

**A SHORT GRAMMAR
OF THE HARAPPĀ LANGUAGE**
The Rakṣāsī ideopictographic writing

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FOREWORD

The Importance of a Harappā Grammar Book Publication

The knowledge of the ancient cultures has as an unsurpassable tool the knowledge of their respect languages. This is what occurs in the so-called Classical Studies in which the Latin and the Greek play a fundamental role in the constitution of the knowledge.

The language is the mark of the knowledge and of the domain of emerging thoughts. The decipherment of an ancient language which is striking within a certain cultural context defines the birth of a certain field of knowledge. This occurred with the decipherment of the great pre-classical civilizations ancient languages (H.C. Rawlinson Cuneiform writing 1846; J. F. Champollion *Hieroglyphic* writing 1822; B. Hrozný Hittite writing 1915)

In what concerns the case of the Harappā writing and language, the impossibility of reading the pre-classical texts from the Indus Valley has made it very difficult to understand the relationships between West and East, especially with the Assirian-Caldaic, Egyptian and Indo-European cultures.

Probably more ancient than the Hittite writing and as ancient as the Egyptian Hieroglyph, the Indus River Valley writing (c. 2.800-1500 B.C.) presents the most versed testimony of the Indo-European thought and culture expressed through “stamps” (containing astronomic and astrologic information) that later on appeared in the Vedic hymns in written form.

Unlike what happened with the previous researchers, the decipherment of the Harappā/Mohenjo-Dāro ideographic writing was not offered a bilingual or trilingual stone. The decipherment resulted from a

long and thorough process of 21 years of research, resorting to Linguistics, History, Archaeology, and Anthropology.

Since the beginning of the 20th century, several researchers tried to break this code, but they did not attain the intended results. The last great orientalist that also dedicated twenty years of his life without having attained the ultimate goal was Professor Asko Parpola from the University of Helsinki who in the end abandoned his research. After him, N.S. Rajaram and Natwar Jha have also tried to read the inscriptions based on models that ended up by not producing a grammar book or a dictionary.

Our researcher, José Carlos Calazans, after a long study period, shows his research results with the publication of a *Short Grammar of the Harappā Language*.

This publication follows a communication presented at the 19th *International Conference on South Asian Archaeology* (Ravenna) in 2007, and after being informed about the latest research led by Dr. Rajesh P. N. Rao, Associate Professor from the University of Washington (Seattle) of Computational Science and Engineering. In December 2008, Dr. Rao announced in the joint article “Entropic Evidence for Linguistic Structure in the Indus Script”, that this writing — though until the date of the mentioned article had not been deciphered — after undergoing the computational analysis presented characteristics that favour the linguistic hypothesis of belonging to a group of natural languages in the region.

José Carlos Calazans, in a humble but solid way, appears before this scientific forum to present his word. We do not intend to say, as science defines itself, that this is one more stone to build knowledge. A stone that is available to everyone for criticism and to all the other scholars who carry on with their studies by refuting and overcoming it.

For the moment, we have an interesting work which took more than two decades of research and that Universidade Lusófona de Humanidades e Tecnologias, through its original area of Religions History and Science

and its Edições Universitárias Lusófonas, has the pleasure to make available to all those who may be interested.

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INTRODUCTION

The Indus Civilization (Harappa / Mohenjo-Daro) is undoubtedly one of the oldest cultures in the world, and its importance is increased by the fact that its influence surpassed the Egyptian Dynasty or even Sumeria in duration and territory. With the same characteristics of any developed civilization (architecture, urban planning, sewage system, writing, and so on) its fame reached distant kingdoms through land and sea trade. This influence also pertains to the ideographic writing via seals (or stamps), commonly used in a vast area between present Pakistan and India, but trade took these artifacts as far as Sumeria, Tell Asmar, Susa, Ur, Dilmun, Magan, Failaka, Pirak, etc.

From the beginning archaeologists understood the uniqueness of this writing to India's history and that there was no memory of it in the Indian religious tradition or in the epic texts. The excavations performed in Dilmun (1950), Pirak (1968-74), Mehrgarh, Sibri and Nausharo (1974-87) revealed a period that goes beyond the ancestry of Sumeria and Egypt, dating the oldest locations of the Indus Civilization back to the 7th Millennium B.C.

The *Corpus of Indus Seals and Inscriptions* (Asko Parpola 1987-1991) contained the greatest contribution of the Indus written culture as far as the ideopictographic objects are concerned. For the first time, through this in-depth study, researchers and Orientalists had access to the largest collection of seals and inscriptions of a culture about which much is known except the most important thing: its thinking, its language and its writing.

For those studying pre-classic India and mainly those who have tried to decipher the seals, the *Corpus* represents the best research tool. But we must pay a fair tribute not only to A. Parpola and his team (P.

Aalto, S. Parpola, Kimmo e Seppo Koskeniemi) but also to other researchers (H. Heras, B. B. Lal, Krishna Rao, I. Mahadevan, Natwar Jha, G. L. Possehl et al.), whose commitment and contribution to the deciphering of this language, although not having reached its intended aim, have managed above all to launch the first methodological and systematic foundations of a unique accuracy and a remarkable scientific credibility.

The particular focus of our research falls inevitably on two major points: the origin of the Kassits and Mitanians and the location of Indian *Araṭṭa*. It is certain that the Kassits and the Mitanians have been considered as foreign invaders in the North of Mesopotamia, and that both brought an Indo-Iranian linguistic tradition since the 18th and 16th centuries BC: (*sapta* > *satta*; *Indra* > *Indara*; *Surya* > *Shuriash*; *Marut* > *Maruttash*; *Indra-Baga* > *Inda-Bugash*, and so forth). It is likely that it was the same Indo-European migration, being the Kassits from the Indian *Araṭṭa* (Eastern Punjab) and having migrated into Sindh, Afghanistan and the marshy region in the South of Iraq. This migration would explain the existence of different *Araṭṭas* mentioned in different regions. As for the term itself it is noticeably a Prakrit of *Araṣṭra* (“without kingdom”), and its meaning joins the one of *mlecchadeśa* (“land of the confederate”) or of the “non-Aryan”, understood as non-Brahmin.

Our research began in 1982 starting from the assumptions set by A. Parpola. Later in 1984 we considered abandoning that principle, which stated the Tamil language (proto-Tamil) was the key for the deciphering; these assumptions had already been present in the argumentation of H. Heras (1953), again without any satisfactory results despite the contributions of Y.V. Knorozov (1965).

In 1985, we notice certain similarities between some of the compound words that follow the same morphologic procedure in Sanskrit and other Prakrits such as Pāli, thus we opted to consider the possibility that we dealing with an Indo-Iranian branch language, close to the Vedic

or to the Avesta.

These similarities with juxtaposed ideopictograms took the same literal meaning as other equivalent compound words in Vedic, Sanskrit and Pāṇi. Sometimes, however, they showed lexical deviations to an extent that it was not possible to identify the corresponding sources in known etymologies — other researchers took up the same procedure of agglutinating consonants, even words, which they presumably discovered in each ideopictogram, to decipher compound words just like they did in Sanskrit. But we questioned whether the parallelism was a simple coincidence or an accident between the intrinsic morphology of pictographic writing and the agglutinated composition of compound words that appear both in indo-European and Tamil forms.

One of the different methods we have tried was the association of consonants or words by forming compound groups, as suggested by the pictographic morphology. However, if the deciphering was successful with half a dozen seals, that same method seemed to fail when applied to them all. This paradox was felt by many researchers. Some insisted in their “half a dozen” method, yet not checking whether it could be applied to the whole collection, whereas others just surrendered to the seemingly impossibility of deciphering and humbly kept quiet. Just like them we went forwards and backwards but it was never our intention to announce any “triumph” before achieving it or take the risk of repeating what others had said before. How many had been close to finding a solution!

Our problem was knowing which level of language the seals were written in, and never forcedly “fitting” the language expressed by the seals of the Indus Culture in Vedic or classic Sanskrit – which, in this last case would be a real anachronism; even so, some have tried the “forceful method”. We were inclined to seek a fit in the “traditional sanskritists” group, however, by applying the composition and grammar rules of Pāṇini as a technical artifice for our starting point, there was a clear deviation from Sanskrit and Vedic given the lexical peculiarity, of the topics dealt

with in the texts and iconography itself.

We could even state that the distance that separates Vedic from the written dialect of the seals is almost the same that separates Sanskrit from Pāli. This, in itself, is an indicator of social-religious differences of remarkable importance. The Jainas equally claimed the *ardhamāgadhī* of the *Āgamas* instead of Sanskrit as being the genuine language of the Arians and gods, even though they have mixed Sanskrit with the Prakrits and used the Gujarati, the Marathi, the Hindi, the Kanāda and the Tamil. It is in this sense and context that the concept of *mleccha* draws its evidence – of the particularity of linguistic and cultural synthesis observed by the Brahmins who considered themselves purists and their dialect as unique and superior.

The more archaeology revealed the material culture of the Indus Civilization, the larger became the problem in the sense that a parallel with the contents of the *Ṛgveda* could not be found except for ritualistic situations of the *Atharvaveda*. In the face of the cultural paradox presented, we inclined more and more to the hypothesis of its language being a different linguistic extract belonging to an Indo-Iranian branch, although different than the Vedic and the cultural fringe of Brahmanic influence. The iconography of the seals led us to this proposition but we were far from understanding how the different dialects would be spread and which could have been the most influential in this period. If indeed we could verify that a certain dialect had been the producer of these seals we would then have an underlying problem: the *Ṛgveda* would belong to another cultural tradition within the same linguistic family. This could be possible because *Ṛgveda* makes references to different tribes and ethnic groups which are not considered Aryan and are many times compared to demonic forces.

Oriental studies have taken *Ṛg* and other Vedas as a very important foundation for the comparative studies of Indo-European languages. Bearing in mind the assumption established by Brahmanism that the

oldest heritage was that of the Aryans — and taking them as all the homogeneous people who occupied the valleys of the Indus and Saraswatī, dominating politically and religiously a vast area — linguists and historians of the 19th century assumed this as a definite fact for the only true evidence of the beginning of Hinduism. All the other fringes of the Vedic society were outside this listing and with no right to linguistic recording.

This thesis went on throughout the 20th century, and the more archaeology brought the material culture and seals into daylight, the clearer it became that the *Ṛgveda* hardly fitted in this scenario, especially after the seal collection grew larger. Because the same Vedas don't mention a previous alphabet to the *Brahmī*, Hinduism researchers divided themselves between those who declared the (almost) pre-historic antecedence of the *Ṛgveda* and the ones who henceforth accepted the simultaneousness of cultures in the same geographical space. How could this problem be solved? The answer seems too simple to be credible: after the collapse of the Indus Civilization, Brahmins took control of the society and assumed as founding texts all the religious and ritualistic tradition which, in its way, had diverged for a long time from most of the population of the previous period.

Araṭṭa became a natural candidate to the rising cultures of the Sumerian borders, including the Indo-European (Indo-Iranian). Some Sumerian texts refer to *Araṭṭa* as being a land placed somewhere in the mountains outside Sumeria¹. Samuel Noah Kramer came to identify it as a region near the Zagros Mountains, but Sumerian geography is not that clear to the point of giving us a definite answer. However, since Kramer formulated his hypothesis very little has been said and clarified about the true location of the *Araṭṭa*, and the question was practically “solved” by

1- Inana and Ebiḫ (ETCSL: 1.3.2), Gilgamesh and Ḫuwawa (ETCSL: 1.8.1.5.1), Lugalbanda in the mountain cave (ETCSL: 1.8.2.1), Lugalband and the Azud bird (ETCSL: 1.8.2.2), Enmerkar and En-suḫgir-ana (ETCSL: 1.8.2.4). See texts translated by the Oriental Institute of the Oxford University.

itself.

Nevertheless, most historians disagree as to the true location, and in general they concede that it is placed between Northwest Iran and Azerbaijan, with its borders spread from Caucasus to Zagros, and from the Caspian to the Black Seas. At times it is identified as the archaeological station of Godin, east of Kangawar, to the south of the Iranian Kurdistan, or as the Trypilliana-Cucuteni civilization. But the question is far from solved, since the Sumerian texts describe this land as being rich and, competing with the Sumerian territory in natural richness and in the control of overland and sea trade.

Among the claimers of *Aratta* as their land of origin and its irrefutable territory there is the Neolithic Ukraine named “Trypilliana-Cucuteni civilization” (5400-2750 BC); it is close to Kiev and was discovered and excavated for the first time by Vikentiy Khvoika between 1893 and 1899. The concept of ethnic origin of the Trypilliana civilization has been discussed and consensus has not yet been reached. Different researchers have divided among the three general classifications: proto-Slavic (Vikentiy Khvoika), Traco-Frigians (R. Schtern), Celts (K. Schugardt) and Tocharians (O. Mengin et al.). Another candidate claims *Aratta* is also the region of Kurdistan.

More recently, the country of *Aratta*, described as “the cedar-filled mountain” (ETCSL: 1.8.1.5.1) or “the mountain chain of Ebiḥ” (ETCSL: 1.3.2), has been claimed as the birth of emerging cultures that intends to justify some late 20th-early 21st century nationalisms, especially after Perestroika and the fall of Saddam Hussein in Iraq. *Aratta* thus seems to come back to life from the cuneiform texts, as in the old dispute between Enmerkar (“lord of Kulaba”) and Ensuḫgirana (“lord of *Aratta*”). Certainly the controversy of *Aratta*’s true location will continue and we take now the inquisitive reader to the important details of the introduced work, which will be followed in due time by the publishing of our complete research covering 20 years of investigation.

I. LANGUAGE AND DIALECT

1.1. Dialect (*prākṛta* or *bhāṣā*) and jargon (*paiśāca*).

A translation is possible only when two languages share equivalent words for the same concept; otherwise, new notions become necessary. In the case of the Harappā culture seals, all researchers assumed to be researching the old version of a well known old language, it being Vedic, Sanskrit or Tamil. This way, a possible translation could use equivalent concepts (of the Vedic or the Tamil) pictographically represented. The problem was to find a correct pictographic representation for the concepts which, supposedly, were still in use in the classic period.

The starting point of several researchers was always using a well structured standard language such as Sanskrit or Tamil, and from one of them trying to fit the known etymologies insofar as the pictographic morphology suggested, and guessing meanings taken from the short syntax that pictographic texts present. But perhaps it was never considered that the “language” ideopictographically expressed could be a dialect (*prākṛta*), a distant variation from the Vedic, the Sanskrit (*bhāṣā*), the Pāli, or even a jargon (*paiśāca*). As A. Bharati states:

In each religious and philosophical tradition a specific idiom is developed and constantly used by its adherents. This happened to the tantric tradition, too, and the pressure from orthodox Hinduism and Buddhism might have enhanced and fossilized the use of sandhābhāṣā.

In assigning a purpose to sandhābhāṣā, the last word so far has been said by Eliade. I quote a few salient passages from his chapter on sandhābhāṣā, ‘la langage intentionnel’.

...the tantric texts are frequently couched in intentional language — a secret, obscure language with a double meaning, wherein a particular state of consciousness is expressed in erotical terminology, the mythological and cosmological vocabulary of which is charged both with haṭha-yogic and with sexual significance. (Cf. Bharati 1983: p. 172).

As time went by, each social class created a specific idiom and sole indicator of a certain group of activities — doctors, lawyers, engineers, sailors, astrologers and so on — which is historically recognized as

professional jargon. Another semantic deviation emerged from the normal setting of the standard language, equally derived from the need to keep a class identity in relation to different social and religious groups. In this sense we can quote several examples, such as European Middle Age *argot* and Indian *sandhābhāṣā*.

However, our study on pictographic writing of the Harappā culture didn't reveal us any *sandhābhāṣā* linked to a social or religious class, although it could be in use at the time. Nevertheless, we can find references in the classical and Vedic texts that point to the existence of several jargons (*paiśāca*) and variations (*bhāṣā*), some probably never taken seriously because they were seen as mythical or imaginary. Thus, we can assume that the “dogs” (*śva*), the “owls” (*ulūka*), the “cuckoos” (*koka*), the “eagles” (*suparṇa*) and the “vultures” (*grdhra*), quoted as demons in the *R̥gveda* (7.104.20-23)², and the *Kīkata* people (R̥ V. 3.53.14) — together with the priests *Kilāta* and *Ākuli* (ŚBr. 1.1.4.14-17) and the *Śámman* (ŚBr. 6.3.1.24) — had their own *paiśāca*, or probably their *bhāṣā*. The Vedic *ārṣam* from the hymns was opposed to the lower dialects of the *bhāṣās*, such as the ancient Greek of the *Iliad* and the *Odyssey* to the Koiné, and later the scholarly Latin to the barbaric Latin.

The Vedic demons assume quite often the figures of such an anthropomorphism as the mythology consecrated in the Indian art canon; also many “wizards” equally mentioned in the Vedas take the shape of the same animals which help them in their magical practice — a mythical and anthropologically well known figure of shamanism. From the common nature of ones and the others the same etymology and the same root was formed — *rakṣasvins/rakṣās* (wizards) and *rakṣas* (demons) — also intentionally charged with a meaning and to which a specific dialect was assigned:

– *The dogs step back under the weight of mischief, (them which) joyfully would like to upset Indra, who cannot be subjugated. Śakra (Indra) sharpen your*

2- Cf. RV 1.36.20; 1.94.9; 1.127.3; 1.129.9; 2.23.14; 5.2.10; 7.38.7; 8.50.20; 10.76.4; 10.87.19.

weapon against the evil ones; strike your lightning over the wizards (*rakṣás*).
 – Indra has always been the destructor of demons who spoil the offerings of the Gods’ supplicants; so be it, Śakra, like an ax which cuts wood, strike and smash them as if they were pottery pots.
 – Destroy the owl (male) and the owl (female), the dog and the cuckoo. Destroy the eagle and the vulture as a stone (does). Oh Indra, smash the demon (*rakṣa*).
 – Let not the evil of the wizards (*rakṣás*) strike us; let Mithunā (the heavenly couple) put aside the two Kimidins (male and female demons). Oh Earth (*prthivī*), deliver us from the misfortune and problems of this life; from the sadness which comes from the sky, protects us (oh) atmosphere (*divyā*). RV 7.104.20-23

– Which cattle is there among the *Kīkaṭas*? They don’t milk or warm the cauldron. Bring us the richness of the *Pramaganda*; oh *Maghavan*, grant us the one of lower condition (servant). RV 3.53.14

This semantic opposition between Brahmins, wizards (*rakṣás*) and *kīkaṭas*, could likewise explain the antinomy between the Vedic tribes of the *Anus*, the *Yadus* and *Druhyus* on one side, and the *Pūrus* on the other. In this sense, we should also consider the antinomy between the good Persian god (*Ahura*) and the evil Vedic god (*Ásura*), a difference etymologically explained by Yāska:

*Demons (a-su-rah) are (so called because) they delight in evil places, or they are expelled from places (*as, to throw). Or else the word asuḥ is a synonym of breath; inhaled, it rests in the body, i. e. endowed with it (asu-rāḥ). It is known: he created gods (surān) from good (su), that is the characteristic of gods; he created demons (asurān) from good (a-su) that is the characteristic of demons. (Cf. Sarup 1998. Nirukt. 3.7: p. 42).*

Can we somehow wonder how the Persians have etymologically explained the same difference? Should we then accept as true the descriptions that the *R̥gveda* makes about the *rakṣasvins/rakṣás* (wizards) and *rakṣas* (demons), or take them as mere figures of speech?

– Oh you to whom the offerings are offered *ghṛta*, glittering (god), burn against the evil, oh Agni, against the wizards (*rakṣasvins*). RV 1.12.1.122-23,5
 – Save us, oh Agni, from the wizard (*rakṣá*), save us from evil, from the cunning. Save us from him who is evil to us or tries to kill us, oh younger god of luminous shine! RV 1.36.1.3.8-11,15
 – Oh Agni, burn all wizards completely (*rakṣás*); be a protector of the sacrifice against curses. (...) RV 1.76.1.5.24,3
 – (...) Ruling at night and at the beginning of Dawn through your own power, oh Agni, oh god of sharp teeth, burn against the wizards (*rakṣás*). RV 1.79.1.5.27-

28,6

– *Oh Agni of the thousand eyes who live among all tribes, put aside the demons (rakṣas).* RV 1.79.1.5.27-28,12

– (... *Āgni*) *Kill the demon (rakṣas) even though they have multiplied very much.* RV 4.3.3.4.20-22,14

– (... *Āgni*) *throw the wizards (rakṣas) your hottest (arrows).* RV 4.4.3.4.23-25,1

– (...) *He (Āgni) sharpens his two horns to trespass the demons. (rakṣas).* RV 5.2.3.8.14-15,9

If the Brahmin priests were not all considered equal, such as *Kilāta* and *Ākuli*, it was not so by the Brahmin orthodoxy — they were the *two priests of the Asura* — then their linguistic varieties must have reflected that same religious difference. In fact, the language of the *rakṣas* was assigned to these bizarre Brahmin priests. This kind of *bhāṣā* was well known to the Brahmins, in such a way that it went into the Sanskrit lexis with the names of *anarthakabhāṣā* (अनर्थकभाषा “dialect without meaning”) or *miśṛtabhāṣā* (मिश्रतभाषा “adulterated dialect”). It is however very curious that the *Nirukta* makes the term *rakṣas* derive from the root **rakṣ* (“protect”, “keep”), thus explaining it is so because life must be protected from demons (cf. Sarup 1998. 4.17: pp. 63-44), whereas Rudolph Roth makes the same term derive from the root **ṛś* (“kill”). As the saying goes, “what can cure can kill”.

This way, there are references to “mythical” *bhāṣās* which would necessarily have lexical peculiarities close to the jargon (*paśāca*), and which could have expressed socio-religious groups considered as outcast as far as language and religious options were concerned — in this historic and anthropologic context we consider the possibility of being in face of a proto-caste situation. Of these “mythical” *bhāṣās* emerge the *piśācabhāṣā* (पिशाचभाषा) and the *rākṣasibhāṣā* (राक्षसिभाषा), two terms clearly associated to the class of Vedic demons — according to the *Ṛgveda* itself, *asura* and *rākṣasas* belong to the group of the *piśāca* demons.

On the other hand, not less mythical and perhaps not less exact, the *Rāmāyaṇa* states through Rāma’s mouth that Ājāneya spoke one of the nine erudite existing languages (*nava-vyākaraṇa-panḍitā* नवव्याकरणपण्डित). We have thus two linguistic levels which must have been opposed

ever since a long time ago, and which must have meant profound differences in the social and religious behavior, the same way a Brahmin has distanced himself and opposed to a shaman, or *rakṣās*.

1.2. Bhāṣā or Paiśāca?

In these linguistic subtleties and differences Yāska mentions a dialect difference in spoken Sanskrit as if it were some kind of provincialism. He goes to the point of dividing the language speakers between those who employ primary forms and the ones who use secondary forms. According to this distinction, Yāska introduces the *Kambojas*³ and the “Orientals” as belonging to the former, and the “Northerners” as the later group of the secondary forms derived from Sanskrit.

Yāska thus differentiates the Āryas from the “Orientals” and likewise from the “Northerners”. In fact, he says the *Kambojas*, the Orientals and the Northerners were not Āryas — at least they were not considered as such by Yāska — despite having been under his “influence” to the point of adopting his language⁴. In his *Mahābhāṣya* Patañjali makes the same distinction with almost the same words as Yāska (cf. Sarup, 1998: pp. 223-224), thus showing us that among the classical grammarians there was the secular tradition of distinguishing between the erudite and the popular and jargon. But neither Yāska nor Patañjalis

3- Yāska comes to the pretension of stating that the *Kambojas*, who take their name from a particular type of blanket (*kambala*) they like so much, are the only ones to have the verb *śavati* (go).

4- About the question of the Arian paternity or not of the Vedic ethnic groups, and of who is a true Brahman, the *Dhammapa* explains that neither one are race distinctions but a sign of education and a synonym of “noble in spirit”: “It is good to be with the noble (*Ariya*). Living with them always brings happiness. Not finding ignorant is to be happy all the time” (XV-206); “Make yourself an island, try without delay and be wise. Purify yourself from the impurities and, spotless, you will enter the house of the *Ariyas*” (XVIII-236); “He who hurts the living beings is not an *Ariya*. Through the non-violence towards all living beings one becomes an *Ariya*” (XIX-270); “One is not a Brahman by birth (cast) or by having braided hair. But he who lives in truth and righteousness is pure and a Brahman.” (XXVI-393). (Cf. Calazans: 2006).

mention the languages from the South of India (such as Tamil) as existing or being spoken among the Northerners or the Orientals; this leads us to conclude that the area of great influence of the Vedic, including the popular and professional jargons, was in fact the Northwest of India.

Of course we must not mistake jargon (*paśāca*) for variant (*bhāṣā*) — a linguistic variety that can support several jargons and not the opposite. And because Sanskrit is always used as a skilful tool in the Pracrits translations (for being both an artificial and synthetic language) we opted for the same convention, using the etymologies and skilful instruments supplied by the grammar protocol, but applying the Pāli language as supposed by us to be much older and a *lingua franca* among many variants. The result of using this method has revealed us the existence of a possible variant-jargon belonging to the Indo-European; it was certainly a jargon in use by the astronomers / astrologers class, and being *piśāca* might, perhaps, find still today a lineage among the Dardic languages (equally named *pisacha*). Among the Dardic or *pisacha* languages we can list the following: Kohistani, Dameli, Domāki, Gawari, Gojri, Kalasha, Kalkoti, Kashmiri, Chitrali, Pahari, Shina and Torwali.

Having been a professional jargon shouldn't classify it as a “demonic dialect” (*piśācabhāṣā*). The morphology and syntax of the classic Indian astrological speech, and its corresponding etymologies are not out of the orthodox Sanskrit canon, but the structure of the texts of the seals does not diverge also from the body of knowledge that the *jyotiṣa* recorded. Calling “demonic dialect” to the language expressed in the seals is of our own initiative, and it can simply be based on the fact that memory (*smṛti*) doesn't mention a “writing” before the appearance of the *brāhmī* alphabet. Vedic and Brahmin orthodox traditions have always made a point of distancing themselves from the non *āryan* groups, relegating for a miserable existence the “non-āryans” (who were often compared to “demons”), assigning them a “strange” language in comparison to theirs and, therefore, “demonic” (or “infamous”). The seals

of the Harappā culture, their pictographic writing and the jargon-variant have been out of the Brahmin social influence, and although the seals may have been used by all social extracts (as amulets or personal marks for other purposes) there is great limitation in the social and linguistic group of speakers who can be included in the jargon simply because they were made by astrologers (*gaṇaka*) and wizards (*rakṣās*). Moreover, and finally, the amulets (*kāvaca* or *rakṣā*) are objects made to put the demons and all sorts of evil influences away; for that reason they take the name of the same formative root **rakṣ* (“protect”, “keep”). Therefore, wizard (*rakṣās*), amulet (*rakṣā*), demon (*rākṣasa*) and “demonic dialect” (*rākṣasibhāṣā*) share the same nature, be it “protect” (according to Yāska) or “kill” (according to R. Roth). Since the *Ṛgveda* depreciatingly employs those words whenever it mentions them, any jargon (*paiśāca*) or variant (*bhāṣā*) associated to them must have had a magical, social and linguistic component of considerable importance, to the point of being referred to both in the *Śruti* and in the *Smṛti*. The writing and the jargon inscribed in the seals can be taken as *rakṣāsī* (the name we generically give them in our grammar and dictionary) because this pictographic writing only appears engraved in seals or pottery and the amulets are named *rakṣā*.

We also noticed that some etymons in this jargon are exactly the same used in the Pāṇini’s *Śabdānuśāsana* grammar. The use of terminology to classify the cases in Sanskrit (*prathamā*, *dvitīyā*, *tritīyā*, *cathurtī*, *pañcamī*, *ṣaṣthī* and *āmantrita*) is the same to indicate the lunar days in astronomy and astrology, as it appears later in the classic compendiums. Other terms follow the same procedure, showing the way a jargon is formed from a standard language, and how a Professional group (the astronomers and astrologers) exercised its activity among the priests mentioned in the *Ṛgveda*.

Some lexical forms stopped being used in this Professional jargon, for the sole reason that a linguistic and orthographic reform (from ideopictographic to phonetic) almost always leaves out words obliterated

by phonetics; this is a phenomenon that involves the whole language structure. Expressions and terms which are not used anymore have become what we later called *lost etymologies*.

1.3. Śruti and Smṛti (divine inspiration and memory).

A problem has arisen and it seems to be inevitable. Why is there a total absence of memory over an ancient *rakṣāsī* writing system? The answer can lie in the social and religious difference between a kind of ethnic group which was responsible for the Vedic tradition and was in the origin of the *brāhmī* alphabet, and another one of shamanic tradition which could, eventually, have developed a system of ideographic writing that disappeared with the collapse of the Harappā culture. From the classical period only the works grouped in five collections are recognized as *Smṛti* (memory): *Smṛti*, *Itihāsa* (*Ramāyana* and *Mahābhārata*), *Purāṇa*, *Āgama* and *Dāraṇa*; but this “memory” is related to a tradition and an orally transmitted memory which has values such as Ethics, Philosophy, History and Mythology. *Śruti*, on the contrary, is a set of texts derived from a divinely inspired clairaudience, as the tradition states, and which form the core of the Hindu religion: *Rgveda*, *Yajurveda*, *Sāmaveda* and *Atharvaveda*. It is precisely in the *Śruti* (*Rgveda*) where we find more information about “the others”, the Brahmin priests who were not considered as “Āryans”; in the *Yajurveda* they are mentioned in a very shy way; on the other hand, it is mainly the *Atharvaveda* which is dedicated to enchantments and invocations to cure diseases, to protect commoners and kings, to provide water and cattle in abundance and to destroy demons and wizards. The hymns in *Atharvaveda* fit in the area of invocative magic in a “software” version, while the practical magic course books *Saundaryalaharī* and *Yantrachintamani*, of tantric tradition, describe magic in its hardware version in all detail; but, be it in the *Atharvaveda* or in the latter two books, the resource to amulets has been a current practice, as it is still custom today all around India.

If there was an evolution process among the several graphic reforms ever since the ideopictographic to the *devanāgarī* phonetics (a process we do not know of), any time there was such a reform several expressions (compound words, for instance) must have fallen out of use. This situation was manifestly dramatic for the older generation of scribes who made the transition between two writing periods. However this supposition seems to be only applicable to the reforms that may have occurred during the evolution process of *rakṣāsī* writing.

It is known that the *devanāgarī* alphabet appeared after several graphic reforms which were started from the *brāhmī* until the classical 48 character alphabet. The 52 characters used in the sounds of the Vedic language were a late way of perpetuating those sounds with the alphabet *nāgarī* phonemes.

Twelve centuries before Christ, Tiglath Pilaser I seized Aramea and let groups of people close to the Hindu, opening communication between Assyria and the Syrian territory, in the occident, and the Punjab, in east. The Aramaic became later (745 BC) the language of the trade and of the politics; and it is from an well-known Aramaic alphabet in Mesopotamia that, as it seems more probable, were derived the two alphabets, i.e., the Indian writing characters of the registrations of Aśoka. The relations between India and the Scithian territories are, certainly, very old...(cf. Wanzke: 1984, pp.71-79).

This was the hypotheses established by the linguists and Sanskrit specialists of the 19th century to explain the creation of the *brāhmī* and *nāgarī* alphabets. But they ignored the existence of the ideopictographic writing of the Indus Valley, which doesn't seem to have directly or indirectly derived from the *brāhmī* alphabet, unlike what Natwar Jha states (cf. Natwar Jha and N. S. Rajaram: 2000). Assuming our previously idea of the *rakṣāsī* writing having appeared in the midst of a social group different than the Brahmin orthodoxy, the latter would never use an alphabet identified with demons and shamans. This seems to us a probable reason to explain why the Aramaic alphabet was chosen and not one which had already been used exactly in the same Indus region 500 years ago.

But if the “lost link” between the *rakṣāsī* and the *brāhmī* cannot be found, the linguistic affiliation appears to be unexpectedly and disconcertingly more evident. Starting from the translation of the seals we were able to establish a phonetic and phonologic bridge between the Vedic Sanskrit and Pāli rules and this jargon. This way we can say that the *rakṣāsī* was in use at the same time the Vedic was; they were separated, though, just like the linguistic level of the *Atharvaveda* distanced itself from the Vedic (*Ṛg*). The coming through of Sanskrit later brought a graphic reform that included the most part of the different jargons, adjusting many *bhāṣās* to the new synthetic language.

1.4. Archaic (*ārṣam*) versus demoniac (*rakṣāsī*).

Sandhābhāṣās and *bhāṣās* had their respective names, but what was the Vedas language which the western linguists named *Vedic Sanskrit* called? Pāṇini states the difference between the two languages used in his time: the *chandas* (the language of the hymns, also called *ārṣam*) and the *bhāṣā*, which would correspond to the spoken language including professional jargon. Other spoken variants (*bhāṣās*) overcame, therefore, in the same moment that the Vedic (*chandas*) lost its use and the statute of religious language. *Ārṣam* was thus the current language of the religious elite in which the *Ṛgveda* was written.

Ārṣam appears as an artificial language because the way it comes in the texts shows it as archaic in the sense of not being spoken anymore (cf. Abreu, 1883: p. 205). If the priest caste spoke *ārṣam* and others castes spoke middle Indian (including variants and jargons) then we must probably presume that the language used in the seals is a *bhāṣā*, such as the *anarthakabhāṣā* and *rākṣasibhāṣā* mentioned before. We can equally consider that there are links between these *bhāṣās* and Tocharian C, as suggested by D. Q. Adams.

Ārṣam and *zend* have still great similarities as far as the palatalization of the velars and the cacuminalization of the sibilants

preceded by *i* and *u* are concerned, as Grammont states in his *Inde Classique* (cf. Villar, 1972: p. 54). But *ārṣam* presents some characteristics of its own, some new aspects in relation to Indo-European languages, although still keeping a certain original legacy.

Among its characteristics we distinguish: 7 flexional cases; 3 genders; 2 voices; weak and strong cases; tonic and vocal changes; proverb and proposition autonomy; choice of verbal morphemes (partially determined by the meaning of the root – *the aspect*); preponderance of form over meaning; preponderance of esoteric meaning over the literal one (which makes its vocabulary symbolic). Among the novelties: strictness and extension given to *saṇdhi*; the absolutive; the accusative in *p*; the use of perfect normative; the passive voice. The original legacy: nominal forms; the injunctive; nominal themes in *i* and *u* as *consonantal*.

Ārṣam, like the classic Sanskrit, follow a procedure whose structural characteristic indicates an agglutination — a far away expression of the morphological construction which is found in an ideographic writing and which can be observed in *rakṣāsī*.

Due to these similarities, we believe the common grammar rules of the Vedic-Sanskrit and Pāli can be applied to this kind of writing — keeping the necessary distance between an ideopictographic and a phonetic language, despite the apparent anachronism.

In the flow of the deciphering process (transliteration and translation) we still observed that there is no discrepancy in the application of this principle, both with the nominal compound declensions and the adjectives or numerals. The morphologic and syntactic ideopictographic structure shows such a similarity with the Vedic-Sanskrit and Pāli that we are forced to recognize a linguistic continuity which has kept almost intact through the two later stages of graphic reform.

The grammar rules attributed to Pāṇini (which were probably introduced by his predecessors and established in writing protocol *circa*

400 BC) must have formed a systematic body of norms which existed centuries before in oral tradition. Actually Pāṇini makes reference to sixty-four grammar specialists before him. Among some we mention Śākaṭāyana, Yāska, Gārgya, Kātyāyana, Patañjali, Bhartṛhari, Jayāditya and Kayāṭa.

The same way we watch the differences between the Vedic-Sanskrit and Pāli, it is also possible to find common rules in both the ideopictographic morphologic compound and in the Vedic morphology. The supposition in which both systems decisively contributed to give the language stable structures in its formative process onto fixation becomes evident.

The relationship between Vedic-Sanskrit and Pāli (including the jargons) is not based only in linguistic evolution, whose older extract can be found in the ancient *Rgveda* hymns.

This ideopictographic writing reveals in a way the same Vedic tradition (orthodox and non-orthodox) in all its mythical, cosmogonist and astrological side, but separates from it in the linguistic variant and iconographic choice — let the Vedic gods and the iconography of the seals be compared. The difference lied, therefore, in a specificity and social and religious intentionality which certainly caused clashes in many occasions; this can explain the known opposition between *Anus*, *Yadus* and *Druhyus* on one side, and *Pūrus* on the other, or of the *Kīkaṭa* people, *Kukura* and other ethnic groups of shamanic tradition which placed themselves on the opposite side of the Brahmin orthodoxy.

Like in Vedic and Sanskrit, each ideopictogram contains (in its formative structure) a root charged with religious and profane symbolism. The linguistic relation between *ārṣam* and the *bhāṣā*, between the Vedic and Sanskrit (or between the Vedic and the *pisachas* Prakrits, Pāli included) is valid because it is the same language in different evolutionary stages — from the pre-classical period to the classical moment with no interruptions. The *brāhmī* and *devanāgarī* alphabets represent the two last graphic reforms.

If we initially thought that the Vedic period had been characterized by oral tradition without any existing writing, the discovery of the Harappā culture seals and the solution here presented has to make us reformulate the equation and go back on the dating of the first written form to the pre-classic period.

Another not least surprising fact is the way the seals appear written, in the aphoristic style. This stylistic form, as well as the writing itself, necessarily meant a continuous and careful teaching in which a particular attention was paid to the homologue meanings of each pictogram, to the declensions and to the formation of simple and compound words. The written tradition expressed in the seals is probably the first source of astronomic and astrologic calculus, and we may take it as the origin of the later *śāstras* linked to the science of astronomy.

Since it is an ideopictographic writing with an abundant use of morph grams the stress may not fall on sound or pronunciation analysis, vowels or consonants. The pictogram worked as a whole, an idea and a religious, divine and human principle. For this reason it was regarded as a fixed and stable member which accepted other elements (affixes) by agglutination and therefore originated more complex ideas. The principle of agglutinant and syntactic formation went on in a continuous tradition until the establishment of Sanskrit.

To sum up, we can say that this ideopictographic writing agrees with a syntactic agglutinant formation through which a sentence develops through successive agglutinations in a syntagmaatic disposition. This formation obeys to a structure which is determinant of the rules of ideopictographic composition — one pictogram can be placed in a syntactic way in relation to other. These pictograms also appear in a Basic or simple form, or in an equivalent form to the nominal Vedic, Sanskrit and Pāli compounds, which are both subject to the competent declension.

II. transliteration.

We adopted three levels of diacritical register for the transliteration: 1 – signals indicating terms formed by *morph grammatical composition* or terms formed by *morphological composition*; 2 – *single slash* (*daṇḍá*) indicating a change of line and *double* for period endings; 3 – diacritical signaling for phonetic equivalence and overwriting indication in cases of questionable ending.

Ex.:

1.a – morph grammatical composition —

(...) *trí•ásta*.

1.b - morphological composition—

(...) *kúla-tara*.

2.a – change of line *single slash* —

(...) *cakráṃ śani-śukra guru-iśu|*

2.b – end of period *double slash* —

(...) *parva-cakra-ásta||*

3.a – conventional diacritical signalling —

ā, ā̇, ī, ī̇, ṛ, ṛ̇, ś, ṣ, ṁ.

3.b – overwriting indication —

bhava^{na}; viṣva•tá^s; māsa^{ka}.

This transliteration method uses the same principles generally observed in the Indo-European languages transliterations, namely the Vedic and Sanskrit. Thus the diacritical signs are maintained and the single (|) and double (||) slashes of the *Devanāgarī* are equally used. Two transliterations were also made for each ideopictographic fragment: the first one without *saṃdhi* (keeping the original phonetics of each pictogram), and the second one with *saṃdhi* of which the respective translation proceeds.

III. CONCEPTS AND RULES

1. IDEOPICTOGRAPHIC PRINCIPLE

1.1. Basic Ideopictogram (BI).

Each *basic ideopictogram* represents an ideographical root which is both a potential and permeable formative core. It can, by itself, form a term (noun or adjective) defined by context, but it also allows the agglutination of other elements called *morph grams*; these might complete the basic idea or contribute to a new word of multiple meaning, viz.: , , , .

1.2. Ideopictographic Compound (IC).

An *ideopictographic compound* is the result of the permeability of the *basic ideopictogram*. It may represent by itself a new core of multiple significant possibilities (homonyms and homographs) in the process of ideopictographic formation, but it never exceeds three ideopictograms in its symbiosis, in which comes close to the Vedic-Sanskrit and Pāli noun compounds.

The ideopictographic compounds are organized in a *morph grammatical* and *morphological* construction. The basic ideopictograms, when subject to the competent constitution, can form *morph grams* and in these cases they are *infixes* inside the main ideopictogram (cf. Macdonell. Cap. I, art° 8: 1987, p. 8).

The morphological formation is due to the syntactic natural process, and it is formed by two or more ideopictographic compounds placed in between them as *prefixes* or *suffixes*. They actually represent the most coherent keys in the sentence morphological development, and precede the compound formation as can be seen in Vedic-Sanskrit and Pāli.

1.3. Syntactic Agglutinating Formation (SAF).

The *Syntactic Agglutinating formation* is the way through which the ideopictograms are linked in a sentence. The ideopictographic syntagma can be formed by the Basic ideopictogram or by the ideopictographic compounds. Despite forming well defined units on their own (words) they are syntagmaatically agglutinated regardless of their graphic representation.

1.4. Ideopictographic Formative Composition (IFC).

The composition of each ideopictogram (basic or compound) follows a very simple principle: it respects the formative root of the main ideopictogram. The idea is always represented in an image, such as in the *basic ideopictogram* around which (or inside by *infixation*) are placed elements from other basic ideopictograms (*morph grams*). In the presence of this main root the elements lose their primacy and phonetic function. The *ideopictographic formative composition* is thus related to the rules of *ideopictographic composition*.

The rules of *ideopictographic composition* are linked with *morph grams* which, in their turn, connect to the *basic ideopictogram* and which behave as affixes. Those rules are called: *preffixation*; *infixation* or over position (inside the closed or open *basic ideopictogram*); and *suffixation*. All digitally represented *affixes* indicate declension or specific number values. *Infixation* is destined to the formation of *ideopictographic compounds* (morph grammatical and morphological).

1.5. Ideopictographic Noun Composition (INC).

The *ideopictographic noun composition* is the result of an agglutination phenomenon which originates the *ideopictographic compounds*. It follows the same rules as the *noun compounds* in Vedic-

2. DECLENSION

2.1. Nouns and Adjectives.

The declensions are applied to nouns and adjectives such as in Vedic and other Indo-European dialects. However there is no indication for gender; *f.* or *m.* are inferred by the equivalent terms found in Vedic and Prakrits. There are no ideographically specific formations for adjectives; morph graphic signs are not used to determine adjectivation. One identifies adjectives by the syntagmaatic position the ideopictogram occupies in the sentence. Adjectives are in general basic ideopictograms; they are rarely ideopictographic compounds. Basic characteristics and qualities (attributes) are adjectives originated either by the nature of a *planet* (usually the positive aspect) or by the diversified aspect of *geography*; they can also be started by the different parts of the *human* body or *animals*, whose actions suggest certain characteristics.

2.2. Number: singular, dual and plural.

The *singular* is represented by a single ideopictogram and *dual* by its duplication (pair), a similar process to the *Dvandvā* compounds, viz.: , , , , , etc. *Plural* is indicated by the prefixation of digits placed on the left of the ideopictogram, viz.:  ,  ,  ,  , etc. When in two continuous ideopictograms the first presents digits indicating *case* (placed on the right) and the second also has digits but indicates *plural* (normally placed on the left upper corner), the latter submits to the graphic predominance of the former and the number goes to the lower left corner, viz.:    ,  ,  , etc. Numbers including or over three there is a vertical graphic representation , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , ,

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distinction between the *Dvigu* compounds and the plural formation.

2.3. Cases.

The designation of *cases* in Vedic-Sanskrit and Pāli is similar to the old ideopictographic use of *computation* (*saṃkhyā* or *gaṇanā*) through digits. This system has been used to count time and objects and, in the classic period, for the identification of *cases*: ¹ *prathamā* (nom.), ² *dvitīyā* (ac.), ¹ or ³ *tritīyā* (inst.), ² *caturthī* (dat.), ³ *pañcamī* (abl.), ³ *ṣaṣthī* (gen.), ⁴ *saptamī* (loc.) and *āmantrita* (voc.). The formation of *cases* invariably occurs when the respective digits are placed on the upper right corner of the ideopictogram one wants to inflect. The distinction (*vibhakti*) or *ending* among the cases follows, therefore, the normal sequence of *enumeration* or *computation*.

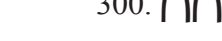
The cases known to the present time — which can be observed in the *Corpus of Hindu Seals and Inscriptions* (Parppola *et al.*, 1989), are mostly six: nominative/vocative (⊗); accusative (⊗¹); instrumental (⊗²); dative/genitive (⊗²); ablative (⊗³); and locative (⊗⁴)⁵. For the nom./voc. (*āmantrita*) the ideopictogram presents no digit: it stands as spoken or named. As was already mentioned the layout of the numbers must not be mixed with number value as the latter are invariably placed in the upper left corner.

3. CARDINALS

The number system follows the same composition in Vedic-Sanskrit and Pāli or any other Prākṛit. It is extraordinarily similar to the old Chinese number system (pictographic), which leads one to believe in a common origin; other systems equally show a resemblance, such as

5- The concept of “infix” used in this grammar is not the same used in modern and classic linguistics. In this context it means the sign placed inside the ideogram when ideographic compounds are formed.

Egyptian and Sumerian. However the Chinese is the most similar, probably since the time when the two mythical regions of *Uttara-Kuru* and Takla-Makan were a cultural melting pot.

1. ' 	11. 	21. 
2. " 	12. 	22. 
3. "" or " 	13. 	23. 
4. "" 	14. 	24.  or 
5. "" or " 	15. 	25. 
6. 	16. 	26. 
7.  or 	17. 	27. 
8. 	18. 	28. 
9. 	19. 	29. 
10. 	20. 	30. 
40. 	50. 	60. 
70. 	80. 	90. 
100. 	102. 	105. 
200. 	300.  ou 	
700.  ou 		

* The *outline* shows the hypothetical cases that follow the system's logic.

4. VERB

The concept of verb (conjugation) as the nuclear part of a term appears with the creation of a consonantal alphabet. Before this step, when

ideas were represented by ideopictograms, there seems not to have been a distinction between what was inferred as verb and what was defined as noun; there were, therefore, no specific ideopictograms for one or the other. It was only afterwards with the surging of a consonantal alphabet and the phoneme function that the verb started to represent an independent member or a visible root. In an ideopictographic writing the importance of the message lies in itself and not in morpheme conjugation; this principle of unity can be seen through several ideopictographic nouns from which we can take the verb which animates or gives life to. In a later stage morphemes began by representing roots of nouns and verbs. The importance of the phonetic root came only with the alphabetization of the language and never before.

The verb (the action) lies implicit in the ideopictogram because still the whole is represented in a *basic ideopictogram* or in an *ideopictographic compound*, which is figuratively and significantly more important. However the inexistence of a specific morph graphical element indicating a verb does not prove its absence to a spoken level — it would not make sense in a language. In this sense using an ideopictographic syntagma might have meant the indicative tense of the verb; nevertheless this characteristic is not so clear in this ideopictographic system as to be accepted as a general rule. But we can unmistakably build a derivation of an ideopictographic verb simply by using a basic ideopictogram, viz.:  *aṣ tā* (runner) > *aś (run);  *kákṣa* (path) > *kac (link);  *grhá* (house) > *grah (hyde);  *páśa* (rope) > *paś (tie);  *bhū* (earth) > *bhū (exist);  *viśva* (universe) > *viś (enter);  *varśá* (water) > *vr̥ṣ (rain); etc.

The creative power of the verb for the formation of nouns in the classic directly comes from the intrinsic importance given to the subject; therefore it must agree with the corresponding verb. The statement made by Yāska in the *Nirukta* about the nature of verbs and nouns becomes easier to understand when we see the ideopictographic morphology and its etymology; nevertheless Yāska believed that all etymological and

grammatical tradition had been spoken without a writing system ever having existed in the Vedic period:

Moreover, substantives should be named according to the regular and correct grammatical form of a verb, so that their meaning may be indubitable, e.g. puruṣa (man) should take the form of puri-śaya (city-dweller); aśva (horse), of aṣṭā (runner); tṛṇam (grass), of tardanam (pricker). Further, people indulge in sophistry with regard to current expressions, e. g. they declare that earth (pṛthivī) is (so called) on account of being spread (√ prath); but who spread it, and what was the base? Again, Śākaṭāyana derived parts of one word from different verbs, in spite of the meaning being irrelevant, and of the explanatory radical modification being non-existent, e.g. (explaining sat-ya) he derived the later syllable ya from the causal form of (the root) i (to go), and the former syllable sat from the regular form of (the root) as (to be). Further, it is said that a becoming is preceded by a being, (hence) the designation of a prior (being) from a posterior (becoming) is not tenable; consequently this (theory of the derivation of nouns from verbs) is not tenable. (cf. Sarup. Chap. I, 1998: p. 14).

It is possible that after the collapse of the Harappā culture (including the region of Dholavira) the memory of an ideopictographic writing has fallen into oblivion and with it the knowledge of forming ideopictographic compounds from basic ideopictograms (pictographic roots). However the idea of creating names from roots and forming compound words remained as one of the most important focus of attention of classic Indian grammarians. The lack of unanimity among them as far as the origin of nouns (etymology), suffixes and verbs were concerned seems to indicate the old procedure of formation based on ideopictographic or oral composition. For successive generations of grammarians the intention was the adaptation to a new phonetic system.

The principle proposed by Śākaṭāyana, which defended the formation of nouns based on verbs, emerged of this linguistic anachronism. However, as Gārgya counter-argued, this method “forced” the etymologies by submitting them to a false origin — as can be seen in the term *aśva* (horse). If truly this term had derived from the root **aś* (travel), then all *travels* would be called *aśva*, as well as all things whose

names started by the same term, which does not happen. On the other hand, why had Pāṇini only tried to justify the word derivation through suffixation? Which linguistic current might Pāṇini have represented?

Amazingly, and despite the argument of the derivation from *aśva* had ended giving the fallacious origin to the horse or, should we say, about the root **aś*, there isn't a single pictogram among the whole pictographic *corpus* that might have been related to the horse or any of its parts; however, if we accept the root presented by Yāska (*aṣṭā* “runner” ← **aś* “run”) then we find a pictogram that fits perfectly the term and etymological meaning, viz.:  *jaṃghā* “leg” / *aticāra*, “fast” / *aṣṭā* “runner”. The “leg”  of a goat is “fast” because  (*róhiṇī*) is a “runner” and that movement derives from “running”  (**aś*); this way, the goat's leg takes the name of “runner”. Yāska and Gārgya agree as to the process of etymologic formation from roots as can be observed in all ideopictographic formation.

The linguistic procedure becomes clearly evident if applied to an ideopictographic system. The change from one system to another (ideopictographic to phonetic) implied successive etymological reforms, the disappearance of some words and the creation of others based on a phonetic system. A problem persists, however, linked to the spreading of the Harappā culture seals between the Indus river valley and Dholavira region: no memory of this writing remained in the classic period, nor long texts were found, which could corroborate the thesis of a “writing” amidst a society that has always claimed an oral tradition. Yet, the intuition of a verb from which a noun can be defined is evident in this ideopictography, just as Yāska, Gārgya e Pāṇini came to sustain.

5. BASIC IDEOPICTOGRAM.

5.1. Ideopictographic Formation (IF).

The formation of the *basic ideopictogram* stands on a real and

symbolic principle. It is a fixed element around which and by affixation of other characters (*basic ideopictogram and morph grams*) a new term can be developed into an *ideopictographic compound*. The *basic ideopictogram* always represents real objects that can be identified through the Vedic and Indo-European imaginary. Its real meaning gives place to another, in most cases symbolic and homonym.

5.2. Homologue Ideopictograms (HI).

The phenomenon related to *ideopictographic homology* is limited to the level of the *basic ideopictogram* and the symbology expressed in the Vedas through double meanings and crossed synonyms. Etymologists Yāska and Durga explain the different meanings of a word when the meaning is different in a sentence. This statement appears to be an adaptive way of explaining etymologies based on an ancient and ideopictographic tradition differently applied to a phonetic system rather than in a phonetically rooted evolution. This is the most plausible reason we can find to explain the disagreement between etymologists and grammarians.

Ideographic compounds keep the same phenomenon in the presence of the *basic ideopictogram*. The basic ideopictograms' original roots are connected both by actions they represent and for the ideas they transmit. These roots are not clearly expressed and knowing them previously is the first condition to reach the original pictographic root. But how can this previous knowledge be obtained?

This aspect makes us believe in the existence of an oral tradition based school, despite the great importance given to the graphic means. Since the basic ideopictogram is subject to the phenomenons of *homonymy*⁶, *homography* and *antonymy*, only through an oral teaching process would hundreds of ideopictographic combinations be fully

6 - Yāska designates the set of homonymic words by *aikapadikam*. (Cf. Sarup, op. cit.: Chap. IV, p. 56).

nāgarī alphabet placed in the astrologic houses with their respective degrees.

It is not without reason that in Sanskrit, Vedic, Pāli and other middle-Indian languages the terms *gaṇa* (“quantity” or “multitude”), *gaṇita* (“calculation”, “enumeration” or “counting”) and *gaṇaka* (“astronomer” or “arithmetic”) find the same formative root in **gaṇ* (गण) “count”, “enumerate” and “calculate”. In this sense, the reason why the ancient astronomers and astrologers were considered as “arithmetics” is easy to understand, for they devoted themselves to the counting of days of stars and planets during the year and their respective degrees and angle distances through different calculations.

In their “counting” activities, astrologers / astronomers made use of auxiliary tools for calculus and counting. In this context, pictograms, decorative patterns and *yantras* had a decisive role in the Basic formation of magic and symbolism. In the beginning of the formation of etymologies and language — starting with the ideopictographic system — grammar, astronomy and arithmetical functions could not be distinguished.

For this reason the term *gāṇaya* (“metric lines”), applied to the poetic construction of the hymns, finds its origin in the same root **gaṇ*. What was later called “metric lines” probably had the same meaning of “metric lines” that built the auxiliary tools for astronomic calculus. This is, most likely, the only explanation to the fact that to these days the *nāgarī* alphabet characters and the *mantras* are still associated to the “magic squares” and other geometric forms.

In the *Yantracintāmaṇi* forms (given to Śiva through her son Gaṇeṣa by the tantric tradition — an antroponymous also derived from **gaṇ*) and *Saundaryalaharī* (by Śaṃkarācārya) we can find several *yantras* with the same designs as shown in the seals. Some of these *yantras* clearly reveal their metric function as letter counters (*bījas*) of the *nāgarī* alphabet. Each of them (squares, rectangles, triangles, etc.) is associated to a planet which determines the number of rooms, just like a house or a temple is built. But

these *yantras* do not represent merely the symbolic numbers of each planet which, on their turn, define “metric”: they are also their long activity cycles.

The ideopictograms deciphered in this chapter show the imaginary of the “astrologic house” (*bhāva*), with its respective rooms occupied by planets and stars with the shape of astronomic calculus tables. In a similar way, the Vedic altar is built in a circle, imitating *Agnī* in the shape of a bird (cf. ŚBr. 10.4.5,2 e AV.) and a triangle.

This cosmic architecture thus becomes more precise and elaborate; the way urban architecture implies a previous land measuring plan. In this sense, the classic astrology *śāstras* (which tradition dates back to the Vedic period), like the *Brhatpārāśara Hora Śāstra* imputed to Maṇḍana Paśara, present a system of 16 different “*vargas*” (rooms): *rāśi*, *horā*, *dreṣkāṇa*, *caturtāmśa*, *saptamāmśa*, *navāmśa*, *daśamāmśa*, *dvādaśāmśa*, *ṣoḍaśāmśa*, *viṃśāmśa*, *siddhāmśa* (*caturviṃśāmśa*), *bhāmśa* (*nakṣatrāmśa* or *saptaviṃśāmśa*), *triṃśāmśa*, *catvāriṃśāmśa* (*khavedamśa*), *akṣavedāmśa* and *ṣaṣṭyāmśa*. Some of these “rooms” are recognizable among the ideopictograms explained in this chapter of the dictionary. It was, therefore, based on the equivalence we established between the definitions given in those classic astrology works and the identified ideopictograms that it was possible for us to determine the corresponding transliterations and translations.

Architecture implies the existence of an architect; in cosmic dimension, the meaning of “architect of the gods” that *Tvaṣṭṛ* has in the Vedic texts is accurate and correctly associated to the “building” of cosmic structures. We must thus assume that these structures are the signs and the planets where the gods and their shapes live. This way, *Tvaṣṭṛ* is also the one who presides to the good birth of men; this particularity clearly gives away His superior astrological nature, as in fact is stated in the RV. 10.18,6: *May Tvaṣṭṛ, he who presides to the good births, be persuaded to give you many years to live.* The same imputation of Daityas

understood.

The *ideopictographic homonyms* are basic ideopictograms which present a double meaning: the one represented by the image as such and a symbolic one. As for pronunciation and tone they are usually the same.

The *ideopictographic homographs* behave as *synonyms* (payayī-पययी), viz.: *paṭala* / *ūrdhvā* and in ideopictography  *ceiling* / *sky*,  *floor* / *earth*.

The *ideopictographic antonyms* are basic ideopictograms whose first meaning come from the respective *homonym* e *homograph* meanings but to which an opposite meaning was added. Its accent, tone and meaning are different. The phenomenon related to *antonymy* is only applied to asymmetrical ideopictograms, the only ones allowing “mirror projection”, viz.:  ,  ,  ,  , etc.

5.3. Ideopictographic Groups (IG).

Ideopictograms can be grouped by similarity (topic) and form *homogeneous pictographic cycles*; they can also be organised simply by symbolic similarity which we name *heterogeneous pictographic cycles*.

The *homogeneous cycles* are easily identified because they show a very clear ideopictographic rigidity and a basic topic despite the constant intervention of *morph grams*.

The *heterogeneous cycles* indicate homonymic and homographic meanings as well as the meaning of topic symbology.

5.4. Morph Graphism.

The concept of morph graphism is extended to a wide variety of pictograms. They are elements that are part of the composition of basic ideopictograms which they join to complete the main meaning, viz.: , , , , , , etc.

5.4.1. Morph grams (Mf).

An isolated root not always forms a basic ideopictogram. It is many times the result of the addition of two other ideopictograms by *infixation* or juxtaposition of morph graphic elements. This kind of composition creates a new word transforming it in a new basic element — it is, therefore, a symbiosis for which generally contribute all ideopictograms that can be agglutinated. In any of these cases the symbiosis takes place inside the pictogram (open or closed) 𑀩, 𑀪-𑀫 or linked to the Basic formative element such as in 𑀩𑀭𑀮 (*bahútārā*) and 𑀭𑀮𑀱 (*tareśa*).

The *morph grams* are in the formation of basic ideopictograms such as *affixes*, *prefixes*, *infixes* and *suffixes*. In the first situation morph grams determine the formation of *plurals* and *numerals*. In the second they show *numerals*, *adverbs*, *adjectives* and *inflexions*. In the third they only show *inflexions*.

5.4.2. Noun Compounds (NC).

In Vedic they are generally formed by two members, three at the most. In the Harappā ideopictographic writing the same procedure is observed. At first *noun compounds* are formed by two terms whose meaning doesn't necessarily indicates the sum of the two as Macdonell refers: *in the RV. and the AV. no compounds of more than three independent members are met with, and those in which three occur are rare, such as pūrva-kāmakṛtvān fulfilling former wishes.*⁷

The first element, although it represents the *group of many*, becomes an *invariable form* — which is not inflected, or is a mere theme of a word subject to inflexion — and generally appears in the weak degree. The second will never be a pronoun because it only has noun value, and receives the competent inflexion.

7- Vocative is not considered a case according to the classic rules and has no equivalence in this ideographic system.

In the pronoun, however, it strengthens the singular neutral nominative form for any gender or case. If it represents a root in the second term, its function remains one of *adjective* or *noun*, always in the weak degree.

5.4.3. Ideopictographic Compounds (IC).

The *Ideopictographic compounds* show the same formative structure of two or three basic ideopictograms, but mostly two such as in Vedic where some small compounds appear. In time these compounds grew in extension and frequency, including the use of inflexion.

The *noun ideopictographic composition* reveals this starting point with a minimum of two ideopictograms, and rarely develops into one of three, in which case it is linked to a sole basic ideopictogram.

Indian grammarians divide the compounds into four semantic groups and use the names given to them by Pāṇini and also used in other languages: *dvandvā*, *karma-dhāraya* and *tat-pūruṣa* (which form two subgroups), *dvigu* and *bahuvr̥hi*.

Whitney joined them in three classes with subdivisions: copulative, determinant (dependent and descriptive) and secondary (possessive and compound, whose final member is inflexible). Macdonell believes the triple division is more convenient. He calls the first Whitney compounds *coordinative* and includes the latter in the generic name of *possessive*.

In the ideopictographic case we chose for the three groups of compounds: *dvandvā* (copulative), *karma-dhāraya* and *tat-pūruṣa* (descriptive and dependent) and *dvigu* (numeral). As to the *bahuvr̥hi* group, its ideopictographic composition is equivalent to the one of the *karma-dhāraya* and *tat-pūruṣa*, despite being possessive (cf. Macdonell 1987: p. 267).

Our classification followed the principles of the ideopictographic

formation, although we clearly recognise the groups: *coordinative*, *determinant* and *possessive*. To this moment the *avyaībhāva* group (adverbials) was not detected; only superiority comparatives starting with nouns, adjectives and numerals were observed.

Tatpuruṣa (noun + noun)

☸ (spastamuhūrta) the auspicious hour.

𑀓𑁆𑀭 (*agnik'setratārā*) the transit of *agnik'setra*.

॥ (bāndhumanī) the visible jewel.

$\boxtimes$ (*ḍrkāṇabharanī*) the deacanate of *bharanī*.

Karmadhāraya (adj. + noun)

॥ (āróhaṇa nándā) the rising of *nándā*.

𑖦𑖫𑖜𑖩𑖪 (*saṃdhyātārā*) the transit of *saṃdhyā*.

𐎧𐎠𐎢𐎡𐎹 (*rucyucchala*) the praised and luminous.

Dvigu (num. + noun)

𑀓𑀺𑀭𑀸𑀮𑀸𑀢𑀺𑀓 (*tryucchala*) three praised.

𑀓𑀓𑀓𑀓𑀲 (*catūrmuhūrta*) four *muhūrtas*.

 (*pāñcabharanī*) five (degrees) *bharanī*.

𐎠𐎡𐎢𐎣𐎤𐎥𐎦𐎧𐎨𐎩𐎪𐎫𐎬𐎭𐎮𐎯𐎰𐎱𐎲𐎳𐎴𐎵𐎶𐎷𐎸𐎹𐎺𐎻𐎼𐎽𐎾𐎿𐏀𐏁𐏂𐏃𐏄𐏅𐏆𐏇𐏈𐏉𐏊𐏋𐏌𐏍𐏎𐏏𐏐𐏑𐏒𐏓𐏔𐏕𐏖𐏗𐏘𐏙𐏚𐏛𐏜𐏝𐏞𐏟𐏠𐏡𐏢𐏣𐏤𐏥𐏦𐏧𐏨𐏩𐏪𐏫𐏬𐏭𐏮𐏯𐏰𐏱𐏲𐏳𐏴𐏵𐏶𐏷𐏸𐏹𐏺𐏻𐏼𐏽𐏾𐏿𐐀𐐁𐐂𐐃𐐄𐐅𐐆𐐇𐐈𐐉𐐊𐐋𐐌𐐍𐐎𐐏𐐐𐐑𐐒𐐓𐐔𐐕𐐖𐐗𐐘𐐙𐐚𐐛𐐜𐐝𐐞𐐟𐐠𐐡𐐢𐐣𐐤𐐥𐐦𐐧𐐨𐐩𐐪𐐫𐐬𐐭𐐮𐐯𐐰𐐱𐐲𐐳𐐴𐐵𐐶𐐷𐐸𐐹𐐺𐐻𐐼𐐽𐐾𐐿𐑀𐑁𐑂𐑃𐑄𐑅𐑆𐑇𐑈𐑉𐑊𐑋𐑌𐑍𐑎𐑏𐑐𐑑𐑒𐑓𐑔𐑕𐑖𐑗𐑘𐑙𐑚𐑛𐑜𐑝𐑞𐑟𐑠𐑡𐑢𐑣𐑤𐑥𐑦𐑧𐑨𐑩𐑪𐑫𐑬𐑭𐑮𐑯𐑰𐑱𐑲𐑳𐑴𐑵𐑶𐑷𐑸𐑹𐑺𐑻𐑼𐑽𐑾𐑿𐒀𐒁𐒂𐒃𐒄𐒅𐒆𐒇𐒈𐒉𐒊𐒋𐒌𐒍𐒎𐒏𐒐𐒑𐒒𐒓𐒔𐒕𐒖𐒗𐒘𐒙𐒚𐒛𐒜𐒝𐒞𐒟𐒠𐒡𐒢𐒣𐒤𐒥𐒦𐒧𐒨𐒩𐒪𐒫𐒬𐒭𐒮𐒯𐒰𐒱𐒲𐒳𐒴𐒵𐒶𐒷𐒸𐒹𐒺𐒻𐒼𐒽𐒾𐒿𐓀𐓁𐓂𐓃𐓄𐓅𐓆𐓇𐓈𐓉𐓊𐓋𐓌𐓍𐓎𐓏𐓐𐓑𐓒𐓓𐓔𐓕𐓖𐓗𐓘𐓙𐓚𐓛𐓜𐓝𐓞𐓟𐓠𐓡𐓢𐓣𐓤𐓥𐓦𐓧𐓨𐓩𐓪𐓫𐓬𐓭𐓮𐓯𐓰𐓱𐓲𐓳𐓴𐓵𐓶𐓷𐓸𐓹𐓺𐓻𐓼𐓽𐓾𐓿𐔀𐔁𐔂𐔃𐔄𐔅𐔆𐔇𐔈𐔉𐔊𐔋𐔌𐔍𐔎𐔏𐔐𐔑𐔒𐔓𐔔𐔕𐔖𐔗𐔘𐔙𐔚𐔛𐔜𐔝𐔞𐔟𐔠𐔡𐔢𐔣𐔤𐔥𐔦𐔧𐔨𐔩𐔪𐔫𐔬𐔭𐔮𐔯𐔰𐔱𐔲𐔳𐔴𐔵𐔶𐔷𐔸𐔹𐔺𐔻𐔼𐔽𐔾𐔿𐕀𐕁𐕂𐕃𐕄𐕅𐕆𐕇𐕈𐕉𐕊𐕋𐕌𐕍𐕎𐕏𐕐𐕑𐕒𐕓𐕔𐕕𐕖𐕗𐕘𐕙𐕚𐕛𐕜𐕝𐕞𐕟𐕠𐕡𐕢𐕣𐕤𐕥𐕦𐕧𐕨𐕩𐕪𐕫𐕬𐕭𐕮𐕯𐕰𐕱𐕲𐕳𐕴𐕵𐕶𐕷𐕸𐕹𐕺𐕻𐕼𐕽𐕾𐕿𐖀𐖁𐖂𐖃𐖄𐖅𐖆𐖇𐖈𐖉𐖊𐖋𐖌𐖍𐖎𐖏𐖐𐖑𐖒𐖓𐖔𐖕𐖖𐖗𐖘𐖙𐖚𐖛𐖜𐖝𐖞𐖟𐖠𐖡𐖢𐖣𐖤𐖥𐖦𐖧𐖨𐖩𐖪𐖫𐖬𐖭𐖮𐖯𐖰𐖱𐖲𐖳𐖴𐖵𐖶𐖷𐖸𐖹𐖺𐖻𐖼𐖽𐖾𐖿𐗀𐗁𐗂𐗃𐗄𐗅𐗆𐗇𐗈𐗉𐗊𐗋𐗌𐗍𐗎𐗏𐗐𐗑𐗒𐗓𐗔𐗕𐗖𐗗𐗘𐗙𐗚𐗛𐗜𐗝𐗞𐗟𐗠𐗡𐗢𐗣𐗤𐗥𐗦𐗧𐗨𐗩𐗪𐗫𐗬𐗭𐗮𐗯𐗰𐗱𐗲𐗳𐗴𐗵𐗶𐗷𐗸𐗹𐗺𐗻𐗼𐗽𐗾𐗿𐘀𐘁𐘂𐘃𐘄𐘅𐘆𐘇𐘈𐘉𐘊𐘋𐘌𐘍𐘎𐘏𐘐𐘑𐘒𐘓𐘔𐘕𐘖𐘗𐘘𐘙𐘚𐘛𐘜𐘝𐘞𐘟𐘠𐘡𐘢𐘣𐘤𐘥𐘦𐘧𐘨𐘩𐘪𐘫𐘬𐘭𐘮𐘯𐘰𐘱𐘲𐘳𐘴𐘵𐘶𐘷𐘸𐘹𐘺𐘻𐘼𐘽𐘾𐘿𐙀𐙁𐙂𐙃𐙄𐙅𐙆𐙇𐙈𐙉𐙊𐙋𐙌𐙍𐙎𐙏𐙐𐙑𐙒𐙓𐙔𐙕𐙖𐙗𐙘𐙙𐙚𐙛𐙜𐙝𐙞𐙟𐙠𐙡𐙢𐙣𐙤𐙥𐙦𐙧𐙨𐙩𐙪𐙫𐙬𐙭𐙮𐙯𐙰𐙱𐙲𐙳𐙴𐙵𐙶𐙷𐙸𐙹𐙺𐙻𐙼𐙽𐙾𐙿𐚀𐚁𐚂𐚃𐚄𐚅𐚆𐚇𐚈𐚉𐚊𐚋𐚌𐚍𐚎𐚏𐚐𐚑𐚒𐚓𐚔𐚕𐚖𐚗𐚘𐚙𐚚𐚛𐚜𐚝𐚞𐚟𐚠𐚡𐚢𐚣𐚤𐚥𐚦𐚧𐚨𐚩𐚪𐚫𐚬𐚭𐚮𐚯𐚰𐚱𐚲𐚳𐚴𐚵𐚶𐚷𐚸𐚹𐚺𐚻𐚼𐚽𐚾𐚿𐛀𐛁𐛂𐛃𐛄𐛅𐛆𐛇𐛈𐛉𐛊𐛋𐛌𐛍𐛎𐛏𐛐𐛑𐛒𐛓𐛔𐛕𐛖𐛗𐛘𐛙𐛚𐛛𐛜𐛝𐛞𐛟𐛠𐛡𐛢𐛣𐛤𐛥𐛦𐛧𐛨𐛩𐛪𐛫𐛬𐛭𐛮𐛯𐛰𐛱𐛲𐛳𐛴𐛵𐛶𐛷𐛸𐛹𐛺𐛻𐛼𐛽𐛾𐛿𐜀𐜁𐜂𐜃𐜄𐜅𐜆𐜇𐜈𐜉𐜊𐜋𐜌𐜍𐜎𐜏𐜐𐜑𐜒𐜓𐜔𐜕𐜖𐜗𐜘𐜙𐜚𐜛𐜜𐜝𐜞𐜟𐜠𐜡𐜢𐜣𐜤𐜥𐜦𐜧𐜨𐜩𐜪𐜫𐜬𐜭𐜮𐜯𐜰𐜱𐜲𐜳𐜴𐜵𐜶𐜷𐜸𐜹𐜺𐜻𐜼𐜽𐜾𐜿𐝀𐝁𐝂𐝃𐝄𐝅𐝆𐝇𐝈𐝉𐝊𐝋𐝌𐝍𐝎𐝏𐝐𐝑𐝒𐝓𐝔𐝕𐝖𐝗𐝘𐝙𐝚𐝛𐝜𐝝𐝞𐝟𐝠𐝡𐝢𐝣𐝤𐝥𐝦𐝧𐝨𐝩𐝪𐝫𐝬𐝭𐝮𐝯𐝰𐝱𐝲𐝳𐝴𐝵𐝶𐝷𐝸𐝹𐝺𐝻𐝼𐝽𐝾𐝿𐞀𐞁𐞂𐞃𐞄𐞅𐞆𐞇𐞈𐞉𐞊𐞋𐞌𐞍𐞎𐞏𐞐𐞑𐞒𐞓𐞔𐞕𐞖𐞗𐞘𐞙𐞚𐞛𐞜𐞝𐞞

As far as genders are concerned, and because in this ideopictographic writing there is no identification in such aspect, we follow the Vedic-Sanskrit and Pāli procedure in the transliteration. If an ideopictographic compound ends in a noun it is the noun which determines the gender.

BASIC IDEOPICTOGRAMS		
 <i>ka</i>	 <i>dvāra</i>	 <i>uttara</i>
 <i>viśva</i>	 <i>gṛhā</i>	 <i>pārvaṇ</i>
 <i>deśā</i>	 <i>īśā</i>	 <i>tārā</i>

IDEOPICTOGRAPHIC MORPH GRAMMATIC COMPOUNDS		
 <i>meru•daṇḍa</i>	 <i>nāva•ka</i>	 <i>vi•rāśī</i>
 <i>upa•muhūrta</i>	 <i>eka•āhar</i>	 <i>viśva•bālava</i>

IDEOPICTOGRAPHIC MORPHOLOGIC COMPOUNDS		
 <i>áhar-mañi</i>	 <i>bahú-gáti</i>	 <i>rāśi-tśá</i>
 <i>viśva-tārā</i>	 <i>párvat-tārā</i>	 <i>agni-tārā</i>

AGGLUTINANT SYNTACTIC FORMATION	
 <i>bhūmiṇīcāt•budha-īṣu</i> (M-183)	 <i>cakrā•catvāriṃśāt-bālava</i> (M-385)
 <i>mangala-īṣu</i> (M-185)	 <i>vi•rāśyā dvidaśati-áyana bha-tārā eka-revātī</i> (M-21)

INFFIXES		
 <i>viśva•bālava</i>	 <i>meru•daṇḍa</i>	 <i>viśva•traya</i>

PREFFIXES		
 <i>éka•candrā</i>	 <i>náva•ka</i>	 <i>catvāriṃśati-muhūrta</i>

IDEOPICTOGRAPHIC NOUN COMPOSITION		
 <i>saṃdhyā-mangala</i> ^(M-57)	 <i>párvan-áyana</i> ^(M-261)	 <i>púṣpa-uttara</i> ^(M-181)

SINGULAR	DUAL	PLURAL
 <i>viśva</i>	 <i>viśvā</i>	 <i>catúr-mangala</i>
 <i>cakra</i>	 <i>cakrá</i>	 <i>sápta-bālava</i>
 <i>bhāgá</i>	 <i>bhāgā</i>	 <i>dvādaśa-śani</i>

IDEOPICTOGRAPHIC FORMATION		
 <i>vi</i>	→	 <i>vi•rāṣi</i>
 <i>rāṣi</i>	→	
 <i>viśva</i>	→	 <i>viśva•bālava</i>
 <i>bālava</i>	→	
 <i>meru</i>	→	 <i>meru•daṇḍa</i>
 <i>daṇḍa</i>	→	
 <i>púṣpa</i>	→	 <i>púṣpa•uttara</i>
 <i>uttara</i>	→	

IDEOPICTOGRAPHIC HOMONYMS			
	roof		brick
	who?		sacrifice
<i>ka</i>		<i>iṣṭa^{kā}</i>	
	tail		bridge
	2° karaṇa		capture
<i>bālava</i>		<i>bandhā^(u)</i>	
	horn		bird
	top		wing
<i>ṣṛṅga</i>		<i>suparṇā</i>	

IDEOPICTOGRAPHIC HOMOGRAPHS			
	<i>dvāra</i>		<i>janghā</i>
	door		leg
	<i>bha</i>		<i>cara</i>
	star		fast
	<i>tri•kūṭa</i>		<i>pipīlā</i>
	three peaks		ant
	<i>pārvata</i>		<i>pīḍā</i>
	tie		eclipse
	<i>udaká</i>		<i>koṣṭha</i>
	water man		cabin
	<i>nayá</i>		<i>sthāna</i>
observant		subdivision	

IDEOPICTOGRAPHIC ANTONYMS			
 <i>pūrṇā</i>	 <i>náva</i>	 <i>áhar</i>	 <i>rātrī</i>
 <i>nándā</i>	 <i>nándā</i>	 <i>bālava</i>	 <i>bālava</i>
 <i>pūrṇā</i>	 <i>pūrṇā</i>	 <i>mandā</i>	 <i>ámanda</i>

IDEOPICTOGRAPHIC HOMOGENEOUS CYCLES							
 <i>rāśi</i>	 <i>rāśi•áyana</i>	 <i>vi•rāśi</i>	 <i>rāśi•agnikṣetra</i>	 <i>rāśi•muhūrta</i>	 <i>tri•vi•rāśi</i>	 <i>caturthāṃṣa</i>	 <i>rāśi•cakra</i>
 <i>kákṣa</i>	 <i>áyana</i>	 <i>áhar</i>	 <i>rātrī</i>	 <i>áhar•áhar</i>	 <i>eka•áhar</i>	 <i>ṣaṭ•áhar</i>	 <i>vi•áhar</i>
 <i>meru</i>	 <i>meru•ka</i>	 <i>meru•daṇḍa</i>	 <i>kāṇḍa</i>	 <i>samá</i>	 <i>uttara</i>	 <i>pūrva</i>	 <i>apācī</i>
 <i>īśá</i>	 <i>nayá</i>	 <i>daṇḍín</i>	 <i>bhágín</i>	 <i>bhágan</i>	 <i>agni</i>	 <i>pūṣan</i>	 <i>śakrá</i>

IDEOPICTOGRAPHIC HETEROGENEOUS CYCLES							
 <i>púṣpa</i>	 <i>citrā</i>	 <i>hemā</i>	 <i>púnarnavā</i>	 <i>revātī</i>	 <i>aśvathā</i>	 <i>sūtā</i>	 <i>Róha</i>
 <i>daṇḍa</i>	 <i>bhāgá</i>	 <i>hala</i>	 <i>dhvajá</i>	 <i>īṣu</i>	 <i>cāpa</i>	 <i>chāyā</i>	 <i>cakra</i>

SUFFIXES			
 <i>cakrām (ac.)</i>	 <i>ucchalám (ac.)</i>	 <i>īṣum (ac.)</i>	 <i>maṇim (inst.)</i>
 <i>ucchalāya (dat.)</i>	 <i>cakrāt (ab.)</i>	 <i>pūrṇāyās (ab.)</i>	 <i>ayanāt (ab.)</i>

PREFIXES			
 <i>vi-áhar</i>	 <i>tri-muhūrta</i>	 <i>pāñca-śṛṅga</i>	 <i>sapta-bha</i>

INFFIXES					
(basic id.)		(basic id.)		(basic id.)	
 <i>Viśva</i>	 <i>viśva•muhūrta</i>	 <i>rāśi</i>	 <i>rāśi•cakra</i>	 <i>Tārām</i>	
	 <i>viśva•áhā</i>	 <i>bha°</i>	 <i>bha•ka</i>		 <i>tarā</i>
	 <i>viśva•bālava</i>	 <i>ghaṭī</i>	 <i>daśa•ghaṭī</i>		 <i>Tarāya</i>
	 <i>viśva•bīja</i>	 <i>nayá°</i>	 <i>nayá•tara</i>		

MORPH GRAMS = AFFIXES		
PREFFIXES	INFFIXES	SUFFIXES
      <i>etc.</i>	            <i>etc.</i>	    

CASES					
<i>nom. voc.</i>	 <i>cakrās</i>	 <i>pūrṇā</i>	 <i>maṇis</i>	 <i>aśvinīs</i>	 <i>īṣu</i>
<i>ac.</i>	 <i>cakrām</i>		 <i>maṇim</i>	 <i>aśvinyam</i>	 <i>īṣum</i>
<i>inst.</i>	 <i>cakrā</i>			 <i>aśvinyā</i>	 <i>īṣunā</i>
<i>dat. gen.</i>					 <i>īṣve</i>
<i>ab.</i>	 <i>cakrāt</i>	 <i>pūrṇāyās</i>	 <i>maṇes</i>	 <i>aśvinyās</i>	 <i>īṣos</i>
<i>loc.</i>			 <i>maṇā</i>	 <i>aśvinyām</i>	 <i>īṣau</i>
	 <i>cakra</i>	 <i>pūrṇā</i>	 <i>maṇi</i>	 <i>aśvinī</i>	 <i>īṣu</i>

DICTIONARY.

This dictionary is organized around eight pictographic topics, of which seven will be dealt with here. The topics contain the representative universe of the magical and symbolic reality of the Harappā culture. Each of them shows how they follow a logical pattern evolving from a single pictogram and thematically developing into multiple aspects. Through the relating topics we also discover the universe shared by Vedic and other cultures which, having represented an important sector of society, have kept their identity after Harappā; we include in this group Jainism, Tantrism and Shaktism.

Thus, we find all the known number sequence from 1 to 24, tens and hundreds according to the digital metric system; in the “architecture” we see the meanings that evolve from the house to the sectioning of the human and sidereal space, in urban planning or astrology; in geography, only the orographical motive was taken into account, where the mountain *Meru* assumes center stage position in cosmology and astrological observation; in the “stars and sidereal movements” the whole *jyotiṣa* formulation is evident even before the body of the *śāstra*, as well as the seasons, the yearly cycle and planets; in the “divinities / man and body parts” the forms are obvious in the idea and pictogram “sir” (*īśá*), upon whom divinities and men are built: *piṅgalá*, *daṇḍīn*, *nāyá*, *bhága*, *agní*, *vyādhá*, *agástya*, *śakrá*, *bharanī*, *yāja*, *yajus*, *ákṣi*, *hasta*, *bāhú*; in “animals” their qualities are lent to the lunar themes, to constellations and planetary movements; the “plants” associate with the seasons of the year and constellations.

1. Digits.

In the collection of seals supplied by the *Corpus of Hindu Seals and Inscriptions* (A. Parpola, 1987-1991) not all the digits appear in their natural sequence. For this reason the *Ideopictographic Rākṣasī Dictionary*

only classifies the detected occurrences. Even so, we can infer the existence of those missing according to the digital logical system through the analysis of this digital number system.

From the mentioned analysis we can also conclude that normal counting used not only the fingers (*aṃgūli*) of each hand but their respective phalanxes (*bhogavyūhā*) — a procedure still at use in India and other traditional cultures such as New Guinea, China, Pakistan, Iraq, Turkey and so on. This is the reason why digits only show two sizes: the small one, made by the medium streak¹ (*vyūhā*) to indicate the combination of numbers from 1 to 24, |, |, ||, ||, |||, |||, |||, |||, |||, |||... |||, (corresponding to the counting of *two hands and two palms*) and all the combinations related to lunar and solar days and, possibly, astronomic degrees (*bagas*); the large streak shaped like a stick | (*daṇḍavyūhā*), indicating the number 10 used as the basic tens unit (*daśā*), as well as all possible combinations formed by pairs of crossed sticks and digits: |, ||, |||, |||, |||, 𑀓, 𑀓, 𑀓.

Of course all combinations of digits are possible, and this is the reason why there are several variants and ways of writing the same number. However it is not an arbitrary choice for it obeys to symbolic and ideogrammatical principles. The difficulty of the ideographical reading increases with the existence of a multiple signification for each ideogram (homonym and homograph), a heritage observed in the Vedic and Sanskrit etymologies.

The maximum unit detected in this type of counting is formed by an *ideographic compound* showing the number 706 (copper ax 2796 = DK 7535). Even so, it does not mean that the man of the Harappā culture didn't know the counting of big numbers or the concept of "infinite" probably expressed by the numbers 3 ||| e 7 ||| — as it is seen in Sanskrit — and by the idea of "omnipresence" 𑀓 (*viśva*). We can suppose that the concepts were actually in use because economic (commerce, sailing) and scientific (astronomy, mathematics, land measuring) activities which

required great counting and complex calculations have developed for a long time. We believe the origin of this type of high counting must have been linked to astronomic phenomena such as sidereal movements (planet cycles, time between conjunctions of planets and stars, Sun and Moon, annual cycles, season cycles, etc.). This type of cycle (*kālachakra*) is still at use, either in the Indian astrology classic cycle or in the application of its related calculations, adjusted to the performance of rituals along the year.

The extraordinary capacity for classic period Indians to calculate Great units and to memorize elaborate calculations and formulas must not be underestimated. In fact, the Indian culture is the only one in the Indo-European family which very early developed such concepts and practice. The possibility of using high mathematics (in relation to commerce and astronomy) and land measuring during the period of Indo / Sarasvatī must not, therefore, be put aside. The well known mathematical test “Patal” to which Buddha was subject when he decided to court princess Gopā, daughter of King Daṇḍapāṇi, is an excellent example of the complexity of mathematical calculation. In that test Buddha answered to Ārjuna, the mathematician (astronomer and astrologer) of the mentioned court who questioned him on the list of high numbers:

1 <i>koṭi</i> = 10^7	1 <i>vivāhá</i> = 1019	1 <i>hetúhila</i> = 1031	1 <i>mudrābala</i> = 1043
1 <i>ayúta</i> = 100 <i>koṭis</i>	1 <i>utsaṃga</i> = 1021	1 <i>karahu</i> = 1033	1 <i>sārvabala</i> = 1045
1 <i>niyúta</i> = 1011	1 <i>bahulá</i> = 1023	1 <i>hetvindriyá</i> = 1035	1 <i>visaṃjñagati</i> = 1047
1 <i>kankara</i> = 1013	1 <i>nāgābala</i> = 1025	1 <i>samāptalambha</i> = 1037	1 <i>sārvasaṃjñā</i> = 1049
1 <i>vivará</i> = 1015	1 <i>tiṭilambha</i> = 1027	1 <i>gaṇanāgati</i> = 1039	1 <i>vibhūtaṃgamā</i> = 1051
1 <i>akṣobhya</i> = 1017	1 <i>vyavasthānaprajñapti</i> = 1029	1 <i>niravadya</i> = 1041	1 <i>tallakṣaṇa</i> = 1053

Ārjuna, who was not happy with Buddha’s answer, presented yet another test: enumerating all divisions or atoms of a *yójana* (Indian mile), to which Buddha promptly answered:

7 <i>atoms</i> make the smallest particle	7 poppy seed make 1 of mustard = 78
7 of these make 1 small particle = 72 <i>atoms</i>	7 mustard seed make 1 <i>yáva</i> grain = 79

7 particles make 1 the wind can still carry = 73	7 <i>yáva</i> grains make 1 not = 710
7 of these particles make one rabbit footprint = 74	12 nots make 1 handfull = 12.710
7 rabbit footprint 1 of sheep = 75	2 handfull make 1 <i>daṇḍa</i> = 2.12.710
7 sheep footprint make 1 of ox = 76	4 <i>daṇḍas</i> make 1 <i>dhānu</i> = 4.2.12.710
7 ox footprint make 1 of poppy seed = 77	1000 <i>dhānus</i> make 1 <i>króśa</i> = 103.4.2.12.710
4 <i>króśas</i> make 1 <i>yójana</i> (mile)	

From this enumeration we can conclude that 1 *yójana* contains $4 \times 103 \times 4 \times 2 \times 12 \times 710 = 384,000 \times 710$ *atoms*! Another particularity of the Indian enumeration, in many aspects similar to the way the Chinese expressed this class of numbers is the following: 5 *koṭi* 7 *prauta* 3 *lakṣá* 2 *ayúta* 6 *sahásra* 4 *sata* 3 *dáśa* 2 — translated in the conventional ways into 57,326,432. The counting of astronomic *yugás* in the Indian tradition is only surpassed by the counting of Jaina tradition. Of course this class of high numbers does not appear in the seals here studied, but the numerical basis is perfectly recognizable. Among the respective ideopictogram is found in *daṇḍas* ||, *dhanus* |||, multiple or derived of *króśa*, such as *hásta* Ψ, etc.

It is obvious that this system went through several reforms, in the sense that Sanskrit evolved from the Vedic level — the same way the ideopictographic alphabet developed and originated another in the intermediate period or when the *Brāhmi* gave origin to *Devanāgarī*. But certainly in the classic system of weights and measures equivalences with the metric Vedic system are still found. The weights found in Harappā and Mohenjo-Daro and in other archaeological sites show subsidies from at least three different sources: spherical shaped weights (like some of Mediterranean origin); barrel shaped weights (similar to those of Elam, Sumeria and known in Egypt, whose values are close to the ones on the Harappā culture); cylinder shaped weights (unusual in Harappā); cone shaped (numerous in the Nal area, Baluchistan); and cubic weights (more spread in the Indo valley and probably developed there). This type of weights were occasionally found with seals, an association that has led some researchers to suggest the usual procedure of weighing, wrapping

and “stamping” (with seals) merchandise which would later be carried in animals or boats, as actually happened in Bahrain and Sumeria.

Despite the digit system presented in this dictionary is decimal, the weighing system seems to have been a mixed one (binary, octog and decimal), originating from different sources indicating the possible long course commercial routes. The smallest weights taken from the unit 13,625 (grams), were distributed 2, 1/4, 1/6, 1/8 and 1/16, and the larger measures by 2, 4, 10, 12, 12, 5, 20, 40, 100, 200, 400, 500 and 800. This system agrees with another used in the classic period and stipulated in the relation $8 \times 8 = 64$ and $10 \times 10 = 100$, approximately in rough numbers. It is remarkable that in the Egyptian counting system we can find figures similar in the *Oudjat* , which in its turn supplies the metrological measures used in the magical rituals: 1/2, 1/4, 1/6, 1/8, 1/16, 1/32 and 1/64.

2. Architecture.

Most ideopictographic writings of the pre-classic period include architectural structures of religious origin in their “alphabets”. Despite this apparently obvious tendency, other housing and merely utilitarian structures were equally included, filling in the pictographic lexis with auxiliary secondary meanings.

The Harappā ideopictographic writing is not excluded from this general principle. Although the architectural structures here included do not clearly reveal an affiliation with religious buildings the way the Egyptian writing does (, , , , , , , the ideopictograms associated with that idea have, indeed, in a second reading level, a religious connection of cosmogonist characteristics. Whatever the intention of the scribes was, these structures appear to be linked to an urban planning we can call “indefinable”. Thus, we can take this “indefinition” in the sense of not having existed — at least at the writing level — a distinction between *sacred* and *profane*, as can be observed in many archaeological sites.

Both in Harappā and in Mohenjo-Dāro structures of temples or religious spaces have not yet been unequivocally recognized; this fact finds echo in the way the ideopictograms represent the architectural structures, and the way they were imagined and designed. Even so, this apparent “indefinition” does not seem to have reached the deepest etymologic meaning in the terms or ideas they wanted to convey. The symbolic, sometimes magical and sacred character of each ideopictogram is unquestionable. In fact, this ideopictographic system used in the case at study in seals / amulets was developed and adapted to be used, at least, in an astronomic and astrologic context by going through a symbolic dictionary which is perfectly recognizable in the Vedic literature.

This does not mean that the same ideopictograms would have exactly identical meanings in a different context. The pre-classic writings reveal a remarkable symbolic and multi-meaning character. It is for this reason we are bound to believe that other tablets, larger than the seals, if found will reveal to us new morphologic and grammatical constructions in which the same ideopictograms (and new ones) show new meanings. Thus, the ideopictogram “boat”  both means “crossing” or “transit”, in the literal sense, carrying people and goods from one shore to another as simultaneously and generically means “transit” or “star” in an astrological context; the same can be said of the ideopictograms for “brick” , “house” , “ceiling” , “gate” , “bridge” , etc.

This multi meaning situations for one term are very common in Sanskrit and Pāli, which inherited them from previous periods. Many times the same term can present such different meanings that we are led to think whether its formation might not have had its origin in different ethnic groups. If it were so, Sanskrit would be explained as a synthetic and artificial language. To make this linguistic enigma bigger, homograph, homonym and antonym words are joined, the same being applied to ideopictography.

The idepictograms which represent architectural structures, as well

as all the others, follow the same intricate multi meaning process found in Vedic-Sanskrit and Pāli. They are bound to the symbolic and literal levels, as is presented in this dictionary and grammar. However, and in spite of the double meanings, we supply other meanings which equally appear late in the classic period, thus allowing that others may try different meta linguistic combinations.

In this context of “indefinable” architecture the central topic around which all ideopictographic variants turn is, no doubt, the “house” □. The elemental meaning taken from the idea is the “delimitation” of a well known geographical space; of a space that can be measured with the help of land measuring and geometry used in building. The “earth house” that shelters us □ (*bhāva*) finds its equivalent in the “heavenly house” or “astrological house” ◇ (*rāśi*).

This way, the “earth house” that shelters us contains subdivisions which, transposed to the “heavenly house” define the canon of the “astrological house”. The names gives to each of the 12 houses (*lagna*, *dṛga*, *astna*, *sukha*, *suta*, *aṁśa*, *jāyā*, *mṛtyu*, *bhāgya*, *karma*, *lābha* and *vyaya*), which appear profusely in the astrological Works of the classic Hindu authors are not, obviously, the same that appear in this ideopictographic writing. The same way that “cases” are indicated by their number — a formula that persisted in Sanskrit — also the *rāśis* were so by digits represented in the interior of each “house” like rooms would be: □ (*prathama-bhāva*), □□ (*dvitīya-bhāva*), □□□ (*trītiya-bhāva*), □□□□ (*caturtha-bhāva*), □□□□□ (*pañcama-bhāva*), □□□□□□ (*ṣaṣṭha-bhāva*), □□□□□□□ (*aṣṭama-bhāva*), □□□□□□□□ (*daśama-bhāva*).

The “house” (*bhāva*) which is used by man for living is the earthly image of his place in heavens and of his daily life. For this reason Hindu astrological charts (north and south) have the shape of a house with twelve rooms, each of them containing the most important representations and variants in a person’s life.

Hindu astrology normally uses two distinct systems to determine the astrological house. The first one is *bhāvachakra*, and is destined to measure

the houses and indicate their positions; the second one is *rāśīchakra* (Zodiac), and it considers the houses as signs. Both systems are represented in this ideopictographic writing, showing the astrological chart of the signs as lozenges and their respective ideopictographic variants , , , , , , (etc.), and the places they occupy as digits as we had mentioned above.

Kendra, or “quadrant” formed by the four cardinal houses also appears here in the figure of the ideopictogram  *rāśī*, in which the respective angular corners or cardinal points have been included: , north, east and south in this order:  (*uttara*),  (*pūrva*) and  (*apācī*).

At the same time, the way the ideopictograms and decorative patterns are treated at the writing and pottery level shows a theme *continuum* that identifies a cosmogony and astrology present in the people’s daily life. In many situations we can recognize pictograms used as decorative patterns; often we come across patterns still at use, such as *yantras*, or integrated in lunar and mathematical systems and *mantras*: , , , , , , , . The abacus counting system, so spread in ancient periods and still at use in many traditional societies, appears to be profusely represented in the seals as an icon and decorative pattern close to the image of the ox: , , , , , , , , , . The “the fire altar” , , , , ,  (*agnikṣetra*) is yet one of the many examples characterizing the phenomenon of pictograms applied as decoration in probably ritualistic pottery.

The classic system still used in India, including astrology, *yantras* and *mantras*, uses the decorative patterns which are in agreement with the patterns of the Harappā culture seals. On the other hand, classic architecture reproduces the same *yantras* in numerous temples — the same that are interpreted as expressions of divinity and of its residences in a wider sense. In a peculiar way they can be used as “computers” (abacus), in the sense of “counters” of sacred formulas using the characters of the

“architect” is later given to *Maya*, an *Asura*, a craftsman learned in magic, astronomy and military science.

3. Mountain - Meru.

The mountain as an *axis mundi* takes a central and fundamental role in all traditional cultures; the more sophisticated these societies become, the more accurate is its cosmic function. In Siberian shamanism it becomes the “pillar of the world”, heaven’s and *yurta* support. In the established religions it is the centre of faith and mystic aspiration. In astronomy and geography it means the “pole” of the place or longitude, the invisible “axis” taken from the Polar Star to the place of the watcher. In a wider sense this cosmic axis (*meru*) is the *gnómon* of astronomic reading which allows the detection of both the preceding days and the degrees in the transit of stars and planets. The term is equivalent to the *akṣ amśa* (“latitude” or “rising” of a pole).

The ideopictographically defining characteristics of the *meru* / *dhruvā* are given in this chapter. Their ideopictographic variants are remarkably identified with concepts and corresponding terms used in Indian classic astrology and astronomy. We may therefore assume that at least an astronomic watching point existed in the Indus valley.

The ideopictogram for mountain  and its variants , , , , , , ,  stand for one of the most extraordinary etymologies we may find in such writing system. In the *Nirukta* and later in the astronomy and astrology (cf. Sūryas.) we can still read the cosmologic descriptions of the 7 mountain chains (*Kula-giri*), where the *Meru* and *Pārvata* are used in an astronomic context. *Meru* takes the meaning of centre of the world and is the observation axis or pole. *Pārvata* or the *Pārvans* are the new and full Moon with the 8th and 14th lunar days of each moon respectively. And *Kula-giri* is the number 7 as value of excellent category equally applied in astronomic counting.

Kula-giri (कुलगिरि) and *nāga* (नाग) are generically used, as well as where the astronomic sense of the number 7 associated to the meaning of “immobility” (नग) directly derives from. This association of ideas must have come from the empirical knowledge of watching the rising movement of the Sun at noon. When it reached the summit, the star was represented by the top of a gnomon. As we have seen before, the ideopictogram representing “north” , as well as the corresponding term in Sanskrit (उत्तर-uttara), means *úpa* (उप) to express the upper part of a gnomon. Thus, the term *upanara* (उपनर), which is the name for a *nāga* (नाग) referred as such by Indian lexicographers, relates to the highest point of a gnomon (*nāga*-नग). Therefore, *nāga*  the serpent takes the synonym of “top of a gnomon” through its homography and homophony; the same way the term *nāra*  meaning man (नर) has both the double meaning of “gnomon” and “man” in Sanskrit. There were, then, several types of gnomons for different types of reading, as is expressed in the *Sūryasiddhānta*: *yaṣṭi-yantra*, *dhanuścakra-yantra*, *chāyāyantra-yantra*, *toyayantra-yantra*, *kapāla-yantra*, *nara-yantra*, *mayūra-yantra* and *vānara-yantra*.

4. Stars and Sidereal Movements.

All planets (*grāha*) have the determinant morph gram “mountain”  (*giri*, cf. D.1.5, p. 249) in their pictographical composition, because they are all “venerable” or “powerful” gods  (*vīrā*, *ibid.*): , , , , , , . Possibly the observing of the planets and stars birth and occlusion in the horizon (*kṣitijavṛtta*) has taken certain mountains as reference. The mountain chain *Rudrahimālaya* is an example of the beginning of an astronomic cycle because its peaks have coincided with the birth of stars for the first time on a given moment — probably when significant changes in the people’s lives occurred. The sequence of 9 planets, such as it appears in the classic astrology compendiums (of which we distinguish the *Bṛhatpārāśara-Horāśāstra*) and is commonly accepted by Indian astrology, is followed in this chapter of the dictionary.

The Moon ☾ and the Sun ☀, together with the special positions certain mountains take in the geo-astrological cartography along the 6 ☸ seasons (sadṛtú) and the times are the two great references in the detection of specific occurrences and planet / asterism lining up with the help of the gnomon | (śamku); at the same time, they are the reference to time counting (on the whole and in fractions) ☒ ☒ (rātryahanī), as well as for time breaks or “rest” ☒ (kālarātrī). Such events were identified as the cause for calamities, great gifts for the people’s lives or the surging and fall of kingdoms. This characteristic which is profusely observed in the classic texts is also evident in the Vedic texts, and nothing against it prevents us from thinking that the same procedure had been a current practice among astrologers, upper classes and general people in the Harappā culture.

Sacrifice, offerings to fire, hymns and all sort of amulets were undoubtedly the possible tools to eliminate or diminish suffering and calamities according to the belief. In his astrology compendium, Varāhamihira gives us the list of some of such accidents, but also a great variety of literary texts such as epics and novels. Of all the Vedic production we cannot exclude its astral association; likewise, we must include in the classic period not only the texts of Hindu tradition but also the Jainas’ and Buddhists’. We can transcribe this simple example taken from the *Prabandhacintāmaṇi* (c. 1361 AD) by Merutuṅga Ācārya: *Meanwhile, that Brahman suddenly awoke from sleep, and seeing that the moon disk had been obscured in the sky by Venus and Jupiter, he awoke his wife; and realizing by the moon disk that the king’s life was at risk, he ordered His wife to bring him the objects appropriate to the sacrifice, so that e could make an offering to fire and thus avoid the calamity.* — (अत्रान्तरे स विप्रोऽकस्मान्निद्राभङ्गमासाद्वाकाशे शुक्रगुरुभ्यां निरुद्धं चन्द्रमण्डलमवलोक्य गृहिणीमुत्थप्य चन्द्रमण्डलसूचितं तन्नृपतेः प्राणसङ्कटमवगम्य होतव्यद्रव्याणि तदुपशान्तये होमार्थमुपदौकयिष्ये). (Cf. Tawney 1982: p. 13)

5. Divinities / Man and Parts of the Body.

Do the Gods have shape? — They, who created different aspects of the universe. And under which shape can they show themselves? Anthropomorphism is as satisfactory for religion's living heart as to the feeling of reality that moves and goes beyond any written language.

There is no description of how to build a physical support to represent divinity in man's dimensions in any passage of the *Rgveda*. Nowhere is that procedure mentioned, and yet a certain anthropomorphism for each clearly expressed divinity is suggested in the whole body of hymns. The priest, and even the simple watcher, could easily imagine such divinities, either during rituals when hymns were recited or when natural phenomenon suggested their appearance: 𑀓, 𑀔, 𑀕, 𑀖, 𑀗, 𑀘, 𑀙, 𑀚, 𑀛, 𑀜, 𑀝, 𑀞, 𑀟, 𑀠, 𑀡, 𑀢, 𑀣, 𑀤, 𑀥, 𑀦, 𑀧, 𑀨, 𑀩, 𑀪, 𑀫, 𑀬, 𑀭, 𑀮, 𑀯, 𑀰, 𑀱, 𑀲, 𑀳, 𑀴, 𑀵, 𑀶, 𑀷, 𑀸, 𑀹, 𑀺, 𑀻, 𑀼, 𑀽, 𑀾, 𑀿, 𑁀, 𑁁, 𑁂, 𑁃, 𑁄, 𑁅, 𑁆, 𑁇, 𑁈, 𑁉, 𑁊, 𑁋, 𑁌, 𑁍, 𑁎, 𑁏, 𑁐, 𑁑, 𑁒, 𑁓, 𑁔, 𑁕, 𑁖, 𑁗, 𑁘, 𑁙, 𑁚, 𑁛, 𑁜, 𑁝, 𑁞, 𑁟, 𑁠, 𑁡, 𑁢, 𑁣, 𑁤, 𑁥, 𑁦, 𑁧, 𑁨, 𑁩, 𑁪, 𑁫, 𑁬, 𑁭, 𑁮, 𑁯, 𑁰, 𑁱, 𑁲, 𑁳, 𑁴, 𑁵, 𑁶, 𑁷, 𑁸, 𑁹, 𑁺, 𑁻, 𑁼, 𑁽, 𑁾, 𑁿, 𑂀, 𑂁, 𑂂, 𑂃, 𑂄, 𑂅, 𑂆, 𑂇, 𑂈, 𑂉, 𑂊, 𑂋, 𑂌, 𑂍, 𑂎, 𑂏, 𑂐, 𑂑, 𑂒, 𑂓, 𑂔, 𑂕, 𑂖, 𑂗, 𑂘, 𑂙, 𑂚, 𑂛, 𑂜, 𑂝, 𑂞, 𑂟, 𑂠, 𑂡, 𑂢, 𑂣, 𑂤, 𑂥, 𑂦, 𑂧, 𑂨, 𑂩, 𑂪, 𑂫, 𑂬, 𑂭, 𑂮, 𑂯, 𑂰, 𑂱, 𑂲, 𑂳, 𑂴, 𑂵, 𑂶, 𑂷, 𑂸, 𑂹, 𑂺, 𑂻, 𑂼, 𑂽, 𑂾, 𑂿, 𑃀, 𑃁, 𑃂, 𑃃, 𑃄, 𑃅, 𑃆, 𑃇, 𑃈, 𑃉, 𑃊, 𑃋, 𑃌, 𑃍, 𑃎, 𑃏, 𑃐, 𑃑, 𑃒, 𑃓, 𑃔, 𑃕, 𑃖, 𑃗, 𑃘, 𑃙, 𑃚, 𑃛, 𑃜, 𑃝, 𑃞, 𑃟, 𑃠, 𑃡, 𑃢, 𑃣, 𑃤, 𑃥, 𑃦, 𑃧, 𑃨, 𑃩, 𑃪, 𑃫, 𑃬, 𑃭, 𑃮, 𑃯, 𑃰, 𑃱, 𑃲, 𑃳, 𑃴, 𑃵, 𑃶, 𑃷, 𑃸, 𑃹, 𑃺, 𑃻, 𑃼, 𑃽, 𑃾, 𑃿, 𑄀, 𑄁, 𑄂, 𑄃, 𑄄, 𑄅, 𑄆, 𑄇, 𑄈, 𑄉, 𑄊, 𑄋, 𑄌, 𑄍, 𑄎, 𑄏, 𑄐, 𑄑, 𑄒, 𑄓, 𑄔, 𑄕, 𑄖, 𑄗, 𑄘, 𑄙, 𑄚, 𑄛, 𑄜, 𑄝, 𑄞, 𑄟, 𑄠, 𑄡, 𑄢, 𑄣, 𑄤, 𑄥, 𑄦, 𑄧, 𑄨, 𑄩, 𑄪, 𑄫, 𑄬, 𑄭, 𑄮, 𑄯, 𑄰, 𑄱, 𑄲, 𑄳, 𑄴, 𑄵, 𑄶, 𑄷, 𑄸, 𑄹, 𑄺, 𑄻, 𑄼, 𑄽, 𑄾, 𑄿, 𑅀, 𑅁, 𑅂, 𑅃, 𑅄, 𑅅, 𑅆, 𑅇, 𑅈, 𑅉, 𑅊, 𑅋, 𑅌, 𑅍, 𑅎, 𑅏, 𑅐, 𑅑, 𑅒, 𑅓, 𑅔, 𑅕, 𑅖, 𑅗, 𑅘, 𑅙, 𑅚, 𑅛, 𑅜, 𑅝, 𑅞, 𑅟, 𑅠, 𑅡, 𑅢, 𑅣, 𑅤, 𑅥, 𑅦, 𑅧, 𑅨, 𑅩, 𑅪, 𑅫, 𑅬, 𑅭, 𑅮, 𑅯, 𑅰, 𑅱, 𑅲, 𑅳, 𑅴, 𑅵, 𑅶, 𑅷, 𑅸, 𑅹, 𑅺, 𑅻, 𑅼, 𑅽, 𑅾, 𑅿, 𑆀, 𑆁, 𑆂, 𑆃, 𑆄, 𑆅, 𑆆, 𑆇, 𑆈, 𑆉, 𑆊, 𑆋, 𑆌, 𑆍, 𑆎, 𑆏, 𑆐, 𑆑, 𑆒, 𑆓, 𑆔, 𑆕, 𑆖, 𑆗, 𑆘, 𑆙, 𑆚, 𑆛, 𑆜, 𑆝, 𑆞, 𑆟, 𑆠, 𑆡, 𑆢, 𑆣, 𑆤, 𑆥, 𑆦, 𑆧, 𑆨, 𑆩, 𑆪, 𑆫, 𑆬, 𑆭, 𑆮, 𑆯, 𑆰, 𑆱, 𑆲, 𑆳, 𑆴, 𑆵, 𑆶, 𑆷, 𑆸, 𑆹, 𑆺, 𑆻, 𑆼, 𑆽, 𑆾, 𑆿, 𑇀, 𑇁, 𑇂, 𑇃, 𑇄, 𑇅, 𑇆, 𑇇, 𑇈, 𑇉, 𑇊, 𑇋, 𑇌, 𑇍, 𑇎, 𑇏, 𑇐, 𑇑, 𑇒, 𑇓, 𑇔, 𑇕, 𑇖, 𑇗, 𑇘, 𑇙, 𑇚, 𑇛, 𑇜, 𑇝, 𑇞, 𑇟, 𑇠, 𑇡, 𑇢, 𑇣, 𑇤, 𑇥, 𑇦, 𑇧, 𑇨, 𑇩, 𑇪, 𑇫, 𑇬, 𑇭, 𑇮, 𑇯, 𑇰, 𑇱, 𑇲, 𑇳, 𑇴, 𑇵, 𑇶, 𑇷, 𑇸, 𑇹, 𑇺, 𑇻, 𑇼, 𑇽, 𑇾, 𑇿, 𑈀, 𑈁, 𑈂, 𑈃, 𑈄, 𑈅, 𑈆, 𑈇, 𑈈, 𑈉, 𑈊, 𑈋, 𑈌, 𑈍, 𑈎, 𑈏, 𑈐, 𑈑, 𑈒, 𑈓, 𑈔, 𑈕, 𑈖, 𑈗, 𑈘, 𑈙, 𑈚, 𑈛, 𑈜, 𑈝, 𑈞, 𑈟, 𑈠, 𑈡, 𑈢, 𑈣, 𑈤, 𑈥, 𑈦, 𑈧, 𑈨, 𑈩, 𑈪, 𑈫, 𑈬, 𑈭, 𑈮, 𑈯, 𑈰, 𑈱, 𑈲, 𑈳, 𑈴, 𑈵, 𑈶, 𑈷, 𑈸, 𑈹, 𑈺, 𑈻, 𑈼, 𑈽, 𑈾, 𑈿, 𑉀, 𑉁, 𑉂, 𑉃, 𑉄, 𑉅, 𑉆, 𑉇, 𑉈, 𑉉, 𑉊, 𑉋, 𑉌, 𑉍, 𑉎, 𑉏, 𑉐, 𑉑, 𑉒, 𑉓, 𑉔, 𑉕, 𑉖, 𑉗, 𑉘, 𑉙, 𑉚, 𑉛, 𑉜, 𑉝, 𑉞, 𑉟, 𑉠, 𑉡, 𑉢, 𑉣, 𑉤, 𑉥, 𑉦, 𑉧, 𑉨, 𑉩, 𑉪, 𑉫, 𑉬, 𑉭, 𑉮, 𑉯, 𑉰, 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terms, invariably show up in homograph and homonym situations, meaning what they really mean and conveying both a sense of astronomic and astrologic dimension. This characteristic can be observed in the Vedic language (from *Rgveda* to *Atharvaveda*), and in Sanskrit or Pāli. This way, as we can clearly see, the etymological origin of each known or lost term can be found in this ideopictographic system.

6. Animals and Parts of the Body.

All zoomorphic representations have both an astrologic and astronomic connotation, whose etymologies can still be found in the astrologic lexis of the classic period emerging in numerous situations connected with planetary movements, in the Works imputed to Garga, to Jaimini, to Pārāśara, to Varāhamihira and to Pṛthūyaśas: , , , , , , , , , , , , , , , , , , , , , , , , , , , , , , .

This way the ideopictograms are in their most part related to aspects and specific movements of planets and stars. We have the eight types of planetary movements as examples: *gātis* (*vakrā*  / *anuvakrā* ; *samā*  / *viśama* ; *mandā*  / *āmandā* ; *cara*  / *aticara* , cuspid (*śṛṅga* ) and the eclipses or occlusions (*markā*  and *pipilā* .

This ideopictographic group still shares the same type of characteristics and meanings which are grouped under the topic “Religious objects, insignias and weapons”.

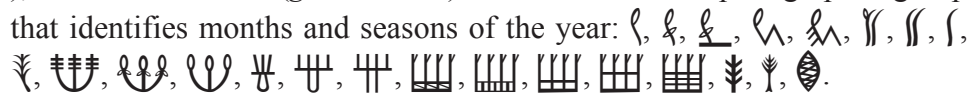
7. Plants, Trees and Seasons of the Year.

Trees and several plants are to this day an object of cult in Hinduism, Janaism and Buddhism. The holy fig tree   (*Ficus religiosa*, L. ~ *aśvatthā*) is the most respected, being in the centre of countless rituals; several texts refer to it as a tree of cosmic dimensions. Certain trees have been considered the permanent residence of divinities, and for this reason were believed to have magic, therapeutic and miraculous worth, as referred to in the R̥V. 10.97 and in the AV. 6.136,1. In the AV. a certain number of amulets prepared with plants are

mentioned. Trees and other kinds of plants have equally been chosen as symbol of the seasons of the year and their corresponding months.

Despite several plants having been widely known due to their therapeutic characteristics (*ayurvedic*) and integrated in mythology and astrology, only a few appeared to have been chosen to use in this ideopictographic writing. Even with such limited number it was possible to identify the species here represented, whose ideopictographic compounds morphologic formation, were in the origin of compound words and etyma in Vedic-Sanskrit and Pāli, such as they appear in later texts.

In Indian traditional astrology plants are classified according to a certain order and specific planetary types. The Sun rules over vigorous trees with strong branches. Saturn rules over uninteresting trees. The Moon rules over milky sap trees, such as the rubber tree. Venus commands blossoming trees. Mars is in charge of sour trees such as the lemon tree. And Mercury rules over fruitless but generally useful trees. This classification is considered as valid when the same plants are mentioned in the Vedic and classic texts.

Weeds (*śādhī/tṛṇam*), leguminous plants and cereals (*śāka/śasyam*), bushes and trees (*gulma/vṛkṣā*) constitute the ideopictographic group that identifies months and seasons of the year: 

TRANSLITERATION AND TRANSLATION.

Of all the astronomic records translated here we point out the ones which we could more precisely date through planetary conjunctions and specific planetary linings during solstices and equinoxes. Surely these last phenomena were the ones which interested the most the astrologers and priests of Harappā, Mohenjo-Dāro and all the communities integrating this culture, but they are also the ones which call our attention above all because they provide us with precise datings inside the absolute chronology spreading between 7000-600 BC (cf. Gregory L. Possehl – 1996; Agrawal, D. P. – 1982). Since the seals here dealt with are included in a time line between the stages IV (*Early-Mature Harappan transition* 2600-2500 BC) and the end of the VI (*Post-Urban Harappan* 1700-1000 BC), we established a time limit to detect the corresponding conjunctions between 4713 BC (maximum limit given to the computer software we used) and 1500 BC (date chosen as a purely academic redundancy). We paid equal attention to the year 2637 BC, which was chosen by the Chinese to start their twelve year calendar, as a mere cultural reference and mainly the cycles *Mṛgaśiras* (Orion *c.* 4500-3500 BC.) and *Kṛttika* (Pleiades *c.* 2990-1900 BC.), with *Rohinī* (Aldebaran *c.* 3100 BC.) as a transitional period.

Of the zoomorphic sequence represented in the seals we couldn't, to this day, make a clear and unequivocal sense. However we tend to believe this sequence may obey to a year cycle or to seasons of the year, here represented by those animals as was later seen in the Chinese twelve animal system — the reasons linked to the loss of this tradition may have been the cause of the disruption and end of the Harappā / Mohenjo-Dāro culture.

This way, the order of the seals we present here tries to reproduce (probably in an imperfect way) the manner by which astronomers and

astrologuers displayed the years and the successive seasons; it does not follow the order adopted in the *Corpus of Hindu Seals and Inscriptions*.

As to the meaning and logic of the inscriptions' content we have tried, whenever possible, to display it in such a way as to enlighten the descriptions exposed in each seal. This process has revealed itself impossible at times and on its whole a gigantic task because we wanted to keep the sequence of the animal categories. This is the reason why, some times, part of an inscription (of a broken seal) is found on another whole seal belonging to a different animal group which we took the liberty to reproduce in the shadowy area of the broken seal.

Observing the seal collection under analysis, the fact that they are “seals”, and that part of them is found printed in pottery pieces (solid and liquid containers) leads us to reflect upon the ritualistic way to which they were destined. If their use had been simply the “commercial” seal of a pot regardless of its size, it would have made no sense at all to keep the same seal to repeat the same print over and over when what had been printed there as only a specific moment in a given month of a certain year, with the accuracy only astronomy and astrology may achieve. It would, therefore, make no sense to have a seal recording a solstice on July 26th 3912 BC, for example, when Mars and Saturn had been in conjunction five days previously and use it commercially, to have it reused again some centuries later when the same conjunction occurred again. Therefore, we inferred that these seals, by their unique nature destined to mark unique moments in their owners' life, were used in rituals after having been consecrated, the same way an amulet is today with water or milk.

89.^[M-953; Vṛṣan]



viśva•bījat-viśva•bījam-tārā||

Trans. – *the transit of beginning-to-beginning*.

120.^[M-131; Vṛṣan]

ॐॐॐॐॐॐॐॐ

viśva-muhūrta-tāras gāti-muhūrta-tārā||

Trans. – *the transit of auspicious-birth, the all-auspicious.*

173.^[M-723; Vṛṣan]

ॐॐॐॐॐॐॐॐ

vi•rāśis dvidāśa maṅgala-śani viparīta•gāti pārvan-tārā||

Trans. – *the powerful 20° (tithi) of Mars-Saturn, the transit from rise-to-dawn of the Full Moon.*

243.^[C-9; Vṛṣan]

ॐॐॐॐॐॐॐॐ

śukra dāśa•ghaṭī-triṃśat viśva•bala buddha-nāyā||

Trans. – *10 ghaṭīs and 30° (tithi) of Venus and the almighty Mercury watcher.*

254.^[Ad-5; Vṛṣan]

ॐॐॐॐॐॐॐॐ

viparīta•gāti pārva-nāyā||

Trans. – *the watcher of Pārva from rise-to-dawn.*

334.^[M-214; Vṛṣan]

ॐॐॐॐॐॐॐॐ

cakrā-śakūni-tithi bhāgā||

Trans. – *the cycle of fate of the Śakūni-mooning.*

