographically unrelated language i.e. Sanskrit. This is way beyond some random coincidence; direct contact would be very crucial to account for such an occurrence. Musical instruments themselves are inventions and similarity in instruments and their names between different areas are usually considered as a sign of borrowing.

(c) For these words to have come from Mesopotamia to south Asia, there should be at least some archaeological evidence found in Harappan sites accounting for such degree of Mesopotamian influence. However, as mentioned above, there are none – not even a single object of clear Mesopotamian origin is identified till now in the Indus realm (Parpola, Vidale, etc., see above). Whereas, as detailed earlier, a lot of Harappan activity is recorded in Mesopotamia. There is also a well-defined presence of symbols of Harappan

1760 origin or resemblance in Mesopotamian art, (a part of that is discussed in the
1761 section of archaeological evidence below).

1762

1763 (d) Just like nature of relation between Indus Valley and Mesopotamia, the
1764 formula too appears to be 'one-way ticket', because it provides a way for
1765 Sanskrit to Sumerian but the other way round doesn't seem possible. In
1766 other words, for many cases it is not possible to obtain Sanskrit words from
1767 Sumerian forms, e.g. many words appear to be clipped forms of Sanskrit
1768 terms or parts are removed. This again makes it very difficult and unlikely
1769 for these words to have come from Mesopotamia to south Asia directly or
1770 indirectly. Which is similar to what is suggested by archaeological records
1771 and echoed by many scholars as mentioned earlier. Moreover, most of the
1772 phonemes present in Sumerian are compatible with Sanskrit; therefore,
1773 phonetic change would not be a necessity, like it is for Sanskrit to Sumerian.

1774

1775 (e) Most significantly, several words are related to items that are native to south
1776 Asia or known to have reached Mesopotamia through Harappans. E.g.
1777 humped bull, species of trees/wood, units of measurement, seals, beads,
1778 dice, wooden furniture, monkey, etc. E.g. Humped bull (zebu) is one of the
1779 important and clinching evidence, which is native to south Asia (and not to
1780 west or central Asia) and established to have reached west Asia with
1781 Harappans. Sumerian word is found to be similar to Sanskrit for bull's hump
1782 (word no. 71). It is also depicted clearly on a tablet with a drawing of a
1783 musical instrument along with the name of the instrument (fig. 5), which too,
1784 has a corresponding Indian term (word no. 25). Similar is the case of species
1785 of trees, which are stated in relation with Meluhha in Sumerian records and
1786 are native to south Asia (and foreign to either of west or central Asia).
1787 Importantly, both the major categories i.e. music and trade have words that
1788 corresponds to sans. *Sindhu* (Indus) for different purposes. Which is how the
1789 world has identified the south Asian region, people, their religion and
1790 products throughout historic period and till today - India.

1791

1792 (f) Some words are specific to India from Indo-European (IE) perspective as
1793 well i.e. corresponding terms are not present in other IE languages e.g. *vāṇa*,
1794 *gargar*, *akśa*, *koś*, *goṇī*, *śaṇḍa*, *bhāṇḍa*, etc. (Kuiper 1955, 1991). Again, some
1795 of these too are related to known Harappan exports to Mesopotamia. An
1796 example could be *akśa-devana*, game of dice, present in Harappan
1797 archaeology, known to have reached Mesopotamia with Harappans (Dales

1798 1979) and the Sanskrit word for dice 'akśa' is not related to other Indo-
1799 European languages.

1800

1801 (g) Words are Indo Aryan (Sanskrit) in nature. Which is the language of the
1802 earliest known texts from south Asia that pertain to the same geographic
1803 areas as that of Indus civilization. *Rigveda* is generally dated around 1500-
1804 1200 BCE and a wider approximation is also given i.e. 1700-1100 BCE. These
1805 dates overlap with late Harappan period (ending around 1300 BCE).
1806 Although suggestions of its early dates (sometimes based on astronomy)
1807 may go to 3rd or 4th millennia BCE or even earlier. Later parts of these date-
1808 ranges are mostly related to completion of the text. This is because of the fact
1809 that *Rigveda* is not a single book but a multilayered compilation. The *Rigveda*
1810 *Samhita* is the core text (considered to be the oldest), which itself is a
1811 collection of 10 books (*maṇḍala*-s) with about 10,552 verses in 1,028 hymns
1812 (*sūkta*-s) composed by many families of sages and others over an unknown
1813 period of time.

1814

1815 The archaeological evidence and the circumstances present with the data seems
1816 to unambiguously connect it to Harappans and at the same time contradict with
1817 other possibilities i.e. origin of this phenomenon in either Mesopotamia or
1818 Central Asia.

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1820 According to the generally excepted hypothesis, Indo-Aryan language reached
1821 south Asia around 1st half or middle of second millennia BCE with pastoralists
1822 from central Asia. But this data seem to suggest that there is a strong possibility
1823 that Indo Aryan (Sanskrit) was already present in south Asia in Indus Valley
1824 civilization. According to this data, Harappans who travelled, traded and settled
1825 in Mesopotamia may have spoken a form of Sanskrit or it was the *lingua franca*
1826 of the Indus region. Detailed linguistic study is required to know the exact type of
1827 Sanskrit.

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1844 **Archaeological Evidence**

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1846 Given the kind of cultural impact suggested by Sumerian texts, there should be
1847 some evidence related to music, recorded in archeology of the region as well. A
1848 study of iconography in Mesopotamian archaeological records showed many
1849 compelling parallels in musical traditions between both the cultures. A
1850 forthcoming paper (briefed in the introduction section) talks about music related
1851 evidence found at various Harappan sites that show the possibility of existence
1852 of many instruments. It also provides a comparative study with Mesopotamian
1853 records. Suffice to say here that many of those possible Harappan instruments
1854 have parallels in Mesopotamian art and their Sanskrit names are recorded in
1855 Sumerian texts. This paper, instead, particularly concentrates on certain
1856 identifiable aspects of south Asian musical traditions, which may have reached
1857 and assimilated into Mesopotamian culture and seen in archaeological records
1858 there. Importantly, it predicted the possibility of existence of a Harappan lyre,
1859 shaped realistically like a bull, which may have travelled from the Indus Valley to
1860 Mesopotamia and evolved there in local styles as found in the Royal Cemetery of
1861 Ur.

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Zoomorphism in Indian cultural traditions: zoomorphic musical instruments (and other objects) and animal-musicians

Zoomorphism is found in many cultures around the world but Indian traditions seem to have taken these ideas to a completely different level. Zoomorphism (applying animal-attributes or designs to humans and objects), anthropomorphism (giving human qualities to animals) and therianthropomorphism (shape shifting beings), in general, are prevalent refrains in Indian cultural spheres since prehistoric periods and can be seen in countless examples. Largest majority of the Indus seals have animals as the principal motif. Further interesting development of the idea is seen on many seals in form of composite animals, where various parts of different animals are mixed. In certain examples, there are multiple heads emanating from a common neck and each head is of a different animal. There are anthropomorphic horned deities in terracotta figurines and on seals. On a famous seal, a human figure (probably a deity, sometimes called *paśupati* or proto- *śiva*) with water buffalo horns is flanked with many animals and is sitting in possibly a yogic posture on a throne that also has animals carved on it. On another seal, we find a half-human and half-tiger figure. There are zoomorphic lamps (mostly bull or cow), bird-shaped ocarina type whistles, pottery with zoomorphic figures and miniaturized terracotta anthropomorphic masks excavated at various Indus sites. There is a continuity of similar ideas in material culture till modern times (Fig 6: Seals, Lamps and other objects). Some signs in Indus script too have zoomorphic shapes. Kenoyer (2010) is a very good reference here, a few relevant excerpts:

“Iconographic depictions of humans and animals, as well as interactions between the two, are common in the art and graphic expression of South Asia, beginning as early as the late Upper Palaeolithic (ca.12,000 YA) and Mesolithic periods (10,000 YA) (Kenoyer 1992)”. “[...] anthropomorphic figures, have a long history beginning in the Upper Palaeolithic, continuing through the Indus Tradition, up to the present.”

“During the Early Harappan phase (ca. 3300–2800 BC) conflict scenes with humans and animals, as well as depictions of horned anthropomorphic images that may have been shamans or deities, are found at many sites throughout the Indus Valley. (...) These early motifs continued to be used in the subsequent Harappan phase (ca. 2600–1900 BC) when Indus cities established vast economic and ideological networks.”

1907

1908 “ (...) Other images portray animal-headed humans or human-headed animals
1909 that may represent complementary or contrasting imagery of what might be
1910 anthropomorphic animal deities or an Animal Master or Mistress.”

1911

1912 Likewise, in earliest records of Hindu religious imagery we see a supernatural
1913 anthropomorphic monkey like creature “*Vṛṣākapi*” of *Rigveda*; many of the
1914 important divinities like Indra, in *Rigveda*, have zoomorphic forms e.g. a *vriśabh*
1915 or bull, *Aśva* or horse, *Mesha* or a ram and so on; later Gods like *Ganeśa*, *Varāha*,
1916 *Narsimhā* and *Hanumān* etc. have heads of animals like elephant, wild bore, lion
1917 and monkey respectively with human body (sometimes with other animal like
1918 features as well); there are also multi-headed versions of many gods where each
1919 head is of a different animal; as well as other therianthropic figures such as the
1920 *Nagas* and *Garudas* etc. A non-religious and very important example is highly
1921 popular anthropomorphic characters of *Panchtantra*. Early date for its surviving
1922 version is around 300 BCE but it is understood to have content whose roots may
1923 go back to *vedic* period and even beyond (cit?). This list can go on and on, but for
1924 this study, the most relevant manifestation of these ideas is the tradition of
1925 zoomorphic musical instruments and various classes of zoo/anthropomorphic
1926 musicians such as *Kimpurusa-s*, *Kinnara-s*, *Gandharva-s* and *Bhand-s*.

1927

1928 It is important to note that what we are discussing here, are general artistic ideas
1929 and aesthetic choices that have been repeatedly seen in the subcontinent and are
1930 not specifically related with any language or religion. Rather, it is an over-
1931 encompassing cultural phenomenon. Irrespective of the interpretations these
1932 ideas held in different periods, these particular aesthetic choices show a
1933 remarkable continuity from very early periods to modern times and present
1934 themselves in large variety.

1935

1936 In India, there is a long-drawn tradition of making instruments (specially
1937 *chordophones* i.e. stringed ones but others too) entirely in the form of various
1938 animals and birds and thereby lending their name to the respective instrument,
1939 as already mentioned earlier. The tradition of such chordophones continued in
1940 India until recently, although animal motifs and partially zoomorphic designs
1941 still continues. *Mahābhārata* mentions many instruments that are zoomorphic
1942 such as *nandi* (a bull shaped instrument), *kachchapi* (a turtle shaped lute),
1943 *gomukha* (an instrument with cow or bull’s head), *govishan* (a trumpet made
1944 from cow or bull’s horn) and *rudri* (partially zoomorphic, still continues) etc.

Lāṭyāyana (a late *vedic* period author) mentioned an instrument named *kapiśīrṣṇī* कपिशिर्ष्णी, 'kapi' is monkey and *śīrṣa* is head, therefore, it could be an instrument with monkey's head attached to it or shaped like it in full or part. Fig. 6 (6.1-6.12) shows a whole gamut of animals shown as instruments from different areas and originating periods in India, which have continued and survived (at least in museums). A few examples of other objects are also included, which show presence of a larger cultural phenomenon.

Fig. 6: (6.1) Peacock harp (6.2) Peacock lute (6.3) Fish Harp (6.4) Fish clapper (6.5) Fish Object (6.6) Crocodile lute (6.7) Crocodile harp (6.8) Tortoise Lute (6.9) Tortoise Fiddle (6.10) Anthropomorphic Snake Trumpet (6.11) zoomorphic objects. Interestingly, all of these animals i.e. fish, peacock, crocodile, tortoise and even snake etc. are recurring features in Harappan art too.



Fig. 6.1 Peacock Harp



Fig. 6.2: (Above) Peacock Lutes, despite similar shape these are different instruments – one is plucked and other is bowed instrument. (Below) Another exquisite specimen at MET museum

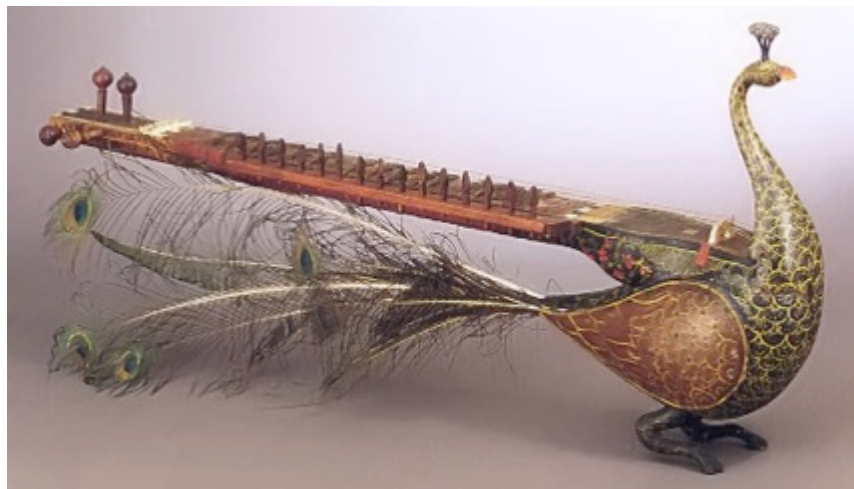


Fig. 6.3: Fish Harp (modern reconstruction)



Fig. 6.4: Fish Clappers



Fig. 6.5: Fish shaped Beetle Box, 18th Century AD



Fig. 6.6: Crocodile Lute



Fig. 6.7: Gharial (Indian fish eating crocodile) shaped Harp



Fig. 6.8 Tortoise shaped lute 'kachchpi' – mentioned in Mahābhārata.

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Fig. 6.9: Tortoise Fiddle

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Fig. 6.10: Anthropomorphic Snake Trumpet from Rajasthan, India and details of the hood of the snake

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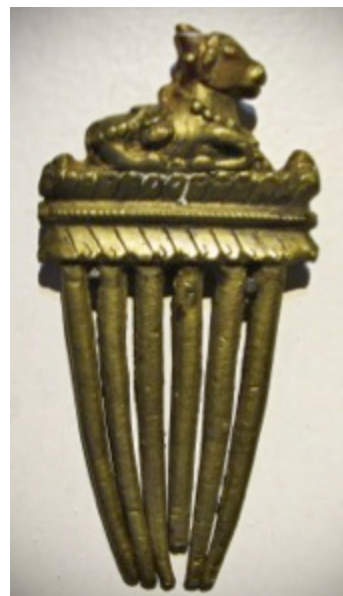
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Fig. 6.11: (Above) Harappan lamps; (Below) A lamp and a hair dryer from Maharashtra, India, 18th Century AD



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But apart from instruments that are fully zoomorphic, there are many more instruments found in India (Fig. 7) that have animal motifs or are partly animal like. In many cases an animal head (sometimes tail part too) is attached to the main body, which is shaped more conventionally, perhaps for sound or convenience of some kind. Here we see a kind of contrasting idea, the instrument becomes the body of the animal/bird instead of body of the instrument shaped like one. Similar feature is seen on Mesopotamian lyres as well.

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Fig. 7- (7.1) *Rudra vīṇā*, (7.2) *Vichitra vīṇā*, (7.3) *Saraswati vīṇā* (7.4) Swan shaped *vīṇā* (7.5) *Phet Banam*, (7.6) *Sārindā* (7.7) drum with bulls, (7.8) Multi-headed Snake *Tānpurā*.



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Fig. 7.1: Rudra vīṇā with a snake's head emanating from it; mentioned in mahābhārata.



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Fig. 7.2 Vichitra Veena, a fretless plucked stringed instrument played using a slide



Fig. 7.3: Saraswati Veena with golden lion head



Fig. 7.4: Swan shaped lute



Fig. 7.5: Taanpura with a multi-headed snake emanating from the neck



Fig. 7.6: Drum with two bull-calves and a Shiva Lingam (c.f. fig. 5 lilis)



Left - Fig. 7.7: Phet banam with an assortment of animals carved on it; a fish, tortoise elephant, monkey, scorpion and horse etc. with three human figures. It is played by Santhali (an Austro Asiatic language) speaking people in northwestern region in India.

Right - Fig. 7.8 Sarinda (a bowed stringed instrument) with possibly a Himalayan Monal bird like figure attached above it. Monal is the "state bird" of Uttarakhand state in India. It is found in Afghanistan and Pakistan through the Himalayas in India, Nepal, southern Tibet, and Bhutan.

As the figures 6 and 7 show, presence of such a large variety of large-sized zoomorphic stringed instruments in India is striking and exist among speakers of both Aryan and Dravidian languages in India. It is very reasonable to think that this tradition is part of the same cultural synthesis involving animal symbolism that originated with Indus valley civilization.

Apart from instruments, the notes of musical scale in India are mentioned to have originated from different birds/animals e.g. peacock, nightingale, etc. There are also many ragas-s/ragini-s (melodic frameworks), tala-s, etc. that have names derived from animals/birds.

Symbol of Harappans settled in Mesopotamia – The Bull

Most of the round and rectangular seals found in Mesopotamia with Indus script or iconographies depict a bull and there is an almost general consensus that this big bull visible in these seals is the Indian gaur (*Bos gaurus gaurus*). Thus Vidale says, “(...) the Indus families living in the western commercial enclaves already recognized the gaur, one of the standard animal figures of the standard seals in the motherland, as their symbol.”

The “*Harappan*” Bull Lyre

With this background, a very rarely depicted fully zoomorphic bull-shaped lyre in Mesopotamia becomes of great interest here (not to confuse with popular bull-headed lyres). Fig. 8 shows scene of a banquet on a cylinder seal from a grave in the Ur cemetery (PG L054). In the bottom register there are 2 figures playing clappers, a dancer (could also be a musician playing a straight clapper or a rattle), and a seated figure playing a bovine lyre. The top register shows festive banqueters. U. 11904 (Woolley 1934, pt. 1: fig. 23) (Anne Kilmer, 1998).



Fig. 8

In context of the presence of perhaps many Harappan musicians in Mesopotamia, Indian tradition of zoomorphic instruments and the bull being the symbol of

Meso-Harappans, one is tempted to connect this particular lyre to them or of an Indus origin. As discussed earlier, Sumerian word *alġar*, i.e. bull lyre corresponds to Sanskrit *ājakāra*, i.e. *śiva*'s bull. Other instruments shown in the scene are clappers, which, as already discussed earlier in textual records, possibly reached Mesopotamia from India. (Also c.f. fish-shaped clapper in fig. 8). Moreover, there is nothing about this particular lyre that specifically shows that it cannot be Harappan in origin or inspiration, unlike other bull-headed lyres found at Ur cemetery, which have artwork that is clearly Mesopotamian in style. In fact, its realistic shape like an actual bull is distinctly congruous with Indian traditions in its inspiration. But there is still more evidence that may point towards such a conclusion.

In the course of this study, to distinguish this particular instrument from other bull-headed lyres found in Ur cemetery, it was designated "*nandi*" (or "*nandi vīṇā*"), an epithet of *śiva*'s bull, in accordance with the Indian tradition of naming instruments. Same term is used in this work, for the same purpose.

Note: Harps and lyres are similar instruments except that in a harp, strings are attached to the body directly from both ends or enter directly into the hollow body of the instrument. Whereas in lyres, at least some part of the total travel of the strings happens over the body, employing a bridge. But it is not necessary and in fact, unlikely that ancients differentiated them in this manner.

Animal Musicians and the Lyres of Ur Cemetery

Primary source of animal-musician imagery, especially from the early periods in Mesopotamia, are the inlays on bull lyres found in Ur cemetery. Depiction of anthropomorphic musicians is extremely rare otherwise in that period.

Mortimer Wheeler (1960a: 90-3) included the representation of "humans disguised as animals" in his comprehensive description of the most significant of the similarities in both the cultures. Many other scholars have expressed similar thoughts. R.D. Barnett (1973) of the British Museum writes, "Perhaps such ideas of animals acting like humans, which we find in Mesopotamian art, came to Sumer with the monkey from India, the classic home of the animal fables". (On animal fables, see A. Aarne and S. Thompson, *The Types of Folk Tale*, 1961). This idea is further supported by the fact that, "we may have evidence of visual motifs for which we do not have a comparable text, especially in the early periods of Mesopotamia. In other words, we do not know what other stories of scorpion

men (*see below*) or animal orchestras existed” (Piotr Steinkeller). Also relevant here is Max Muller’s statement in “On the Migration of Fables”, where he writes, “(...) it is extremely likely that fables, in particular animal fables, had their principal source in India”.

Scenes on panels of these lyres are usually interpreted in relation with underworld banquet. But according to Cheng (2009), “(...) The oft-repeated underworld interpretation of these decorations has stemmed primarily from their context of discovery, the Royal Cemetery. (...) We should not let the burial context of the finds drive our interpretation of how and where they were used generally. Furthermore, these afterlife interpretations are a case of generalizing from a small sample; the panel from Great Lyre is given more prominence than perhaps it deserves.”

On the other hand, in south Asia, as explained earlier, the traditions of animal-musicians and performers are part of mythology as celestial musicians and singers even in the oldest textual records found in the region e.g. the *Rigveda* and many other. As discussed earlier, themes that amalgamate human and animal attributes are abundant in Harappan iconography as well. It is likely that these ancient indigenous traditions may have become part of later mythology. Two of the classes of Indian traditional performers recorded in Sumerian and Akkadian texts i.e. *Kinnara-s* and *Bhand-s* (both discussed in detail above), are well known to use animal getups or disguises in their acts.

Leonard Woolley (1934) excavated remains of many lyres from the royal cemetery of Ur, Early Dynastic III period. The Lyres had a zoomorphic head protruding from the body, (mostly it is of bull but on two of them, it’s probably cow, identified on the basis of presence or absence of beard like feature, respectively). One lyre has a goat like figure attached above sound box.



Fig. 9: One of the Mesopotamian bull-headed lyres at British Museum (BM 121198 a)

Iconography on panels of the lyres is clearly Mesopotamian in style. Yet, protruding zoomorphic heads strikingly remind of the design philosophy of Indian instruments as mentioned above. Not only that, the iconography seems to depict themes that are similar to south Asian traditions, e.g. anthropomorphic musicians and more.

Let us examine the panel on so-called Great Lyre and compare those images with the traditions in south Asia. It is divided in four registers (Fig. 10.1).



Fig. 10.1: Panel on The Great Lyre (Penn Museum B17694A)

The first register shows a scene similar to the “master of animals” that is paralleled well in both the civilization. But in this particular example, an explicitly male nude figure lovingly holds two anthropomorphic bulls in his arms. Unlike that common “combat” image, here he is a “friend of animals” or a “protector of animals”. So much so that the line between human and animals itself is blurred, a trait which is characteristic to the south Asian artistic thought. While female nudity is well attested and discussed in Mesopotamia, but explicit display of masculinity is somewhat peculiar. According to Dales (1979), “neither male nudity, male obesity, nor animation are found among Sumero-Akkadian figurines of this date (Of Dice and Men, GEORGE F. DALES (1979); Ancient Cities of Indus (Edited by Gregory L. Possehl pg. 142)). While not in figurines, male nudity is still present in Mesopotamia but only in very specific contexts. One of them is of dead soldiers (probably enemies) or prisoners. But in most of those examples, it is generally part of a larger narrative or scenes and showcasing masculinity is usually not the point; nor it is given any particular prominence in

many of those cases. In other context, strangely, in Early Dynastic and Akkadian periods, display of masculine nudity is mostly found in iconographies on the objects (seals or otherwise) that also feature zoo/anthropomorphic or horned human figures, musicians, priests, or water buffalo and other animal similar to panels of bull-headed lyres. Other than that, male nudity is more or less absent in Sumero-Akkadian periods. Some

scholars have proposed that male nudity may represent foreigners, which may include not only foes but friends as well. Whereas, in south Asia, it is present in large number of figurines in Indus archaeology in both early and mature Harappan phases and on many seals as well. In some examples, anthropomorphic horned figures are shown in *ithyphallic* state. It is also commonly found in sculptures in many temples related to Hinduism, Jainism and Buddhism throughout historic periods in the region. *śiva*, who is generally considered to be one of the most ancient, widely worshipped God and the third of the Hindu Trinity, is worshipped much more commonly in the form of the *lingam*, or the phallus. Evidence of the lingam in India dates back to prehistoric times (2300-2800 BCE?). In his human form, in early periods (?), *śiva* is some times depicted in *ithyphallic* state.

Second register shows a couple of animals serving food and some kind of beverage, perhaps in a banquet (see word no. 47 *vaṃśaja/banśur* – table).



Fig. 10.2 and 10.3

Third register (Fig 10.2) on the bull-headed lyre shows an anthropomorphic musician playing a bull-headed lyre. Another animal, a bear, is holding the instrument, some times interpreted as a dancer. A third small figure is like a fox or jackal, playing a *Sistra* (or *Sistrum*). Galpin (1937) suggested its origin in India. Similar instrument is mentioned in Sanskrit records as *śṛṣṭā* (शृष्ट), a stick with jingles. Fig 10.3 shows an Indian painting (1820 AD, British Museum 2007,3005.53) of highly celebrated celestial anthropomorphic musician, Tumburu, playing a lute that has a zoomorphic head attached at the end of its

neck. He appears in both the epics i.e. *Rāmāyana* and *Mahābhārata* as well as in other texts. The painting is reasonably analogous to his description in the ancient texts. If we ignore the elements that are clearly of later origin (ornaments, clothing, general ‘modernity’ in the form) or the exact choice of instrument, and compare it to Mesopotamian image in fig. 10.2, then both the images seem to represent basically the same thing; i.e. “an anthropomorphic musician, playing an instrument that has a zoomorphic head attached to it”. Even the choice of animal part of musician is harmonious in appearance. Discussion here is not to postulate in particular that it is in fact *Tumburu* depicted on Ur lyre, but the cultural synthesis behind it.



Left - Fig. 10.3: Fourth register on the panel of great lyre. Right - Fig. 10.4: A folk musician from Rajasthan, India playing a clapper (karatāla or kharatāla)

In the last one (fig. 10.3), a human-scorpion musician is playing a clapper instrument and a gazelle is playing a rattle/shaker (or serving drinks?). Exactly same variety of clappers is still played in India and Pakistan (Fig. 10.4) especially in present day Rajasthan, Sindh and Gujrat provinces where many important Harappan settlements are found. Technique of these folk musicians, who play this simple instrument today in the subcontinent, is highly sophisticated. They can play very intricate rhythmic patterns at a very fast tempo.

Other than lyres of Ur, the only attestation of animal-musicians in early periods

in Mesopotamia is on a seal (ED II, 2650-2550 BCE), which was also found in Ur (Fig. 11) (Hansen 2003). There are two instruments clearly seen in this seal being played by these musicians (2nd and 3rd equids) i.e. an arched harp and a clapper. As discussed above, Sumerian/Akkadian words for both are very similar to their Indian names and shapes of harp and possibly clappers are represented in Indus script as well. The first equid might be playing a small lyre (or holding a jar?).

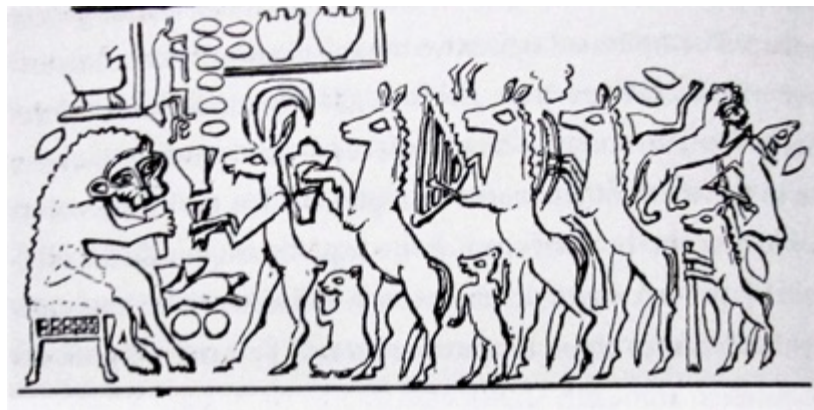


Fig. 11: Drawing of impression on clay from a cylinder seal: Ur, Early Dynastic II, 2650-2550 BCE

Similarities between Indian and Mesopotamian forms in the registers of this lyre and in other examples are very striking and seem unlikely to be a random coincidence. Rare presence of animal-musicians in Early Dynastic period and no evidence of existence prior to that, support Harappan influence.

Despite so many similarities, the distinctive Mesopotamian style of the decorations on Ur lyres cannot be ignored.

Many of the carnelian beads found in the graves of the main Sumerian cities or at Susa in the second half of the 3rd millennium BCE are presently interpreted as made locally by Indus craft-persons or artisans trained in an Indus technical tradition but producing shapes and decorations after the specific local demand. Vidale (2004) points out that Indus craftsmen had developed an intimate understanding of Mesopotamian culture and markets. They promptly adapted their products and trade to the fast-changing political and ideological environments of the local social and cultural evolution. Musical instruments are usually fragile and regularly require repairs. If there were so much of Harappan

music was present in Mesopotamia as textual evidence suggest, then a respective number of instrument makers would also be needed. The “Epic of Gilgamesh” mentions a “flute of carnelian” (British Museum BM 36909, BM 37023, etc.). As Gilgamesh prays to the gods of the Netherworld, he names the gifts he is burying with Enkidu for his journey in the afterlife including a flask of lapis lazuli and a flute of carnelian (from Book VIII of the Epic, lines 144–149)(George 1999, 2003, 2003a). If such an object actually existed, even for symbolic or ritualistic purposes, it would be not very different from a larger barrel type long carnelian bead with holes ^{note}. Only Harappans had the technology to make such an object (Kenoyer?). Therefore, the possibility of involvement of Harappan craftsmen in the manufacture of musical instruments in Mesopotamia is thus, very much a tenable premise and as the evidence suggest, could be the case.

Note: Indian transverse flutes are extremely simple in construction; it is just a hollow pipe (of many sizes and materials) with holes. But the technique and virtuosity of its players, just like *karatāla*, is a completely different story. High-pitched variety of Indian flutes can be very small, as short as about 18 cm in length with a diameter of about 1.5 cm.

These wooden lyres were richly decorated or overlaid with gold, silver, copper, lapis lazuli, mother of pearl, etc. (Kilmer 1998). Interestingly, most of these materials (as well as certain types of wood) are mentioned regularly as supplied to Mesopotamia from the Indus area or through Harappan traders in both prepared and raw forms. The particular material used in manufacturing of surviving parts of these lyres may be tested to know their origin. Moreover, the manufacturing of wooden musical instruments would not be very different from that of royal furniture, which the Indus trade centers were supplying to Mesopotamia (see above).

The excavator (Wooley) suggested that prior to this form, the bull-headed lyre could be more like a real bull with legs, etc.; and rightly so, because *nandi* type lyre is attested only in early periods with low occurrence. Whereas bull-headed lyres seem to be popular in Sumero-Akkadian periods, as found in art and actual remains.

Here is another example that may reiterate the possibility of Harappan participation in musical spaces in Mesopotamia - Fig. 12.1 shows the lower register of so-called “Stele of Music” found in Telloh (ancient Girsu) dating to the reign of Gudea (2100–2000 BCE). It has a seated musician playing on a large lyre with a small but realistic figure of a short-horned bull attached above sound box.

Interestingly, the bull appears quite similar to the ones seen on “Indus style” seals found in Mesopotamia, and as found in Indus Valley.



Fig. 12.1 Lower register of “The Stele of Music”

All of the above-presented evidence strongly suggests that bull-headed lyres of Ur cemetery could be a hallmark of fusion of Harappan and Mesopotamian cultures. Tradition of zoomorphic instruments of south Asia and specially *nandi* type fully zoomorphic bull lyre may had been their inspiration. But they were manufactured in Mesopotamia, possibly by acculturated Harappan artists and artisans in local styles. In other words, these lyres could be Harappan in inspiration but Mesopotamian in presentation.

The bridge

A bridge is a device that supports the strings on a stringed musical instrument and transmits the vibration of those strings to another structural component of the instrument—typically the soundbox. The bridge of these lyres is quite wide and appears flat on the top. Such wide and flat (or slightly curved) bridge is widely found in Indian instruments (see figures 6 and 7 above) including most prominent (and ancient) ones like *Rudri*, *Saraswati*, *Kachchapi* and many other *vīṇā*-s (many of which are fully or partially zoomorphic) and continuing till modern *Tānpura* and *Sitar*. This bridge is the reason behind that certain twang in the tone of these instruments (C. V. Raman, 1905). Indian smaller lutes (*Ektara*, *Dotar*, *Sarod*, etc.) and bowed instruments (*Rāvanhast*, *Sārangi*, *Sārinda*, *Isrāj*, etc.) mostly have a bridge of thinner variety.

Dilmun connection

Another evidence suggesting Indus origin of this fully zoomorphic lyre, is found on a 'Gulf seal' from Falaika in Bahrain (Fig. 13), which was of course *en route emporium* through which the Harappan trade was carried out with Mesopotamia after the direct trading had come to a stop somewhere around 2100 BCE. A strong Harappan impact is seen in the archaeological records from that period. The area is usually identified as Dilmun. According to Steffen Terp Laursen (2010) "The innovative group of risk-taking entrepreneurs that were instrumental in transmitting Indus Valley sealing, writing and weight technology into Dilmun culture must at first have been composed of break-away Harappans (c.2100 BC), followed by a combination of Dilmunite and acculturated Harappan merchants (c.2050 BC)".



Fig. 13

But in such a case, assuming that *Nandi* reached Mesopotamia with Harappans, did these "break-away Harappans" bring their beloved instrument here too? Fig. 13 shows a round seal from Falaika, which depicts a bull and a musician playing *nandi* like instrument. Presence of this particular instrument in Dilmun does support its Indus origin, but not exclusively so, since Dilmun had relations with Mesopotamia too since probably 3000 BCE. However, circumstantial evidence supports its origin in Indus valley because the attestation is from the period around 2000 BCE when strong Harappan influence is recorded and Harappans were trading with Mesopotamia exclusively through Dilmun. Whereas, *nandi* in Mesopotamia is attested only in early periods when Harappan direct trade started to appear in Mesopotamia and afterwards it is only Ur style bull-headed lyres seen in iconography. In other words, this instrument is attested in Mesopotamia and Bahrain in separate periods but in both cases, coinciding with the time when Harappan contact start to appear.

CONCLUSIONS

Just as concluded by During Casper (1979) and others, the textual and archaeological data is suggestive of a strong Harappan cultural impact in music and performance spheres along with economic domains in Mesopotamia – already established by Early Dynastic periods and which intensified in later periods of their acquaintances. Impact in music seems to be very strong on the basis of percentage of similar words. The spread of the cultural elements may have ultimately helped, perhaps greatly, in strengthening the trade or they even possibly became active contributor to it.

The idea of anthropomorphic musicians and zoomorphic musical instruments may have reached to Mesopotamia from India, the classic home of animal fables. One such example could be a lyre that was realistically shaped like a bull. Those ideas may have evolved there and amalgamated with local styles - in forms of the lyres found in Ur cemetery - with possible involvement of acculturated Harappan artisans in their manufacturing. Study on materials used in manufacture of surviving specimen may help to know if Harappan traders supplied some of the raw material.

There is much work to be done to better understand the textual data but this data in conjunction with independent archaeological and circumstantial evidence suggest that there is a strong possibility that Harappans who travelled, traded and settled in Mesopotamia may have spoken a form of Sanskrit or it was the *lingua franca* of the Indus region.

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