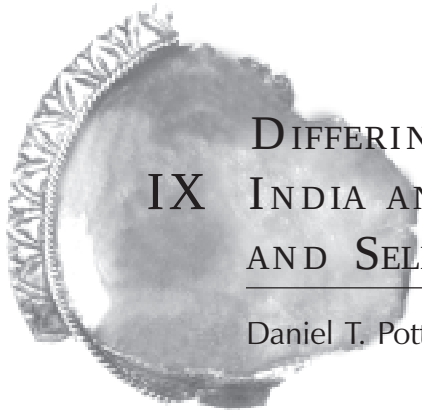

IX Differing Modes of Contact between India and the West: Some Achaemenid and Seleucid Examples

Daniel T. Potts

In reflecting on the mechanics and significance of Greek contact with India and the legacy of Alexander my mind began its ruminations, not in the fourth century BC, but several thousand years earlier. Perhaps because I am an archaeologist and constantly tend to go back to the earliest roots of the phenomena I study, I began to think of India's contacts with the West in a much different time-scale than that implied by the title of this volume. A history of contact with other cultures may create a pre-disposition to accept, not necessarily in toto, but at least for purposes of reformulation, the thoughts or technology or products of another people. Thus, one might argue that two or three centuries of contact during the late third millennium BC between the Akkadian and Ur III States in southern Mesopotamia and the cities of the Harappan civilization had created some sort of pre-conditions for the receptivity later shown in India when contacts with western cultures unfolded in the wake of Alexander's conquest. On the other hand, we are talking about a gap of nearly 2000 years between the Harappan and the later Indian contacts with the West, and it seems difficult to sustain the thesis that the former episode could possibly have influenced the way in which the latter played out.

We should not altogether rule out the possibility, however, that there may have been later episodes of contact with the West – the West as viewed from an Indian perspective including Iran and Mesopotamia – which did in fact create conditions relevant to an understanding of the period of Greek contact. Attempts to track such later contacts, principally in the first millennium BC, are not new. In 1898 J. Kennedy published a long survey in the *Journal of the Royal Asiatic Society* on 'the early commerce of Babylon with India' from 700 to 300 BC (Kennedy, 1898). There is much that is dated in Kennedy's account and can be rejected outright, as is to be expected, but there are also points which would bear re-analysis. It would be very interesting, for example, to find and properly analyse the alleged Indian cedar from the palace of Nebuchadnezzar at Birs Nimrud (ancient Borsippa), discovered by Hormuzd Rassam and displayed in the British Museum when Kennedy was writing (Kennedy, 1898: 266). Similarly, the 'two rough logs of wood, apparently teak,' which Col. Taylor found in the Nanna-Ningal temple complex at Ur (Kennedy, 1898: 267), although never removed to the British Museum, were cited by Woolley and

Fig. 9.1 Apadana: Tribute Procession showing the Indian (Gandhara ?) Delegation on the Eastern Stairway of the Apadana at Persepolis in Iran.

subsequently by Moorey (Moorey, 1994: 360) as *bona fide*. Claims that rice, mentioned in a fragment of Sophocles (Triptolemos 609N, c. 596 BC); sandalwood, said to be attested in I Kings 10: 11-12 and II Chronicles 2: 8; 9: 10-11 under its Tamil name (Hebrew *ahalim/algum*; cf. Tamil *aghil*); and peacocks, allegedly mentioned by Aristophanes (e.g., *The Birds*, 102, 269), all reached the West from India by the fifth century BC (Kennedy, 1898: 268) should be tempered against the knowledge that any or all of these goods may have been transmitted westward via the Persian Empire. Certainly in the case of rice, we know that this cultivar was grown in Khuzestan (south-western Iran) during the Achaemenid period (Strabo, *Geography* 16.1.18; Diodorus Siculus, *Library of Hist.* 29.13.6; cf. Potts, 1991), and not necessarily imported in the West directly from India. The case for the peacock was made by Kennedy largely on the basis of the Buddhist text, *Baveru Jataka*, which relates the story of the introduction of the peacock to Babylon (Baveru) by Indian merchants and which Kennedy believed 'may go back to 400 BC' although the folktale on which it was based 'must be much older' (Kennedy, 1898: 268). In fact, it was subsequently argued that the peacock was introduced into Mesopotamia from India during the Harappan Period. The German Sumerologist Adam Falkenstein identified the bird ha-ia$_3$, which occurs in the myth *Enki and the World Order*, l. 229, with the peacock, since the bird is described in a passage in which Enki decreed the fate of Meluhha, commonly identified with the Harappan area, and the name occurs also in the text *Nanshe and the Birds* and in Old Babylonian sources as well (Veldhuis, 2004: 252).

In general, Kennedy's attempts to demonstrate contact between India and the West in the mid-first millennium BC have not found much favour with later scholars, the majority of whom, like Heinrich Schiwek, Jean-François Salles and others, have come at this problem from an Irano-Hellenic point of view, citing the expedition of Scylax of Caryanda, sent out by Darius I to reconnoitre the mouth of the Indus, as described by Herodotus (4.44), as the first serious engagement with India by the West in the first millennium BC, followed by the annexation of parts of India into the satrapies of Gandara, Thatagush and Hindush.

The sources relating to those provinces – whether Herodotus, other Greek writers, the Bisotun inscription or the Persepolis fortification archive – have been discussed extensively in recent years (Vogelsang, 1990; Fleming, 1993; Magee, Petrie, Knox, Khan and Thomas, 2005; Figs. 9.1 to 9.3) and I do not intend to rehearse what others have already gone over. Much of the discussion has focused on geographical problems and I have nothing new to add on that score.

Interestingly, however, one final piece 'of less direct evidence,' which Kennedy adduced is worth noting. He wrote, 'Weber considers that most of the pre-Alexandrian astronomy (or astrology) of the Indians had a Chaldaean origin. Some of these borrowings must go back to the seventh and sixth centuries BC' (Kennedy, 1898: 269). Kennedy's reference here was to Albrecht Weber's *History of Indian Literature*, published in an English translation in 1892, in which the German Indologist reiterated his belief that the:

> Hindu division of the moon's path into twenty-seven (or twenty-eight) lunar mansions ... are of Chaldaean origin, and that from the Chaldaeans they passed to the Indus as well as to the Chinese, (Weber, 1961: 247-248).

In fact, the idea that the 28 *naksatras* of the *Atharvaveda* and select *Brahmanas* derive from Mesopotamia cannot be corroborated by any cuneiform evidence (Pingree, 1963: 230). There is much in Indian astronomy and astrology, however, which has analogies with the Mesopotamian data, and for over 40 years the late David Pingree of Brown University argued that the transmission of this information occurred principally during the Achaemenid period. This, in fact, is where I would like to re-direct the discussion, away from the Western transportation of *exotica* like sandalwood, teak and peacocks, and back to the Eastern reception of Western thinking – in this case astronomical and astrological lore – which provides an interesting basis on which to build a re-interpretation of Alexander's contacts with India.

The evidence adduced by Pingree in a series of ground-breaking publications is compelling. Summarizing his main identifications, we can see Mesopotamian parallels in the following areas.

1. Use of the *tithi*, the 30th of a synodic month, as a standard unit of time in the *Jyotisavedanga*, as in Babylonian linear astronomy of the Seleucid era (Pingree, 1963: 231).
2. Use of the 3:2 ratio of the longest: shortest day of the year 'in tabulating the increase and decrease of the noon-shadow throughout the year', an important aspect of calculating the length of the shadow of a *sanku* or gnomon, and hence an integral part of early Indian time-keeping (Pingree, 1963: 132).
3. Use of *gocara* astrology, as in the *Ramayana* and *Mahabharata*, in which 'the planets ... appear in an astrological context, their influence depending on their conjunctions with the constellations, on their retrogressions, and on their transits', 'a method familiar from the reports of the astrologers of Babylon and Nineveh' (Pingree, 1963: 232-233).
4. Use of the *Puranic* order in naming the planets in the early second century Nasik cave inscription honouring Gautamiputra Satakarni and in a passage in a *Purana*, borrowed from a Babylonian source (Pingree, 1963: 233).
5. Use of the *kaliyuga*, of 432,000 years, a division of the *kalpa* of 4,320,000,000 years accorded to the lifetime of Brahma, which is a Babylonian number equal to the 'span of time given to the Babylonian kingdom before the Flood in the histories of Berossos and Abydenus' (Pingree, 1963: 238).

Fig. 9.2 Apadana Indian Tribute bearer carrying perfume bottles.

As Pingree wrote of this last example:

> It seems likely that it should have become known as a significant number in India at the time when other Babylonian influences were being felt, that is, during the Achemenid occupation of the Indus Valley (Pingree, 1963: 138).

Since I am neither an astronomer nor a mathematician, let alone a specialist in early Indian literature, it would be wrong for me to persist in citing examples. Rather, I wish now to return to the larger issues. Many of these were well-stated by Pingree in 1973. Speaking of the general process of transmission from Babylonian astronomy and learning to India, particularly before the transmission of Babylonian lore via Greek sources, he asked,

> Was this an isolated phenomena (*sic*), or part of a general Iranian influence on Indian culture in the fifth and fourth centuries BC? Unfortunately, our answer to that question is rather clouded by the scarcity of literary or archaeological data from the period in question. We do not know how far into India the Achaemenids penetrated, but probably their control did not extend beyond the western parts of the Panjab as Alexander met numerous small and apparently independent states in the Indus Valley. But Iranian influence in the early fifth century was sufficiently strong to make possible the safe completion of Scylax's exploratory voyage down the Indus, and Taksasila, in the region where the Sanskrit grammarian Panini seems to have worked, was certainly a city where cross-cultural contacts were frequent. And it is arguable that the enormous and often-studied Iranian influence discerned in Mauryan polity, architecture, sculpture, epigraphy, and the like in the third century BC was an inheritance from the pre-Mauryan Nandas: rather than from the post-Alexandrian Greeks' adaptations of Achaemenid forms .... It is reasonable, then, or at least so I believe, to see the origins of mathematical astronomy in India as just one element in a general transmission of Mesopotamian-Iranian

cultural forms to northern India during the two centuries that antedated Alexander's conquest of the Achaemenid empire (Pingree, 1973: 10).

Pingree's view of the transmission of Babylonian astronomy and mathematics to India contains a number of assumptions, which it would be well to highlight at the outset. The most important of these can be listed as follows:

1. He has explicitly linked that transmission to the political destiny of India – whatever geographical limits we may wish to place on the term – under Achaemenid rule.
2. He has, at least in this quote, considered that transmission an example of 'Iranian influence' on Indian culture.
3. Finally, back-pedalling somewhat, he has concluded that the transmission which he has so clearly demonstrated was an example of 'Mesopotamian-Iranian cultural forms' being transplanted to northern India, during the course of the two centuries preceding Alexander's arrival.

In each case, Pingree may well be correct, but there is an equally compelling counter-argument which could be mounted, viz., that:

1. The transmission of Babylonian esoteric lore – for it certainly was esoteric to the extent that it was controlled and reproduced within a highly circumscribed circle of specialist priests – had nothing to do with Achaemenid control on the borders of greater India.
2. The transmission of Babylonian knowledge should in no way be considered an example of 'Iranian' influence, since there is nothing Iranian about it; rather, it is wholly Mesopotamian, the product of a scholarly tradition deeply embedded in the Babylonian temple, which, in the fifth and fourth centuries BC, can only be considered 'Achaemenid' or 'Iranian' in a political and chronological sense, by virtue of the fact that Babylonia was then a satrapy of the Achaemenid Empire.
3. The transmission may have had as much to do with the *pax Persica* or *Achaemenidica* which brought distant satrapies, in this case Babylonia and Hindush, Gandhara and Thatagush, into one and the same political orbit, as it did to any specific Achaemenid influence in or near those satrapies.

In short, I would argue that there is absolutely nothing Achaemenid or Iranian about the origin, use or transmission of Babylonian astronomy to India. We have no indications that this lore was ever put to use by Achaemenid officials and to the extent that it was the esoteric province of polytheistic, Babylonian priests, is unlikely to have been of much interest to Zoroastrian, Achaemenid priests. Nor is it likely that the lore entered via the political control of the eastern satrapies where, more likely than not, Achaemenid representation was pretty thin on the ground.

Rather, I would suggest instead that what the Achaemenid Empire did in a positive sense in this regard was to unite the two most significant areas in this discussion – Babylonia, the source of the astronomical and mathematical lore – and India, where astronomical and astrological traditions date to at least the second millennium BC (Bag and Sarma, 2003) – and that the contact which resulted in the interaction was a maritime contact independent of any official Achaemenid sanction. Thus, the Achaemenid Empire brought these two disparate cultures under one umbrella and this can only have accelerated contact between the two regions. Such contact

Fig. 9.3 Apadana Depiction of the Indian ass.

had a long history, even if it may have been discontinuous. We first hear of it during the Akkadian Period, when Sargon of Agade boasted that ships from Meluhha, Magan and Dilmun, i.e., from the Indus Valley through the Persian Gulf, docked at the quay of Agade. In this regard, the Achaemenid Empire was a facilitator, not a contributor, since the lore involved was solely Babylonian.

Interestingly, we have a number of references to Indians in Babylonia, which confirm contact between the two regions on a much more basic human level. A Gandharian female slave (^{URU}*Ga-an-da-ru-i-tu$_4$*) with the Babylonian name Nana-silim in the Egibi merchant family's household at Babylon is attested in 508/7 BC (Zadok, 1977: 124; Dandamayev, 1992: 165). A type of linen attested at Uruk called ^{GADA}*gan-da-ra-sa-nu* is thought to be Gandharan as well (Zadok, 1977: 125, n. 351). At Nippur, moreover, a *hatru*-organisation of Indians ^{LÚ}*In-du-u/ú-ma-a-a* is attested in 425/4 and 417/6 BC (Zadok, 1977: 125). These were no longer first generation Indians, since their names are all Akkadian, but rather the descendants of a colony of Indians that had probably been brought into Babylonia early in the period of Achaemenid rule. The *hatru* here designated 'a territorial, administrative and fiscal unity' and applied equally 'to the population living there, and possibly the socio-professional community they formed' (Joannès, 2000: 208). What these Indians were engaged in, apart from agricultural pursuits, we do not know, but we find references to a 'foreman (*shaknu*) of the Indians' in a Nippur text from 417 (Dandamayev, 1992: 165; Zadok, 1977: 125). Certainly Arrian refers to Indians on war elephants in the Achaemenid army at Gaugamela in 331 BC (*Anabasis*, 3.8.3), though these are unlikely to have had anything to do with the Indian colony at Nippur.

The material evidence for these contacts between India and Babylonia in the first millennium BC is available in the form of rice and ivory (Potts, 1997: 254-75). The earliest written confirmation of rice does not appear until the Neo-Assyrian Period when rice is mentioned in medical texts. Archaeologically, the earliest find of rice in the region comes from Period III (750-590 BC) at Hasanlu on Assyria's eastern flank. The actual cultivation of rice in Mesopotamia is not attested until much later, as Strabo says, "Rice also grows in Bactriana and Babylonia and Susis, as also in Lower Syria" (*Geography* XV.i.18).

One question directly relevant to the theme of this volume, which follows on from this may be stated as follows: did this situation change after the coming of Alexander? Certainly it is well known that, during the Hellenistic Period, a large body of Babylonian mathematical astronomy was transmitted to India. Pingree has shown that the planetary theory found in Yavanaraja Sphujidhvaja's *Yavanajataka*, written in AD 269/70 (Pingree, 1959b: 282), but based on a 'prose translation from Greek made by Yavanesvara ['lord of the Greeks'] in AD 149' (Pingree, 1959a: 268), the original of which was probably composed in Alexandria in the early second century (Pingree 1973: 2), contains a 'system and ... parameters ... precisely identical with those found on cuneiform tablets of the Seleucid period' (Pingree, 1963: 235). Indeed, this had already been recognised by Otto Neugebauer when he wrote *The Exact Sciences in Antiquity* (1952, 2nd ed., 1957). As Pingree concluded, 'It is clear, then, that Babylonian linear astronomy was transmitted to India by the Greeks' (Pingree, 1963: 235). As Pingree wrote several years earlier:

> the methods in use among those Greek astrologers who transmitted their learning to India in the second century after Christ were still closely related to those developed in Mesopotamia in the Seleucid period. That they did not introduce into India the geometrical system, which is much better suited to the needs of genethialogy, attests to the conservative, and sometimes religious, respect with which astrologers are accustomed to regard their "scientific" methods (Pingree, 1959b: 284).

The first 56 verses of the 18th book of Varahamihira's *Pancasiddhantika*, a mid-sixth century AD work (Pingree, 1973: 2), also show us a Sanskrit version of Babylonian linear planetary theory, specifically in 'the equivalence of nine anomalistic months to 248 days and that of 110 anomalistic months to 3031 days' (Pingree, 1963: 236). Moreover, the 2nd book of the *Pancasiddhantika* summarises the solar and lunar theories of the *Vasisthasamasiddhanta*, a work of the second or third century AD (Pingree, 1973: 2), in which the Babylonian linear zig-zag system is used to compute the longitude of the moon, further elements introduced into India via Greek sources but entirely Babylonian in origin (Pingree, 1963: 237). There are still more cases of the Greek transmission of Babylonian astronomy and mathematics to India in the Gupta period, but these take us into a later period than I wish to focus on here (Pingree, 1963: 238ff).

It is clear from our review of the evidence of interaction and contact during the Achaemenid Period that the pre-conditions were already present in India prior to the Hellenistic Period. Indeed, the active encounter of Babylonian astronomy and astrology during the Achaemenid and, to a lesser extent, the Neo-Assyrian Period, with traditions from India continued even after Alexander's conquest. But did, in fact, the conquest itself or the establishment of the Seleucid Empire in Babylonia actually have an affect on that interaction? Was there a structural difference in the conditions of contact during the Seleucid era?

I think the answer to this question is emphatically no. I do not think that the Seleucid government in Babylonia intentionally effected the transfer of knowledge to India any more than I think that the Achaemenid government had several centuries earlier. But the general situation was probably not dissimilar. We know from the astronomical diaries and other sources that continuity between the late Achaemenid and Seleucid periods, certainly in the realm of cultic practice, scribal tradition and traditional learning, was very strong (Boiy, 2004, Berktold, 2005). In that sense, Alexander, titled *shar kishshati* or lugal shú – king of the world – titles given by the Babylonian scribes to his predecessor on the Babylonian throne, Darius III (Boiy, 2004: 107), was in some respects just another foreign ruler, no different from the Achaemenids, who permitted the Babylonian priesthood to carry on doing what they had been doing for millennia. To the extent that the Seleucids, particularly after Antiochus III (Huth and Potts, 2003), controlled much of the Persian Gulf, I would be inclined to view the exchange of learning in the Seleucid Period after Alexander's death as basically similar to that of an earlier age. The *pax Persica* was no more, but in its place was a system not entirely dissimilar and, by this point, a tradition of contact that such a change in political fortune – from Achaemenid to Seleucid control – seems to have done little to interrupt.

Finally, Helmut Humbach and Rüdiger Schmitt have both emphasised that the edicts of Asoka contain such Platonic and Aristotelian terms as *akrasia*, 'without self control' and its antonym *egkratia*, 'control of desires or self-control', used just as they had been in Plato's *Gorgias* (491 d 11), *Politeia* (430 e 6f), and in the *Nicomachean Ethics* (e.g., 1145 b 10f, 12f, 14f, 16f) (Schmitt, 1990: 47). Aside from the fact that such concepts resonate with Buddhist philosophy, I believe one could suggest that the beginnings of the transmission of complex mathematical, astronomical and astrological lore date to the Achaemenid era shared complex mathematical, astronomical and astrological lore between Babylonia and India. Furthermore, given the wide permeation of Babylonian astronomical lore, I think we should be redirecting much of our attention towards Mesopotamia in attempting to understand the development of science, astronomy and astrology both before and after the period of Alexander's conquest.

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