Substrate Languages in Old Indo-Aryan (R̥gvedic, Middle and Late Vedic).

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The languages spoken in the northern part of the Indian subcontinent in prehistoric times have been discussed throughout most of this century. This concerns the periods of the R̥gveda and of the Indus or Harappan Civilization (nowadays also called Indus-Sarasvatī civilization in some quarters). Since the Twenties, the area of the newly discovered Indus civilization has been regarded, beginning with J. Bloch, as having been populated by Dravidian speakers, while other early 20th century scholars such as S. Lévy and J. Przyludski have stressed the Austro-Asiatic (Munda) substrate of Northern India, — both are positions that have been maintained until today (e.g., Burrow, Emeneau, Parpola vs. Kuiper, Hock, Southworth). The relationship of these languages to the archaic (Vedic) form of Sanskrit has played a major role in such discussions. Both Dravidian and Munda have usually been understood as having *preceded*, as substrate languages, the introduction of Old Indo-Aryan (Vedic Sanskrit). Such suppositions will be investigated in this

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paper, and evidence will be produced indicating that the linguistic picture of this early period of South Asia was much more complex — as complex, indeed, as that of modern India.

§ 0. Definitions.

§ 0.1. By way of introduction, as few definitions are in order. First of all, it must be stressed that Vedic, Dravidian and Munda belong to three different language families (respectively, Indo-European, Dravidian and Austro-Asiatic). Since this is no longer recognized in some of the more popular sections of the press and the publishing business, it must be pointed out that the recognition of basic differences between language groups (in word formation, declension, conjugation and in syntax) is a well established item of linguistic science that applies to *all* human languages (summaries by Hock 1986, Anttila 1989). One cannot make an exception just for the subcontinent and claim that South Asian languages are so similar that they belong to a new linguistic 'family' (S. Kak).

What South Asian languages indeed have in common are certain features, especially some of syntax, that are due to long standing bilingual contacts and that make them appear superficially similar, just as, for the same reasons, the Balkan languages Rumanian, Bulgarian, Albanian, and Greek share some peculiarities which make translation between them easy. Nevertheless, nobody in Europe or elsewhere would deny that they belong, respectively, to the Romance, Slavic, Albanian and Greek sub-branches of Indo-European (IE), and it is not maintained that they form a new 'Balkan family'.

Of course, the South Asian languages also share a lot of common cultural vocabulary derived from Sanskrit (sometimes effectively disguised by the development of the language in question, especially in Tamil), just as European languages, whether IE, Uralic, Basque or even Turkish share many Greek and Latin words of culture and science, and more recently, of technology.

§ 0.2. Secondly, the materials available for this study have to be reviewed briefly. Since we cannot yet read the Indus script with any confidence (Possehl, 1996b, discusses the rationale of some 50 failed attempts), we have to turn to the Vedic texts first.

I will concentrate here on evidence from the Vedas as they are earlier than Drav. texts by at least a thousand years. This also has the advantage that the *oldest* linguistic data of the region are used, which is important because of the quick changes that some of the languages involved have undergone. The Vedas provide our most ancient sources for the Old Indo-Aryan variety (IA; OIA = Vedic Sanskrit) of the Indo-Iranian branch (IIr. = Old Iranian, Nuristani and Old Indo-Aryan) of the Indo-European language family (IE = Celtic, Germanic, Italic, Slavic, Greek, Hittite, Tocharian, etc.) that are spoken in the subcontinent. However, these texts also contain the oldest available attestation for non-Indo-European words in the subcontinent (Dravidian, Munda, etc.)

§ 0.3. The Vedas were orally composed (roughly, between 1500–500 BCE) in parts of present day Afghanistan, northern Pakistan and northern India. To this day, their oral transmission has been exceptionally good, as is commonly known. They are followed by the early Dravidian sources, represented by the ancient Tamil "Sangam" (Caṅkam) texts of South India (stemming from the beginning of our era); however, these texts still are virtually unexplored as far as non-IA and non-Drav. substrates and adstrates from neighboring languages are concerned. From a slightly earlier period than the Sangam texts comes the Buddhist Pali canon of (western) Northern India; it has been composed in an old form of Middle Indo-Aryan (MIA). The Epic texts (Mahābhārata, Rāmāyaṇa) were composed by a host of bards from various parts of northern India in a form of Sanskrit that is heavily influenced by MIA.

In order to evaluate the substrate materials, the time frame and the geographical spread of these texts have to be established first. The procedures to arrive at a fairly secure dating cannot be discussed here in any detail; this would take another long paper. It may suffice to point out (Witzel 1987, 1989, 1995, 1999) that the R̥gveda (RV) is a bronze age (pre-iron age) text of the Greater Panjab that follows the dissolution of the Indus civilization (at c. 1900 BCE) — which limits its time frame to (maximally) c. 1900–1200 BCE; the latter date is that of the earliest appearance of iron in the subcontinent. The RV is followed by a number of other Vedic texts, usually listed as Saṃhitās, Brāhmaṇas, Āraṇyakas and Upaniṣads. Linguistically, however, we have to distinguish five distinct levels: (1) R̥gveda, (2) other Saṃhitās (mantra language), (3) Yajurveda Saṃhitā prose, (4) earlier and later Brāhmaṇas (incl. Āraṇyakas and Upaniṣads) and (5) the late Vedic Sūtras (Witzel 1987, 1997; for abbreviations of names of texts, their dates and their geographical location see attached list).

While the area of the RV, as clearly visible in the mentioning of the major rivers, is the Greater Panjab (with the inclusion of many areas of Afghanistan from Sistan/Arachosia to Kabul/Gandhara), its temporal horizon consists of three stages, roughly datable between c. 1700–1200 BCE (Witzel 1995, 1999, J. R. Gardner, Thesis Iowa U. 1998, Th. Proferes, Ph.D. Thesis, Harvard U. 1999). They are:

> *I. the early *R̥gvedic period*[1]: c. 1700–1500 BCE: books (*maṇḍala*) 4, 5, 6, and maybe book 2, with the early hymns referring to the Yadu-Turvaśa, Anu-Druhyu tribes;
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> *II. the middle (main) *R̥gvedic period*, c. 1500–1350 BCE: books 3, 7, 8. 1–66 and 1. 51–191; with a focus on the Bharata chieftain Sudās and his ancestors, and his rivals, notably Trasadasyu, of the closely related Pūru tribe.
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> *III. the late *R̥gvedic period*, c. 1350–1200 BCE: books 1.1–50, 8.67–103, 10.1–854; 10.85–191: with the descendant of the Pūru chieftain Trasadasyu, Kuruśravaṇa, and the emergence of the super-tribe of the Kuru (under the post-RV Parikṣit, Witzel 1997).

These levels have been established, not on the basis of linguistic criteria, but on the basis and by the internal criteria of textual arrangement, of the 'royal' lineages, and independently from these, those of the poets (*r̥ṣis*) who composed the hymns. About both groups of persons we know enough to be able to establish pedigrees which sustain each other. Applying this framework to the linguistic features found in the various *maṇḍalas* of the R̥gveda, we are in store for some surprises.

§ 0.4. Before coming to this, however, another item must be discussed briefly, that of the concept of substrates. The RV contains some 300 words, that is roughly 4% of its hieratic vocabulary, that

[1] Settlement in Gandhāra/Panjab: early books 5, 6 up to Yamunā/Gaṅgā, e.g. Atri poem 5.52.17; the relatively old poem 6.45.13 has *gāṅgya*, next to chieftain Br̥bu.

are not Indo-Aryan (Kuiper 1991). It is possible to establish their non-IA character by studying their very structure. For, words belonging to a certain language follow well-established patterns. The word structure of English (or IE in general) is well known. In English, for example, a word cannot start with *tl-* or *pt-*. Words such as *Tlaloc*, an Aztec god, are impossible, and those in *pt-* are loans from Greek, such as *Ptolemy.* Whorf's structural formula of English monosyllablic words (*Language, Thought and Reality*, 1956; simplified):

$$\{\ 0,\ (\mathrm{s}+/-)\ \mathrm{C}\text{-}\eta + \mathrm{V} + 0,\ \mathrm{C}\text{-h}\ \}$$

allows to predict that English words beginning in *ngo-* or ending *-goh* are not possible. If *ng-* or *nk-* do occur now, they are late loans from African languages (e.g., Nkrumah); or, before the influx of Yiddish or German words into American English, *sh* + consonant also was not allowed, while we now have: *to shlep* or *strudel,* as opposed to older words such as *to slip* or *to stride.* These examples also show that foreign words can enter a host language in pronunciations close to their original ones (however, *strudel* does not have the German but the American *-r-*), and that, at the same time, at they can easily be detected if they violate the original structure of the language in question.

IE nouns and verbs have three parts: root (dhātu), suffix (pratyaya) and ending, such as *dev-a-ṃ śaṃs-a-ti* "he praises the god." The root (dhātu), the part of the word carrying the lexical meaning (*dev* "heavenly", *śaṃs* "praise"), is enlarged by suffixes (immediate/primary: *kr̥t*, secondary: *taddhita*). They are attached (here: *-a-*) to the root and are followed by the noun endings (*-m*) or verb endings (*-ti*). IE roots ordinarily have three consonants, and can only have the structure given below, where ( ) indicates possible appareance; *b* is very rare in IE; C = consonant (includes the laryngeal sounds, H = h_1, h_2, h_3); e = standard IE vowel (> Skt. *a*); it can change to *o* (> Skt. *a*), *ē*, *ō* (> Skt. ā) or disappear (*zero* forms); R = resonants, the "semi-vowels" *y*, *r*, *l*, *v* and *m*, *n* which can also appear as *i*, *r̥*, *l̥*, *u*, *a*, *a*; further, *s* when found at the beginning of roots, is unstable and can disappear (as in *spaś* 'spy' : *paś-ya-ti* 'he sees'). IE/IA/Vedic roots must conform to the following formula (Szemerényi 1970):

prefixes +/- {(s) (C) (R) (e) (R) (C/s)} +/- suffixes

Possible thus are, e.g., Skt. *ad* (eC), *pat* (CeC), *śrath* (CReC), *bandh* (CeRC), *kr̥* (CR), *śru* (CRR), *kram* (CReR), *krand* (CReRC), *i* (R), *iṣ* (RC), *man* (ReR), *manth* (ReRC), *tras* (CRes), *tvakṣ* (CReKs), *stambh* (sCeRC), *svap* (sReC), *sas* (ses) etc.; with laryngeals: *bhū* (CRH), *brū* (CRRH), *īkṣ* (HRCs), *as* (Hes), etc. Sounds inside a root are arranged according to the following order of preference: C/s-R-e, thus : CRe-(Skt. *śram...*), sRe- (Skt. *srav...*) are allowed, but not: RCe-, Rse- (Skt. **r̥ka...*, **usa...*). Not allowed in IE are the following consonant groupings in a root, the types: *bed*, *bhet*, *tebh*, *pep*, *teurk/tekt* (Skt. **bad*, *bhad*, *tabh*, *pap*, *tork*, *takt*) This classification of possible roots often allows to classify non-IE roots and words at a glance.

The number of primary suffixes is limited to certain types, usually *Ce, CR, CRe, R, Re, es (Skt. *-ta*, *-ti*, *-tra*, *-i*, *-ya*, *-as*) etc. Secondary suffixes build up on the primary ones, thus Skt. *-u-mant*, *-a-tāt*, *-a-māna*, etc. On the other hand, suffixes such as *-āś*, *-ṭa*, *-an-da/-a-nda-*, *-būth-a/-bū-th-a* (see below) do not exist in IE and IIr. Therefore, the very structure of many of the 'foreign' and loan words in the RV simply do not fit the IE structure of those properly belonging to Ved. Sanskrit (just as *Nkrumah*, *Mfume* must be foreign words viz. recent loans in English). Consequently, RV words such as *kīnāśa*, *Kīkaṭa*, *Pramaganda*, *Balbūtha*, *Bṛbu*, *Bṛsaya* are simply not explainable in terms of IE or IIr: the verbal/nominal roots *kīn*, *kīk*, *mag*, *balb*, *bṛs* do not exist in IE as only roots of the format {(cons.) (R) e (R) (cons.)} are allowed and as *b* is very rare in IE; further, only *ṣ* (but not *s*) is allowed in Vedic after *i*, *u*, *r*, *k*, and finally, the suffixes *-ā-śa*, *-ṭa*, *-an-da/-a-nda*, *-būth-a/-bū-th-a* do not exist in IE/IIr.

§ 0.5. The structure of RV words has already been studied at some length by former colleague at Leiden and one of my several great teachers, F.B.J. Kuiper (1991, cf. 1955). However in this small book, written at the age of 85, he limited his task to a discussion of their structure and to pointing out some features which link them to Dravidian and Munda, and, as he conceded, "maybe to some unknown language(s)." Therefore, he did not proceed to discuss the Indus language, nor did he study the various levels of Ṛgvedic speech beyond the usual division into older (books 2–7, etc.) and late RV (book 10). However, as soon as we apply the three stage leveling discussed above, a different picture of the RV and the subsequent Vedic texts emerges than known so far. To sum up, we can distinguish the following substrate languages.

— A Central Asian substrate in the oldest Ṛgvedic;

— RV I: no Dravidian substrate but that of a prefixing Para-Mundic (or Para-Austroasiatic) language, along with a few hints of Masica's U.P. Language "X", and some others;

— RV II and III: first influx of Dravidian words;

— Post-RV (YV, AV Mantras <MS, KS, TS, VS, AV, PS> and later Vedic): continuing influx of the *same* types of vocabulary into the educated Vedic speech of the Brahmins; occurence of Proto-Munda names in eastern North India.

— Other substrates include Proto-Burushaski in the northwest, Tibeto-Burmese in the Himalayas and in Kosala, Dravidian in Sindh, Gujarat and Central India, and predecessors of remnants language groups, now found in isolated pockets of the subcontinent (Kusunda in C. Nepal, pre-Tharu in S. Nepal/UP, Nahali in C. India, and the pre-Nilgiri and Vedda substrates).

So far, linguists have concentrated on finding Dravidian and Munda reflexes, especially in the oldest Veda, the Ṛgveda (RV). These studies are summed up conveniently in the etymological dictionaries by M. Mayrhofer (Indo-Aryan; *KEWA*, *EWA*), Th. Burrow – M.B. Emeneau (Dravidian; *DED*, *DEDR*), and in the work of F.B.J. Kuiper (Munda/Austro-Asiatic; 1948, 1955, 1991, Pinnow 1959). In addition, it has especially been F. Southworth who has done comparative work on the linguistic history of India (IA, Drav., Munda) during the past few decades; his book on the subject is eagerly awaited.

These items will be discussed in some detail below, including a discussion of the procedures followed as well as some examples for these substrates. Finally, the conclusions we have to draw from the complex linguistic picture of Vedic times will be discussed.

§ 1. Greater Panjab

§ 1.1. Ṛgveda substrate words.

The RV reflects the Panjab and its immediate surroundings of c. 1500–1200 BCE., most clearly visible in its river names, extending from the Kabul River to the Yamunā (mod. Jamna) and even the Ganges (*Gaṅgā*, mentioned only twice) and it represents evidence from the three subsequent historical periods mentioned above. It is important to note that RV level I has no Dravidian loan words at all (details, below § 1.6); they begin to appear only in RV level II and III.

Instead, we find more some three hundred words from one or more *unknown* language(s), especially one working with prefixes. Prefixes are typical neither for Dravidian nor for Burushaski (cf. Kuiper 1991: 39 sqq., 53, see below). Note that the "prefixes" of Tibeto-Burm. (Benedict 1972) do not agree with those of the RV substrate either. Their presence apparently excludes also another unknown language which occasionally appears in the RV and more frequently later on with typical gemination of certain consonant groups (perhaps identical with Masica's "Language X" 1979, see below; cf. Zide and Zide 1973:15). The prefixes of the RV substrate are, however, close to, an in part even identical with those of Proto-Munda; taking my clue from Kuiper (1962: 51,102; cf. now Zide *MT* II: 96), I will therefore call this substrate language *Para-Munda* for the time being.

§ 1.2. Para-Munda loan words in the Ṛgveda

We can start with the convenient list of Kuiper (1991), who does not, however, discuss each of the 383 entries (some 4% of the hieratic RV vocabulary!) This list has been criticized by Oberlies (1994) who retains "only" 344–358 words, and minus those that are personal names, 211–250 'foreign' words[2]. One can, of course, discuss each entry in detail (something that cannot be done here), but even Oberlies' lowest number would be significant enough, in a hieratic text composed in the traditional poetic speech of the Indo-Iranian tradition, to stand out, if not to surprise. It is a clear indication of a strong substrate and of amalgamation of IA speakers with the local tradition. In evaluating this list, it must be said that it is much more difficult to discern Para-Munda/Austro-Asiatic words, than to establish IA or Dravidian etymologies, as an etymological dictionary of Munda is still outstanding (in preparation by David Stampe et al.). Nevertheless, one can, for the time being, make use of Pinnow's reconstructions of Proto-Munda in his investigation of Kharia (1959), Bhattacharya's short list (1966: 28-40), Zide & Zide's discussion of agricultural

[2] Oberlies' criticism is written from an IE-centered point of view similar to that of Mayrhofer (EWA). This is fine from the point of view of someone who has to write an etymological dictionary of OIA; however, due to the clear attestation of cultural, ethnical and religious amalagamation of IIr/IA and local elements visible in the RV, the existence of such a large number of 'foreign' words must not be minimized in its importance. Nor does Oberlies offer an explanation or analysis of the remaining 250 words; they are simply 'non-IA'. In a similar vein, R.P. Das has written a much more 'engaged' review of Kuiper's book, tellingly entitled 'The hunt for foreign words in the Ṛgveda' (*IIJ* 38, 1995, 207–238), which induced Kuiper to write a well-deserved, rather scathing reply in the same volume. It is difficult to understand, in view of the well-known evidence (added to in this paper), how one can regard the language (and religion, culture) of the Ṛgvedic Arya as 'relatively free from foreign influences' (Oberlies 1994: 347). "Pristine" languages and cultures do not exist, nor did they at c. 1500 BCE.

plants (1973, 1976), and Kuiper's relevant studies (especially 1955, 1991; his 1948 book is still very useful, in spite of his own disavowal of it, as a collection of relevant materials). It must be stressed that neither the commonly found Drav. nor Munda etymologies are up to the present standard of linguistic analysis, where both the root and all affixes are explained. This is why most of the subsequent etymologies have to be regarded as preliminary. (Note that only a few examples are given below for each category; fuller details will be included in a forthcoming paper and monograph).

Among the '300 foreign' words of the RV, those with certain prefixes are especially apt to be explained from Para-Munda (viz. directly from Austro-Asiatic). However, "Owing to the typological change that has taken place in these languages, only some petrified relicts remain" (Kuiper 1991: 39). Typical prefixes in modern Munda are such as *p-*, *k-*, *m-*, *ro-*, *ra-*, *ma-*, *a*, *ə-*, *u-*, *ka-* (Pinnow 1959:10 sqq.; cf. also the plural suffix *-ki* in Kharia, p. 265 §341a, 211 §145c); some of them are indeed attested in the c. 300 'foreign words' of the RV.

Of special interest for the RV substrate are the prefixes *ka-*, *ki-*, *kī-*, *ku-*, *ke-*, which relate to persons and animals (Pinnow 1959: 11; cf. p. 265 §341a) and which can be compared, in the rest of Austro-Asiatic, to the 'article' of Khasi (masc. *u-*, fem. *ka-*, pl. *ki-*, cf. Pinnow 1959: 14). The following words in the RV are important, even if we cannot yet find etymologies. (In the sequel, Sanskrit suffixes and prefixes are separated from the substrate word in question).

- The Prefix ka-:

kakardu 'wooden stick', EWA I 286 'unclear';

kapard-in 'with hair knot', Kuiper 1955: 241 sqq.; EWA I 299 'non-IE origin probable'; *kabandh-in*,

kavandha 'barrel' Kuiper 1948: 100. EWA I 327 'unclear';

kākambīra 'a certain tree', EWA I 334 'unclear'.

- The Prefix ki-:

kimīd-in 'a demon', EWA I 351 'unclear'; cf. *śimida*, *śimidā* 'a demoness', Kuiper 1955: 182;

kīkaṭa 'a tribe' 3.53.14; EWA 'foreign name of unknown origin'; prefix *kī-* points to Austro-As.; cf. Sant. *kaṭ-* 'fierce, cruel', or common totemic tribal name (like *Mara-ṭa* PS : Munda *mara'* 'peacock' IA *Matsya* 'fish', *Kunti* 'bird') ∼ Sant. *kaṭkom* 'crab'? cf. Shafer 1954: 107, 125;

kīkasā (dual) 'vertebra, rib bone' 10.163.2, EWA I 355 'unclear'; "formation like *pi-ppala*, etc. and connected with lex. *kaśeruka*..." Kuiper 1955: 147;

kīja 'implement, spur?', 8.66.3; EWA I 355 'loan word possible'; KEWA I 214 and Kuiper 1955: 161, 165: 'doubtful Drav. etym.' (Burrow, BSOAS 12: 373);

kīnārā dual, 'two ploughmen' 10.106.10; EWA I 356 'probably artificial for *kīnāśa*', rather *ś/ḍ/r*, Kuiper 1948: 6, 38, 1991: 30–33, and 1955: 155f., 1991: 26 on suffixes *-āśa/-āra*, (cf. also *-na/-ra* in *rāspina/rāspira*); on *ś* as hyper-Sanskritization for *ṣ/r* cf. *vipāś*; Kuiper 1991: 46 on suffix *-śa*; if *kīnāra-* contains a suffix, then probably no prefix *kī-*.

kīnāśa 'plough man' 4.57.8 (late), AV; Kuiper 1955: 155, 1991: 14, 26, 46 see *kīnāra*; EWA I 356 'unclear'.

kīlāla 'biestings, a sweet drink'; in AV 4.11.10 next to *kīnāśa*; EWA I 358 'unclear'; discussion, above: Khowar *kiḷāl*, Nuristani *kilā́* etc., Bur. *kīlāy*, Kuiper 1955: 150f., CDIAL 3181.

kīsta 'praiser, poet' 1.127.7, 6.67.10, to be read as [*kisətāsaḥ*] Kuiper 1991:23, 1955:155; the unusual sequence *-īs-* (see introd.) points to a loan word (Kuiper 1991:25); EWA I 358 'not clarified'; cf. Kuiper 1991: 20, 23, 25; to be compared with RV *śīṣṭa* 8.53.4 with var. lect. *śīṣṭeṣu*, *śīrṣṭeṣu*, *śīrṣṭrēsa*, Kuiper 1991: 7, 71; this is Sanskritization of **k'īsəteṣu*, Witzel 1999; cf. EWA II 644

• The Prefix ku-:

kumāra 'boy, young man', EWA I 368 'not convincingly explained'; cf. CDIAL 3523, 13488; Kuiper 1955: 146f. compares Tel. *koma* 'young', Tam. *kommai*, etc.; cf. *śi(ṃ)śu-māra* (see below); but note, in Munda: *məndra*, *mər* 'man' (pers. comm. by D. Stampe).

kurīra 'women's hair dress', 10.92.8, EWA I 371 'unclear', Kuiper 1955: 152, 1991: 14, 29-31 compares Tam. *koṭu* 'horn, coil of hair', DEDR 2200

kuruṅga 8.4.19, name of a chieftain of the Turvaśa (cf. Kuiper 1991: 6, 17); EWA I 371 'unclear;' however, cf. *kuluṅga* 'antelope', and the frequent totemistic names of the Munda

kuliśa 'ax', EWA I 374 'not securely explained'; Kuiper 1955: 161, 163 compares Tam. *kuḻir* 'battle ax'; Skt. *kuṭhara*, *kuddāla* 'hoe', and Sant., Mundari *kutam* 'to beat, hammer', Mundari, Ho *kutasi* 'hammer', Kan. *kuṭṭu* 'to beat, strike, pound'; cf. Kuiper 1991:14; Berger 1963: 419 **kuḍiśa*, from **kodeś* in Kharia *khoṇḍe'j* 'ax', Mundari *koṇḍe'j* 'smaller kind of wood ax', with prefix *kon-* and Kharia *te'j* 'to break'

• Double prefixes in Cər-.

More important, perhaps, are the so-called 'double prefixes' in Austro-Asiatic, composed of a prefix (e.g. *k-*) followed by a second prefix (mostly *-n*, see Pinnow 1959: 11). The use of *k-n-* is clear in names of domesticated animals, in Sora *kin-sod* 'dog' : Kharia *solog* 'dog'; Sora *kim-med* 'goat' : Remo *-me'*; *kəm-bon* 'pig' : Juang *bu-tae* (see Pinnow 1959: 168, cf. Jpn. *buta*, Austr. > Sino-Tib. **mba(γ)*); Sora *ken-sim* 'chicken' : Mundari *sim*. Such double prefixes seem to be rarer in Munda now than in Eastern Austro-Asiatic; cf., nevertheless, Kuiper 1991: 94 on *śar-varī* 'night': *śa-bala* 'variegated'; Kuiper 1948: 38 on *kal-*, *kil-*, p. 138 on the prefix *k-*, 1948: 49f. 'prefix *kər-*, *kar-*, and *gala-*'; note Sora *kār-dol* 'being hungry' (D. Stampe, oral communication).

The clearest Vedic example is, perhaps, Ved. *jar-tila* 'wild sesame' AV : *tila* 'sesame' AV, (cf. *tilvila* 'fertile' RV, Kuiper 1955: 157, *tilpiñja*, *-ī* 'infertile sesame' AV, on Sumer. connections s. below). Double prefixes are typical for the Ṛgvedic loans, especially formations with consonant-vowel-*r* = *Cər-* (and also *Cən-*, *Cəm-*), that were adapted in Vedic with various IA vowels (*ṛ*, *ur*, etc., see Kuiper 1991: 42 sqq.; cf. below on Nepalese substrate words). Examples with *Cər* (and due to the common Vedic interchange of *r/l*, also *Cəl-*) include:

karañja name of a demon, EWA I 310 'unclear', cf. the tree name *karañja*, DEDR 1507 Kan., Tel. *kānagu*, Konda *karaṅ maran* etc.; CDIAL 2785.

karambha 'gruel', Kuiper 1991: 51 sqq. compares loan words with *-b-* > *-bh-* (Pkt. *karamba* 'gruel'); — rather with a prefix *kar-* and popular etymology with *ambhas-* 'water' RV, or *ambu* 'water' Up., Mbh. Kuiper 1991: 63; cf. also Kurukh, Malto *amm* 'water', but also Tamil *am*, *ām* DEDR 187;

karkandhu later tree name 'Zizyphus Jujuba', but personal name in RV 1.112.6; EWA I 313 'not clear'; the Drav. word the meaning of *karkandhu*, DEDR 475, 2070, 3293;

khargalā 'owl' 7.104.17 (late), EWA I 448

kalmalīk-in 'shining' 2.33.8; EWA I 325 'unclear'; however, cf. *kalmāṣa* 'spotted', Kuiper 1948: 38; see below on *kilbiṣa*

Further: *kr̥-* [*kər-*], see Kuiper 1991: 40 sqq., 23:

kr̥pīṭa 'bush, brush' EWA I 394 'unclear', cf. also *kr̥muka* 'faggot, wood' KS, CDIAL 3340a; 'unexplained' Kuiper 1955: 160 *kr̥śana* 'pearl', *ūrdhva-*, *kr̥śanā-vat*, EWA I 396 'not securely explained'; Kuiper 1955: 152 compares *kr̥-śana* with other words for 'thick, round', such as Skt. lex. *śāni* 'colocynth?'

khr̥gala meaning unclear: 'staff, crutch, amulet, armor, brush?' 2.39.4; EWA I 494; cf. *khargala* 'owl', above, *Khārgali* PB? — Kuiper 1948: 49f. 'well-known prefix *kər-*, *kar-*, and *gala-*'

kilbiṣa 'evil action'; EWA I 354 'not sufficiently clear', Kuiper 1955: 175 compares TS, VS *kalmāṣa* 'spotted' and Epic *kalmaṣa*, Pkt. *kamaḍha* (cf. Pinnow 1959: 379 sqq., Kuiper 1991:36 sqq.), Kuiper 1948: 38, 138 on prefixes *kal-*, *kil-*, *kar-*; Sant. *boḍor*, *bode*, *murgu'c* 'dirty', with adaptation *-ṣ-/ḍ-* into Ved. similar to *Vipāś-/Vibāl-/*Vipāž* (see below).

Due to the frequent interchange *k*[k']/*ś*:, (see below) the prefix *śar-/śal-* belongs here as well (cf. *kar-koṭa-ka* RVKh ∼ *śar-koṭa* AV):

śarvarī 'night', *api-śarvara*; EWA II 621 compares **śarvar*, *śarman* 'protection'; Kuiper 1955: 144 u. 1955: 170 compares *śambara*, *karbura*, Kuiper 1991: 30 *śabala* 'variegated' with simple prefix, as compared with prefix + infix ("double prefix") in *śambara* (cf. Kuiper 1948: 136)

śalmali name of a tree, 'Salmalia malabarica', EWA II 622 'probably not to be separated from RV 3.53.22 *śimbala*', CDIAL 12351 (not related Tib.-Burm. **siṅ* 'tree'); Kuiper 1991: 65 on cases with *-lm-* for *-mm-*: 'different dissimilations of **śamma/śimmal*'.

sr̥ñjaya 'name of a person' 6.27.7 (next to Turvaśa), 4.15.4 (next to *Daivavant*), *sārñjaya* 'descendent of S.' 6.47.25; EWA II 743 supposes connection with *sr̥jaya* 'a certain bird' KS, which would agree with the totemistic names in Munda; cf. Kuiper 1991: 7, on non-IA tribal names in RV

sr̥binda name of a demon 8.32.2; EWA II 744 with Kuiper 1991: 40,43 (and earlier) on names such as *ku-surubinda* TS, PB, ṢB, *kusur-binda* JB and *bainda* VS 'member of the tribe of the Binds' (probably also the name of the Mountain range, post-Vedic *Vindh-ya*), *Vi-bhindu* RV 8.2.41, 1.116.20, *Vi-bhindu-ka*, *Vi-bhidu-kīya* JB § 203; cf. Kuiper 1939 = 1997: 3 sqq., 1955: 182, Witzel 1999).

In the same way, the prefixes *jar*, *tar*, *nar*, *par*, *bar*, *śar*, *sr̥* = [*ǰər*, *tər*, etc.]: *jarāyu*, *jarūtha* (cf. also Ved. *jar-tila* : *tila*); *taranta*, *tarukṣa*, *tr̥kṣi*, *tr̥tsu*, *nār-miṇī*, epithet of a fort; *nār-mara*, probably the area of or the chief of *Ūrjayantī*; *parṇaya*, *parpharī-ka*, *parśāna*; *prakaṅkata* (next to: *kaṅkata*), *prakala*, *parpharvī*, *pramaganda* (next to: *magadha*), *pra-skaṇva*, *pharva-ra*, *phāriva*; *pr̥thi*, *pr̥thī*, *pr̥-dāku* [*pər-dak-u*] < Munda *da'k* 'water'?, *barjaha*; (cf. also *Nār-ṣada* RV, *Nār-vidāla*, *Nār-kavinda* PS and **ku-bind* in: Ved. *ku-sur(u)-binda*, *bainda*, *vi-bhindu*, *vi-bhindu-kī-ya*).

Furthermore, the formations with other vowels that are adaptations of [-*ər*] as above in [*kər*]: *tirindi-ra*, *turīpa*, *turphari*, *turva/turvaśa*, *turvīti*, *tūrṇ āśa*, *sūrmī*.

Instead of *Cər*, the much more common double prefix of Munda, *Cən-*, *Cəm-*, is found as well: *kaṅkata*; *śamba*, *śambara* (cf. *śabala*!), *śāmbara*, *śiṃśapā*, *śiṃśumāra*, *śiñjāra*, *śimbala*, *śimbāta*, *śimyu*. Compare also the prefixes in *Cəs-*: *puṣkara*, *puṣya*, *rāspina*, *rāspira*.

Kuiper (1991: 39 sqq.) also discusses other prefixes, such as *ā-*, *i-*, *u-*, *o-*, *ni-*, *bhr̥-*, *ma-*, *sa-*, *śa-*, *hi-*. Among them, the old prefix *u-* (*o-*) would be of special interest; however, is found in the RV only in some 5 or 6 cases.

A clear case is *śa-kunti*(*-kā*) RV, *śa-kunta* AV, Ved. *śa-kunta-ka* 'bird', *Śa-kuntalā* name of a nymph, Ved. *Kunti* a tribal name, next to the *Matsya* (IA, 'the Fishes'). The Ved. words belong to Kharia *kon-the'd*, Sora *on-tidən*, etc.; Korku *ti-tid* 'a certain bird', Ved. *tit-tir-a* 'partridge', Pinnow 1959 160 : 336; cf. however RV *śa-kuna*, *śa-kuni* (Kuiper 1991:44).

§ 1.3. Para-Munda and the Indus language of the Panjab

In short, Para-Munda prefixes are thus very common in the RV. One has to agree with Kuiper 1991: 39f: "According to some scholars Munda was never spoken west of Orissa, Bihar, Madhya Pradesh and eastern Maharashtra... The obvious occurrence of Old Munda names in the Rigveda points to the conclusion that this statement should be revised." If (some of) the words quote above should not go back directly to Proto-Munda, one may think, especially in the case of the untypical formation *Cər*, of an *unknown* western Austro-Asiatic language, "Para-Munda" (cf. Kuiper 1962: 51, 102).

If this initial interpretation is correct, several far-reaching conclusions can be drawn. The very frequency itself of non-Drav. loan words in the early (as well as in the later) RV is remarkable: it indicates a much stronger *non-Drav. substrate in the Panjab than usually admitted*. Because of the great similarity with Austro-Asiatic formations and because of some already established (Para-)Munda etymologies (such as *śa-kunta* ∼ Kharia *kon-the'd*, etc., Pinnow 1959 160 : 336), this substrate is likely to be an early form of western Austro-Asiatic.

Is the Indus language therefore a kind of Proto-Munda? Against this may speak first of all, as Kuiper states (1991), that the RV substrate does not have infixes like Munda. However, *-n-*infixes can be adduced in *ka-bandha/ka-vandha*, *kar-kandhu*, *gandhā-ri*, *pra-maganda*, *śa-kunti* < PMunda **ša-kontid*, *sr̥-binda* and, e.g., in post-RV *ku-sur(u)-binda*, *bainda*, *vi-bhindu*, *vi-bhindu-kī-ya*. Yet, the substrate may be a very early form of Munda (or another variety of Austro-Asiatic) which still used prefixes actively, just like the eastern Austro-As. languages, e.g. Mon, Khmer, do even today (cf. also below, on Sumerian). Further, the infixes may have developed from prefixes which had found their way into the root (Pinnow 1959: 15). Among these, one can include 'double' prefixes such as *kə-r-*, *šə-r-*, *pə-r-* etc. (Pinnow 1959: 11). If this is correct, then R̥gvedic Proto-Munda represents a very old stage of Austro-Asiatic indeed, something that does not surprise for a text of c. 1500 BCE.

§ 1.4. Munda and Para-Munda names

However, direct contact of the non-Indo-Aryan words in the RV with predecessors of present day Munda languages is more complex. Some of the substrate words may, at least in part, have entered the RV through the *intervention* of the Indus language (*lāṅgala* etc., see below). Yet, there also are a few *direct* correspondences with reconstructed Proto-Munda (*śa-kunta* < **kon-ti'd*) which indicate the archaic character of the para-Mundic Indus language. For example, the name of *Pramaganda*, the chieftain of the *Kīkaṭa* (RV 3.53.14) who lived south of *Kurukṣetra* (cf. Witzel 1995). Both words are non-Indo-Aryan and they show clear indications of Mundic character: *maganda* can be explained as *ma-gand* with the old, now unproductive Munda prefix *ma-* that indicates possession. The word *gand* may belong to Munda **gad/gaḍ, ga-n-d/gaṇḍ* (Pinnow 1959: 351 § 498) that is also seen in *Gaṇḍa-kī*, *Gaṅgā* (Witzel 1999, if not modeled after the tribal names *Aṅga*, *Vaṅga*, see below), W. Nepali *gāḍ* (as 'suffix' of river names, Witzel 1993) and apparently also in *ma-gadha* (with Sanskritization > *dh*). Kuiper 1991: 43f. (8, 21, 96, also 1955) has explained the prefix *pra-* [*pər*] (cf. prefixes such as *kər-/šər-*) from Munda, which looks perfectly Indo-Aryan but in this case certainly is 'foreign' (*pər* 'son of'? Kuiper 1991: 43). The tribe of chief *Pra-maganda*, the *Kīkaṭa*, has either the typical 'tribal' suffix *-ṭa* (see below) or the old Austro-As. plural prefix *ki-*, (or maybe both). Cf. further the prefix *kī-/ki-* in: *kīnāśa/kīnāra* 'plough man', *Kimīdin*, *kīkasa*, etc., all of which may be compared with the Munda prefix *k-* for designation of persons (and the plural prefix *ki-* of Khasi; note that in RV, *k-* also applies to items merely connected with humans and animals).

Further RV substrate names of persons, tribes and rivers include some *exactly* from the areas where Indus people are to be expected: in their late/post- Indus new settlement area (J. Shaffer 1995: 139) in the eastern Panjab, in Haryana (Kurukṣetra), and especially east of there, well into the Gangetic plains. Even during the middle/late Vedic period, the local rivers of E. Panjab are *still* designated by non-Indo-Aryan names: the famous Bharata chieftain Sudās crosses (RV 3.33) the Śutudrī and Vipāś and settles on the Sarasvatī. They are not explainable from IA:

Śutudrī (Satlej) < **šə-tu-da'*? from Munda **tu* 'float, drift', Kharia *thu'da'* < **tu-da'* (*da'* 'water'), Khasi *pər-tīu* 'outflow'; note the later popular etymology *Śatadru* 'running with a hundred streams'.

Vipāś < **vipaž*/**vibal* (cf. also *Vibālī* RV 4.30.11-12), and note that the Sarasvatī still has a similar name, *Vaiśambhalyā* (with many variants, always a sign of foreign origin, in the Brāhmaṇa texts: TB 2.5.8.6, *-bhalyā*, *-pālyā*, *-balyā* ĀpŚS 4.14.4, *-bhalyā* BhārŚikṣā; cf. also RV *viśpalā*?), which is to be derived from something like **višambaž*/**višambāḷ*, probably with the prefix *śam/k'am-* (as in *Śam-bara*, *Kam-boja*) from **(vi)-šam-bāž*, (note the popular etymology from *vi-śambala* 'having widespread blankets'). It is likely that during the Indus period, the original name of the famous R̥gvedic river Sarasvatī was something like **Vi(šam)baḷ/ Vi(šam)baž*. If one insists, indeed, on renaming the Indus (*Sindhu,* Bur. *sende*) culture, *it should be renamed the Harappan or Sende-Vibaž culture.*

The land of *Tūrghna* (TĀ), north of this region, has no Indo-Aryan etymology either, and *Khāṇḍava* (TĀ), with its suspicious cluster *-ṇḍ–* (K. Hoffmann 1941), south of Kurukṣetra, is inhabited by the *Kīkaṭa* under their chieftain *Pra-maganda.* Note also, in the same area (Kurukṣetra), the appearance of Pinnow's *u*-suffixes in 'foreign words', e.g. *Khāṇḍava*, *Kārapacava*, *Naitandhava*

(Pinnow 1953–4).

The Greater Panjab names of *Gandhāra*, *Kubhā*, *Krumu*, *Kamboja* may be added. — *Gandhāri* RV, *Gāndhāra* Br., O.Pers. *Ga^{n}dāra*, Herodotos *Gandárioi*, EWA I 462, cf. Munda **ga(n)d* 'river', the river names of the Gangetic plains, *Gaṇḍakil* and *Gaṅgā*, the *Gandhina* people on its upper course, and Nep. *-gāḍ* in river names. *Gandhāra* is formed with the common suffix *-āra*, *-āla* (Witzel 1993, 1999); — *Kubhā*, cf. Skt. *kubja* 'bent', Kuiper 1948: 42f., Sant. *kubja* which belongs to Munda *ḍui'j*, *kəb-ḍuj* etc. (Pinnow 1959: 21, 91: § 108, 249 § 286 Kharia *ḍui'j* 'bend', Santali *kəbḍuj* 'ugly', *kəbḍuju'd* 'crooked', p. 435e Santali *kəbnũj* 'bent', etc.) — *Krumu* from Munda **kə-rum* 'luke warm'?? cf. Kharia *rum* 'to burn', Sant. *ur-gum* 'luke warm', Mon *uj-ruṅ* 'humid, warm'; — The *Kamboja* (AV, PS) settled in S.E. Afghanistan (Kandahar); cf. O.Pers. *Ka^{m}bujīya* (or *Kambaujīya*?) 'Cambyses'; however, their name is transmitted as *Ambautai* by Ptolemy (Geography 6.18.3), without the typical prefix). This change in the first syllable is typical for Munda names (see below *Aṅga* : *Vaṅga*, *Kaliṅga* : *Teliṅga*; *Kulūṭa* : *Ulūṭa*, etc.) - Mundas that far west cannot be excluded a piori (Kuiper 1991: 39).

It may be asked, how far Austro-Asiatic speakers extended westwards during and before the RV period. Until now, the *present* distribution of the Munda languages has led to rather far-going conclusions, for example by Burrow (1958, cf. Southworth 1979: 200). Starting from the modern settlement areas of the Mundas in Eastern India (Bihar, Orissa, W. Bengal) and on the River Tapti (in northwestern Maharastra and Madhya Pradesh) he regarded it as impossible that the Munda could ever have settled in the Panjab. Kuiper, however, has been of a different opinion (1955: 140, 1991: 39, see also 1948: 8, cf. Witzel 1980, 1993 on the substrate in Nepal, and 1999 for the Panjab area). The cases discussed above indicate a strong (Para-)Austro-Asiatic substrate in the Panjab, and there are some hints which point to Munda influence in the Himalayas (Konow 1905, Witzel 1993, see below) and even in E. Afghanistan (*Śambara, Kamboja*).

An important result is *that the language of the Indus people*, at least those in the Panjab, must have been *Para-Munda or a western form of Austro-Asiatic*. (Even a minimalistic formulation would have to speak of some three hundred words from one or more unknown languages, especially one working with prefixes.)

In view of the recent comparison by the late I. M. Diakonoff of Munda and Sumerian (*MT* III, 54-62, but note the criticism by Bengtson *MT* III 72 sq., and cf. still differently, Bomhard, *MT* III 75 sqq.) this characterization of the pre-IA Panjab acquires special importance (cf. already Przyludski 1929: 145-149). To follow up, the role of compound nouns in Sumerian versus old 'prefixes' in Munda would need further investigation. In this regard, it should be noted that Sumerian has implosive consonants, just as Munda, Khasi, Khmer, the Himalayan language Kanauri and the Kathmandu Valley substrate, all of which may point to a S./S.E. Asian areal feature.

If Diakonoff's proposal were indeed borne out, the Ṛgvedic Para-Munda substrate in the Panjab of c. 1500 BCE would represent an early link to Sumerian. Notably, Sumerologists, though without any firm reasons going beyond some vague mythological allusion to more eastern territories (Dilmun, etc.), think that the Sumerians immigrated from the east, from the Indus area. If indeed so, the speakers of (Para-)Austro-Asiatic would have been builders of a number of great civilizations, from Mesopotamia to Pakistan/India, Burma and Cambodia.

If a relationship with Munda could not be confirmed by obvious etymologies, a minimal position would be to define the c. 300 non-Dravidian loan words as coming from an unknown, prefixing language of the Greater Panjab, which might be called, for lack of a self-designation, after its prominent geographical features, the Gandhāra-Khāṇḍava or perhaps better, the Kubhā-Vipāś, or simply, using the archaelogical term, the Harappan language.

Finally, in reviewing the evidence of the R̥gvedic Para-Munda, it should be taken into account that Northern and Southern Munda differ from each other in many respects, the southern version usually being more archaic (Zide 1969: 414 sq., 423), though much less known. This difference as well as the shift of Munda from a prefixing language with mono-syllabic roots to one working, in typical South Asian fashion, with suffixes, may have been influenced or even may have been due to a north Indian substrate such as Masica's "Language X".

§ 1.5. Other Panjab substrates

If the Indus language is a kind of Para-Munda it cannot, however, be excluded that one or more *unknown* languages are involved (cf. Zide and Zide 1973:15) in the R̥gvedic substrate. From the older RV onwards, we find a number of words that cannot be determined as Para-Munda. Examples include the words with geminates (see below) e.g. *pippala* RV 5.54.12 and an undetermined number of the c. 300 'foreign words.' Some of them can be traced as being loan words from more distant eastern (Austro-As.) or western (Near Eastern) languages; the path the loans have taken is clear (see below) in the case of RV *lāṅgala* ← Indus **langal* ← PMunda **ñan-kel* ← Austric (Makassar) *naṅkala*; Ved. *vrīhi* < Indus **vrijhi* ← PMunda (c. 1500 BCE) **ərig*/ Tib./Malay *(')bras* ← S.E. As. ***əβərij* (?); Ved. *mayūra* 'peacock' ← Indus **mayur* ← PMunda *mara'* 'crier' ← Austr. (Malay) *merak* → Sino-Tib. **raka* 'cock'. Note also the various substrates in Burushaski, Nahali and "Dhimal" (Kiranti languages in E. Nepal) discussed in *MT* II, III and by Kuiper 1962: 14 sqq., 40, 42, 46f, 50f., Berger 1959: 79; and cf. those of the Kathmandu Valley and Tharu (s. below).

In short, the Panjab is an area of a Pre-R̥gvedic, largely Para-Munda substrate that apparently overlays a still older local level which may be identical with Masica's "language X" found in the Gangetic plains (preserved in some Hindi words). In general, the vocabulary of Para-Munda and "language X" words is limited to local flora and fauna, agriculture and artisans, to terms of toilette, clothing and household; dancing and music are particularly prominent, and there are some items of religion and beliefs as well (Kuiper 1955, 1991). Since no traces of the supposedly Dravidian "Trader's Language" of the Indus civilization (Parpola 1994) are visible in the RV, the people who spoke this language must either have disappeared without a trace (cf. below on Meluḫḫa) or, more likely, the language of the Panjab was Para-Munda already during the Indus period (2600–1900 BCE).

Or, as expressed by Kuiper (1991: 53) in another context: "Burrow and Emeneau understandably and rightly ignore the Pan-Indic aspects, but ... their dictionary [DEDR], by omitting all references to Munda, sometimes inevitably creates a false perspective from a Pan-Indic point of view."

The large number of agricultural words alone (Kuiper 1955) that have no Dravidian explanation indicates that the language of the Indus people cannot have been Dravidian (cf. also Southworth

1988: 663). Their successors, the Indo-Aryans, preferred to tend their cattle and they spoke, like their brethren in spirit, the Maasai, about their sedentary non-Indo-Aryan neighbors in southern Kurukṣetra in this fashion: "what is the use of cattle among the Kīkaṭa?" (*kíṃ te kr̥ṇvanti kī́kaṭeṣu gā́vaḥ*, RV 3.53.14).

As we can no longer reckon with Dravidian influence on the early RV (see immediately below), this means that the language of the pre-R̥gvedic Indus civilization, at least in the Panjab, was of (Para-)Austro-Asiatic nature. This means that *all proposals for a decipherment of the Indus script must start with the c. 300 (Para-)Austro-Asiatic loan words in the RV* and by comparing other Munda and Austro-Asiatic words. (For the Indus script see Fairservis 1992: 14, Parpola 1994: 137 sqq., Possehl 1996b). The decipherment has been tried for the past 35 years or so mainly on the basis of Dravidian. Yet, few Indus inscriptions have been "read" even after all these years of concerted, computer-aided attempts, and not yet in a fashion that can be verified independently (cf. a summary of criticism by Zvelebil 1990). Perhaps that is not even attainable, due to the brief nature of the inscriptions (7 signs on average and hardly more than 20). Yet, Kuiper's '300 words' could become the Rosetta stone of the Indus script.

Further, investigations of the South Asiatic linguistic area (*Sprachbund*) must be reformulated accordingly, for example the question of the retroflex sounds, see Tikkanen 1988, and cf. Zvelebil 1990: 71 on the distinction between true retroflex sounds (domals, 'cerebrals') and cacuminals. In the RV they cannot go back either to Proto-Drav. influence, as usually assumed, because they are already found in the older parts of RV (books 4,5,6) where no Drav. loans are present; they also cannot go back to Proto-Munda influences because Munda originally had no retroflexes (Pinnow 1959, except for *ḍ*, see Zide 1969: 414, 423). The clear increase of the retroflexes in RV books 1, and especially in 10 is remarkable. In the older RV one can only detect very few cases of *not* internally conditioned, original and clearly non-IA retroflexes: RV 6: *kevaṭa* 'hole'; *reṇu-kakāṭa*; *rāṇḍya*, *śāṇḍa*, *(hiraṇya-)piṇḍa* (late hymn), RV 4, 5: *krīḷ-*; RV 2: *śaṇḍika*, *mārtāṇḍa*, *pipīḷe*? (*pīḍ*); cf. also *jaṭhára* in RV 1,2,3,5,6,9,10. None of these old words is Dravidian (see below). In short, the people of the (northern) Indus civilization must have spoken with retroflexes.

Almost the same situation exists with regard to another item of suspected substrate influence, the innovation in Vedic of the grammatical category of absolutives (not found in Old Iranian!, see below). They occur in RV 4 with 1, RV 6 with 1, RV 2 with 4 cases (a relatively high number in this short book!); equally, in RV 3 with only 1, RV 7 with 4, RV 8 (Kāṇ va section) with 0, RV 8 (Āṅgirasa section) with 2, RV 9 with 4; even RV 1 (Kāṇva section) only with 5. — Really innovating are only the late books RV 1 (Āṅg.) with 34, and RV 10 with 60 forms.

§ 1.6. Dravidian in the Middle and Late R̥gveda

As has been repeatedly mentioned, there are no traces of Dravidian language in the Panjab until c. 1500 BCE, not even of the supposedly Dravidian speaking traders and rulers of the Indus civilization; however, Drav. loan words *suddenly* appear in the RV texts of level II (books 3, 7, 8.1–66 and 1.51–191) and of level III (books RV 1.1–50, 8.67–103, 10.1–854; 10.85–191). These include personal and tribal names, as well as cultural terms.

For comparisons, we are limited to Burrow-Emeneau's DEDR, and a few lists from old Tamil texts, but scholars usually work directly with Tamil, Kannada, Telugu (etc.) comparisons; a reconstruction of Proto-Drav. forms is but rarely given.

To begin with, many words that have been regarded as Drav., are now explained as coming from Munda or another substrate language, for example, *mayūra* 'peacock' whose correspondence in Munda **ma-ra'* still has an appellative meaning, 'crier'; (PMunda **ra'k* 'to cry,' Pinnow 1959: 76 § 57). However, this is not so for the Drav. designation, where 'peacock feather' is reconstructed at a level earlier than 'peacock' itself. Indeed, many of the 26 words attested in the RV that Burrow (1945, 1946, 1947, 1947–48, 1955, cf. Southworth 1979 sqq.) originally listed as Drav., as well as those added by Southworth (1979) and Zvelebil (1990) cannot be regarded as *early* Dravidian loans in Vedic.

Even if one would regard *all* of them, for argument's sake, as Dravidian, only *kulāya* 'nest' 6.15.16, *karambha* 'gruel' 6.56.1, 6.57.2, *ukha-(cchid)* '(lame) in the hip' 4.19.9 occur in early Ṛgvedic. These words can, however, no longer be explained as Dravidian:

karambha 'gruel' CDIAL 14358, no longer in DEDR; Kuiper 1955: 151 Drav. etym. is 'doubtful', EWA I 310 'unclear'; Kuiper 1991: 51 sqq. compares loan words with *-b-* > *-bh-* (Pkt. *karamba* 'gruel');

kulāy-in 'nest-like' 6.15.16, cf. *kulāyavat-* 7.50.1; from Drav. CDIAL 3340, cf. DEDR 1884 Tam. *kuṭai*, DEDR 1883 Tel. *gūḍa* 'basket', but the word formation is unclear; further Drav. *-*ḍ*- > Ved. *-l-*?; EWA I 373 'not clear', comparing N.Pers *kunāṃ*, East Baluchi *kuδām* < *kudāman*, with the same problems; 'foreign word' Kuiper 1991: 14.

ukha 'pan, hip' in *ukha-chid* 'breaking the hip, lame' 4.19.9, cf. MS 4, p. 4.9 *ukhā́* (dual) 'hips'; DEDR 564 'particular part of upper leg' : *ukkam* 'waist' Tulu *okka* 'hip'; for sound change Drav. *k*: Ved. *kh*, s. Kuiper 1991: 36, cf. 1995: 243; however, EWA I 210 compares Latin *auxilla* 'small pot', Latin *aulla* 'pot' (Pokorny 88), yet declares 'not sufficiently explained'. As RV 4.19 is not seen as a late hymn, this might be the oldest Drav. loan in Vedic (RV I).

Only cases in the middle and late RV remain: In the early RV (2,4,5,6) possible Drav. words are found only in some additional, late hymns (insertion after the initial collection of the RV, c. 1200 BCE, s. Witzel 1995):

- *-phala* 4.57.6 'fruit' DEDR 4004, Tam. *paḻu* 'to ripen', *paḻam* 'ripe fruit', etc., see Zvelebil 1990: 78 with literature, Parpola 1994: 168; CDIAL 9051, 9057; EWA II 201 doubts Drav. origin, and derives it from IA *phal/r* 'to coagulate, condense', but finds 'origin of IA **p^hal/p^har* not explained'; that means, a Middle RV loan from Drav. remains possible, or from Munda: Sant. *piṭiri* 'swelling of glands as in mumps', Sora *pēl* 'to swell, grow in bulk (seeds)'; Kuiper 1948, 163, compares Kharia *poṭki* 'to sprout', *potri* 'pregnant', etc., cf. 1955: 144, 158, 183; Pinnow 1959:173, § 378.
- *phāla* 'plough share' 4.57.8, Turner, CDIAL 9072, connects *phalati*, Iran. **spāra*, and thinks that it has been influenced later on by Drav./Munda; not in DED(R); EWA compares N.Pers. *supār*, Pashto *spāra*, Iškašmi *uspir* < **spa/ārya*?
- *-piṇḍa* 6.47.23 'ball, dumpling'; the many divergent NIA forms speak for a loan word, see CDIAL 8168 and add.; Drav., Burrow 1946: 23; Munda, Kuiper 1948: 142, 162, cf. 1991: 14; DEDR 4162 Tam. *piṇṭi*, Konda *piṇḍi* etc. 'flour'? — EWA II 128 'unexplained'; cf. also K. Hoffmann, Diss. 1941: 380 sqq. and perhaps Armenian *pind* 'compact, firm' < Iran. (< Ved.?)

In middle RV (3,7,8):

- *kuṇāru* 3.30.8 'lame in the arm?', or name of a person, see EWA I 362 'unclear'; however, compare

Drav.: Kan. *kuṇṭa* 'cripple', Mal. *kuṇṭan* 'cripple', etc., CDIAL 3259-60, DEDR 1688

• *mayūra* 3.45.1 DEDR 4642, 'peacock' PS, *mayūrī* RV 1.191.14, *mayūra-roman* RV 3.45.1, *mayūra-śepya* RV 8.1.25; generally regarded as Drav.: DEDR 4642 Tam. *maññai*, *mayil*; northern Kasaba dialect of Irula *muyiru*, Tulu *mairu*, Konda *mrīlu*, *miril*, (**mayil/mayir*, see Zvelebil 1990: 77, with discussion and lit.). However, originally from Munda: PMunda **mara'* 'crier', Kharia *mara'*, Santali, Mundari, Ho *mara'*, Kurku *mara*, Sora *mārān* 'peacock, Pavo cristatus', see Pinnow 1959: 205 § 90; cf. also Skt. *marūka* (lex.) 'peacock, deer, frog, Curcuma Zerumbet', and Khotanese Saka *murāsa* 'peacock' (EWA II 317, KEWA II 587, CDIAL 9865, add. 9865, DEDR 4642, Bagchi 1929: 131, Southworth 1979: 191 sqq., 200, cf. Zvelebil 1990: 77, Hock 1975: 86). The rare tribal name *Mara-ṭa* PS 5.2.1, 12.2.1 (Witzel 1999) belongs here; the *Maraṭa* probably lived south of the Ganges and north of the Vindhya.

The above may indicate that the Dravida entered into contact with some groups of Munda speakers fairly early (before the Middle RV); however, just as in the Vedic case, one or two intervening language(s) (**mayil* / **mayur*) must delivered the word to Drav. and Vedic, for example the "Language X" or a Northern and Southern Indus language; in the south, this must have occurred before Sindh was practically deserted in the post-Indus phase (Allchin 1995: 31 sqq.). The Ved. form *mayūra* may have been influenced by *māyu* 'bleating'.

• *phala* 3.45.4 see above

• *kāṇa* 7.50.1 'one-eyed' EWA I 336 'unclear'; cf. Avest. *karəna* 'deaf' : *karəna* 'ear' and cf. DEDR 1159 Tam. *kaṇ* 'eye' and DEDR 1443 *kāṇ* 'to see', both now without reference to Skt.; Zvelebil 1990: 79 compares DEDR 1159 and finds, 'rather speculative', the Drav. negative suffix *-a/-ā*; cf. Kuiper 1991: 79. — However, cf. Burushaski *śon*, *śōn* 'blind' (see above, with northwestern interchange of Ved. *ś/k*, Witzel 1999); note also that *kāṇa* is found as hapax RV 10.155.1 next to 'mountain', a 'foreign' name and an onomatopoetic: *giriṃ gaccha*, *Śirimbiṭha*, *budbud-* (cf. Santali *buḍu'c buḍu'c* 'to bubble up').

• *kulpha* 7.50.2 'ankle', CDIAL 4216, from Drav.; cf. DEDR 1829 *kuḷampu* 'hoof'?; EWA I 376 'completely unclear', Kuiper 1955:148 loan word because of AV *gulpha* and points (1991: 35) to variant forms in Ved. (*gulpha*) and MIA (*gopphaka*, *guppha*, *goṃpha*).

• *daṇḍa* 7.33.6 (late hymn) 'stick', DEDR 3048 Mal. *taṇṭa* 'forearm, arm', Tel. *daṇḍa*, etc., cf. DEDR 3051, CDIAL 6128; Munda, Kuiper 1948: 76: Sant. *ḍaṇṭa* 'thick stick, club', *ḍa(ṇ)ṭiṭit* 'stem (of mushrooms)', *ḍaṇḍi* 'stick, staff, stalk', cf. Mundari *ḍāṇḍi* 'small stick'; EWA I 691 'not explained'

• *kuṇḍa-* 'vessel' 8.17.13 can be compared with Avest. *kunda/-ī*, *kundiśā*, the name of demons ('pot-bellied'); Dravid., DEDR 1669 Tam. *kuṭṭam* 'deepness, pond', Tel. *kuṇṭa*, *kuṇḍu*, Kur. *xoṇḍxā* etc., DEDR 2082; Kuiper 1948: 76 Drav., 1991:14 'foreign'; CDIAL 3265; EWA I 363 points to the difference in meaning between Drav. and Ved. and concludes 'unclear, perhaps loan word'

• *mayūra* 8.1.25, see above

• *naḷa* 8.1.33 'reed', *naḍa/nala/nada*, EWA II 7 from IIr. **nada* (Nuristani *nō* < **nada*, Parth. *nad* 'flute', N.Pers. *nāy* 'flute') < IE **nedo* (Hitt. *nata* 'reed', Armenian *net*), however without actual explanation of the variation **d* > *ḍ*; DEDR 3610 compares, strangely, Tam. *nal* 'good' with the Skt. name *Nala*, idem Zvelebil 1990: 82; however, *Nala* is found in Vedic, ŚB 2.3.2.1–2 as *Naḍa Naiṣidha*, and in Mbh. as *Nala Naiṣadha*, the king of the (probable) Munda tribe of the

Niṣidha/Niṣadha = Ved. *Niṣāda* (MS, VS, see below); cf. Kuiper 1991: 33 on *ḍ/d*, and p. 19 *nāḷī* 10.135.7 'flute, pipe' (cf. 1948: 82).
• *kāṇuka* 8.77.4; (poet: Kurusuti Kāṇva) next to *saras* 'pond'; unclear in meaning and etym., EWA I 336; Kuiper 1991 as foreign.

In late RV (1, 10):
• *ulūkhala* 1.28 'mortar' DEDR 672 Tam. *ulukkai*, Kan. *olake*, Koḍagu *oḷake*, and Kota *oḷka*, *oḷkal kal* '(stone) mortar', Malto *loṟa* 'stone to grind spices' (S. Palaniappan, by letter); EWA I 231 'problematic'; cf. Zvelebil 1990: 79 with lit., Kuiper 1991: 14, 41 'still unexplained', compares loan words with prefix *u-*; any connection with *khala* 'threshing floor' RV 10.48.7?
• *vriś* 1.144.5 'finger', DEDR 5409 Tam. *viral*, Go. *wirinj*, now without reference to Skt. *vriś*; EWA II 597 from IA **vreś* 'to bend', Avest. *uruuvaēs* 'to bend, curve'
• bila 1.11.5, 1.32.11 'hole, cave' CDIAL 9245 'Dravid.'; DED 4459 = DEDR 5432 now without reference to Skt., cf. also DEDR 4194; Kuiper 1991:14 'foreign', EWA II 225 'not clear'
• *a-phalā* 10.71.5 'without fruit', see above;
• *phal-inī* 10.97.15 'having fruits', see above;
• *mayūra* 1.191.14, see above;
• *piṇḍa* 1.162.19, see above
• *kūṭa* 10.102.4 'hammer' DEDR 1651, 1655, 1883, app. 29; previously explained by Burrow as Drav., later explained by him as IE (German *hau*-en), but see EWA I 384 'unclear'
• *phāla* 10.117.7 'plough share', see above
• *phala* 10.146.5 'fruit', see above
• *kāṇa* 10.155.1, see above
• *kaṭu(ka)* 10.85.34 'pungent'; CDIAL compares *khaṭṭa* 'pungent'; EWA I 290 Lithuanian *kartùs* 'bitter'? or DEDR 1135 Tam. *katu* 'to pain; pungent; cruel, harsh, bitterness', Kurukh *xaṟxa* 'bitter', Malto *qaṟqe* 'bitter', Brahui *xarēn* 'bitter' etc.

Finally, *bala* RV 1,3,5,6,7,9,10 'strength, force'; EWA compares Latin *de-bilis* etc., IE **belo-*, which is otherwise not found in IIr. (perhaps in Osset./Sarmatian); see, however, Kuiper 1990: 90 on the rare IE (initial) *b-*, and on the impossibility of an IE etymology; cf. CDIAL 9161; now, against Drav. origin Burrow, see EWA II 215; cf., nevertheless, DEDR 5276 Tam. *val* 'strong', Kurukh *balē* 'with the help of', Brahui *balun* 'big'.

The same is the case with some words that have later on been added and discussed (Sanskrit Index of the DEDR, p. 759–763) and elsewhere. Most of them are too late in attestation to be of interest here. In DEDR we find:

Early RV: *phalgu* 'minute weak' 4.5.14, *kalaśa* 'vessel' 4.27.5, 6.69.2, 3.32.15, 7.69.6; and later: *taḍit* 'flash' 2.23.9 (late addition), 1.94.7 *phāla* 'plough share' 4.57.8 (late); — middle RV: *ukhā* 3.53 'pan, hip' (late addition), *kavaṣa* 'straddle legged', a personal name 7.18.12, *kūla* 'slope, bank' 8.47.11. — late RV: *ukhā* 'pan, hip' 1.162.13,15; *khala* 'treshing floor' 10.48.7. Of these, only *phalgu* 'minute weak' (RV 4) remains as a possible early loan into IA, if it indeed belongs to DEDR 4562, Tam. *pollu* 'empty husk of grain'. Again, all other words regarded as Dravidian appear only in the *middle* and especially in the in *later* RV.

Southworth (1990, 1995) adds the following examples of early contact between Drav. and Indo-Ar., however, without ordering the texts historically.

• *car-*, *carati* RV : Tamil *cel* 'to go, flow, pass, be suitable' (already Perunkuṉṟūr Kilāṟ, c. 160-200 CE (Zvelebil); DEDR 2781 "probably from IA", CDIAL 4715; the word is IA, derived without problems from IE **kwel(h)*; perhaps accidental agreement with Drav. *cel.*

• *māyā* 'confusion, wonderment, awe' RV (found in all of RV, just as *māy-in*, *māyā-vat*, *māyā-vin*), = Avest. *māiiā* 'awful power' :: Tam. *maya-* 'mistake, misunderstand'; *mayakku-* 'bewilder, confuse, intoxicate, alcohol' etc.; DEDR 4706 without comparison with Skt.; the Skt. and Drav. meanings do not agree; also, because attested that early in the RV and Iran., Drav. origin (only Middle-RV Drav. influence!) is unlikely — unless it would have taken place in Iran (Southworth 1979: 196f.: "high degree of contact ... at the earliest period for which we have records and possibly before"); however, see below, on *tanū.*

Southworth 1979: 203, 228 f., 1990: 222–3, 1995 reconstructs as further indication of early contact between Drav. and Indo-Ar. in Iran, a word **tanu* 'self', Tamil *tāṉ/taṉ* 'oneself', *tanū* RV 'body, self/oneself', for this meaning see now J. R. Gardner, PhD diss., U. of Iowa 1998. The variation in vowel length in the Drav. pronoun (Tam. *tāṉ/taṉ* 'oneself') is old (Krishnamurti 1968). However, next to the RV instances, there is Avest. *tanū* 'body, self', O.Pers. *tanū* 'body', all have no clear IE etymology. Pokorny 1959: 1065, 1069 derives them from IE **ten* 'to stretch', in other IE languages the meaning mostly is 'thin'; EWA II 622 connects *tan-ū* '*Ausdehnung, ausgespannte Hülle' with *tan.*

The comparison of the IIr. and Drav. words would presuppose a very close relationship between Drav. and (pre-)Indo-Ar. tribes indeed, as pronouns are not taken over easily. Such early Drav.-IA relationships are not found otherwise: there are no early loans in designations of material culture, e.g. pastoralist terms in Vedic/Drav.: horse: *aśva* : *ivuḷi*, *kutira*, cow: *gau-* : *ā(ṉ)*, sheep: *avi* : *(y)āṭu*, *koṟi*, goat : *aja* : *(y)āṭu*, *koṟi*, dog: *śvan* : *nāy*, *nāi.* This would rather point against a neighborly relationship of both languages in any pre-South Asian context.

• *garda-bha* 'donkey' RV, late, only 1.23.5, in the appendix hymn 3.53.23 next to *rāsa-bha* 'donkey'!, RV Vālakhilya 8.56.3 :: Tam. *kaḻutai*, Gondi *gāṟ̥di*, etc., to which DEDR 1364 compares Skt. *gardabha*; CDIAL 4054; EWA I 473 cf. *gard* 'to cry shout', not from Drav.

• *piśāca*, *piśācī* AV, *piśāci-* 'demon' RV, late: 1.133.5 :: Tam. *pēy-* 'devil, goblin, madness' DEDR 4468, without comparison with Skt., and without suffixing *-śāci-*, only: *pēytti*, *pēycci, pēcci* 'demoness'.

• *śava* (not in RV, diff. Southworth 1979: 197), only PS+ : Tam. *cā-* 'to die' (Kural), Ko. *ca-v-* 'corpse' DEDR 2426 compares Skt. *śava*; EWA II derives *śava* from *śav* 'to swell' AVP; CDIAL 12356 not from Drav. As the word is early in Drav., perhaps accidental look-alike.

• *paṭhati* 'to recite' RVKh., TĀ, Up. : Tam. *pāṭu* 'sing, chant', *pāṭṭu* 'song', attested already in Perunkuṉṟūr Kilāṟ, DEDR 4065 without reference to IA; EWA II 69; CDIAL 7712 < **pr̥thati*; Drav. ← Indo-Ar., Burrow-Emeneau 1962: 46, no. 242. Rather to be derived from MIA pupil's slang Ved. *prath* 'to spread out (a text, in recitation)'?; compare the frequent loan words in the context of Vedic teaching and learning: *maṇḍala, kaṇḍa*, *kāṇḍa*, *prapāṭhaka*, *paṭala*, *daṇḍa*, MIA: *orimikā* 'a section of KS' etc.

• *nagara* 'town' TĀ, but cf. already *nagar-in* JB :: Tam. *nakar* 'house abode, town, city'; cf. EWA II 5, CDIAL 6924; DEDR 3568 IA → Tam. *nakar* 'house, town, etc.' But why *nakar* from Skt.? There is no IA etymon, nor is there one in Drav. and Munda. Drav. for settlements:

DEDR 3568 *nakar* 'house, town', 1655 *kuṭi* 'home', 3868 *paṭṭi* 'cow stall, village', 5393 *viṭu(ti)* 'temporal residence', 2007 *cēri* 'street, village', 752 *ūr* 'village', 4362 *pūṇṭi* 'town, village', 4047 *pākkam* 'seaside village', 4646 *maṭappam* 'agricultural town', 807 *eyil* 'fortress'; 4064 *pāṭi* 'town', 4112 *pā<u>l</u>i* 'temple, town', 4555 Kan. *po<u>l</u>al* 'town', 5549 *vai*, 3911 *pati*, 2814 *cēr*; 3638 *nāṭu* 'open country' (opp. *nakaram*); — cf. also Skt. *haṭṭa* 'market' ~ Santali, Mundari, Ho *hatu*, Korwa *watu* < PMunda **watu* Pinnow 1959: 79 § 69. — In short, the word may be a loan from the southern Indus language or one from the Malwa area.

Thus, the words added by Southworth are post-R̥gvedic (*śava*, *paṭhati*, *nagara*), or they are attested in relatively late RV sections (*gardabha*, *piśāci*), or they are of dubious nature (*car*, *māyā*, *tanū*). Therefore, it is not possible to suppose, with Southworth, an *early* close contact, *even in Iran*, and on all levels of society, of Dravidas and Indo-Aryans. Rather, one has to agree with Kuiper, who stresses the very hesitant acceptance of non-Indo-Aryan words and forms in the high level, poetic language of the RV. The words collected by Southworth in his second list (not discussed here) can have been taken over into Drav. at *any* time after the RV, e.g. *accu* 'axle' < *akṣa* RV.

Furthermore, most of the c. 800 words in the list provided by DEDR, p. 759–764 are attested only in the Epics or in class. Skt. Of the c. 61 words listed in the appendix of DEDR which are supposed to come from Indo-Aryan, only a few can be regarded as (possible) early loans; they all should be checked in early Tamil before something that even approaches a final decision can be made.

Finally, among the words in Zvelebil's recent list (1990: 77–82) of 22 "early" Drav. loans into Skt., most have already been discussed above; yet, none of them nor the ones newly mentioned are R̥gvedic: 8. *bilva* 'Aegle marmelos, Bel tree' AV, 10. *kuṇapa* 'corpse' AV, 11. *kurkura* 'dog' AV, 12. *arka* 'Calatropis gigantea', ŚB, 12a. *candana* 'sandal wood, paste' Nirukta, 13. *kavaca* 'armor' PS, ŚB, *kavacin* AV, 13a. *jaṭā* 'matted hair' GS, 13b. *mālā* 'flower necklace', GS, *mālya* RVKh, 13c. *eḍa* 'sheep' KŚS, *eḍaka* JB, *aiḍaka* ŚB. The rest of the words are only post-Vedic.

Zvelebil's summary is: "as Emeneau (1971) writes, 'We end, then with a small, but precious handful of Vedic forms for which Dr. etymologies are certain and acceptable as may be expected in this field of areal linguistics, adding, though that no chronology of the borrowings is possible" (Zvelebil 1990: 81; similarly Parpola 1994: 168.) According to what has been said above, this has to be modified drastically: R̥gvedic loans from Drav. are visible, but they also are now datable *only* to middle and late R̥gvedic (in the Greater Panjab), and they can both the localized *and* dated for the Post-R̥gvedic texts (Witzel 1987, 1989).

Of all the words mentioned so far that have been regarded as Drav., only the following few are possible for the early RV :

> *ukha[-chid]* 'hip[-breaking]' 4.19.9; phalgu 'minute weak' 4.5.14, *āṇi* 'lynch pin' 5.43.8, (whose ultimate source is unclear, and, very tentatively, *bala* 'force' 5.57.6, 5.30.9, probably from IE, cf. Latin *de-bilis*).

Whether this is enough to ensure the presence of (even a small number of) speakers of Dravidian in the Panjab during early RV times may remain in the balance. From the middle RV come: *kavaṣa* 'straddle legged', (a personal name) 7.18.12, *kūla* 'slope, bank' 8.47.11 and perhaps also *kuṇḍa* 'vessel' 8.17.13.

Consequently, if more of the middle and late RV words mentioned above are accepted as Drav. and even if some of the words *excluded* above for the early RV should be accepted, this would not change the general picture: There is *very* little Dravidian, but there are about 300 words of the Indus substrate. For it *cannot* be said, conversely, that there were, during the older and middle RV, clear indications (or: "a precious handful", Zvelebil, Emeneau) of a strong Drav. substrate in the Panjab. At best, one can speak of a few very isolated cases which have been taken over into the RV; clearly this indicates an adstrate rather than a substrate.

This result is important for the time of the immigration of speakers of Dravidian into the Panjab and it specifically underlines that the Indo-Aryans *did not at once* get into contact with speakers of Drav. but only much later, when the tribes speaking IA were already living in the Panjab and on the Sarasvatī and Yamunā. Apparently, Dravidian speakers began influencing the Panjab *only at this moment in time* (cf. Allchin 1995: 31 sqq., see above). *Consequently, all linguistic and cultural deliberations based on the early presence of the Drav. in the area of speakers of IA, are void* or they have to be reinvestigated.

It cannot be argued that the immigration of the Dravidians into the Panjab should have taken place *earlier* than discussed above, for the simple reason that Drav. words do not exist in that early period; the same is the case if only the upper class such as traders (cf. *vaṇij* 'trader?' RV 1.112.11, 5.45.6, AV, *(pra-)vāṇa* 'trade?' 4.24.9, see Kuiper 1955: 168) and administrators of the Indus Civilization was composed of Dravidian speakers (Parpola 1994, Fairservis in: Southworth, 1979: 208, 228; contra, Hock 1975: 87f., cf. Southworth 1992: 663), and that in consequence, the Indus inscriptions should be read as Dravidian. In this case, one would expect, after some 400–700 years of the flourishing of the Indus civilization, cases of bilingualism. Conseqently, much more Drav. influence should have been retained than visible in the few (late) words found in the c. 380 'foreign' words. One would expect at least a few important loan words from the fields of trade, handicraft or state organization (at least, from the post-Indus, village level type cultures). This, again, *is not* the case. *Paṇi* '(rich) foreigner, demon' cannot be connected with 'trader' inside the RV, and *paṇ* 'to barter' appears first only in (post-R̥gvedic) KS, *pra-paṇa* 'trade' AV, *prati-paṇa* 'exchange' (see EWA II 69; DEDR 3884 does not help: *paṇ* 'work, service', *paṇikkaṉ* 'carpenter'; cf. Kuiper 1955: 168, on *vāṇa*, *vaṇij.*). In addition, there are not many designations of RV artisans, except for IA *takṣan* 'carpenter', etc. (see below). Even if Drav. had been the traders' language, one would be at loss to answer the question why Drav. influence is only seen in the middle and late RV as well as later one (AV+).

Summing up, *early* Dravidian influence in the Panjab can be excluded, but must be *explained* for the following middle and later RV periods. This is best done by the scenario mentioned above: middle and later RV immigration of Drav. speakers from Sindh. Incidentally, it must be noted that in *all* of the RV, there are no typical Drav. words for agriculture which should be expected if the Indus people of the Panjab had been speakers of Dravidian. This agrees with the reconstruction of Fairservis (1995), Southworth (1979, 1988, 1990: 663, and McAlpin (1979) of early Dravidian: an originally pastoral society that acquired agriculture only in South Asia. All of this indicates that we have to take a closer look at the regions bordering the Panjab in the South, especially Sindh.

§ 1.7. Greater Sindh

In contrast to the clear picture of the Panjab in R̥gvedic times, the situation in Greater Sindh is much more vague and the following results must remain tentative. The RV does not mention this area as such, yet there are some indications that Sindh and neighboring Baluchistan were known. First of all, the *Bhalānas* tribe took part in the Ten Kings' Battle (RV 7.18) that settled the suzerainty of the Bharata chieftain over the Panjab tribes. The *Bhalānas* are identified with the *Bolān* pass and river near Quetta in Baluchistan. Unfortunately, southern local rivers are not mentioned anywhere in the RV south of the Gomatī (Gomal River).

However, data from RV book 8 may supplement our scanty information. Book 8 has long been connected with Eastern Iran: K. Hoffmann (1940 = 1975: 1 sqq.) has pointed to Iranian looking names such as *Kaśu* ~ Avest. *Kasu-* (EWA I 330), *kaśu Caidya* 8.5.37, *Kanīta* ~ Scythian *Kanitēs,* cf. further *Tirindira* 8.6.46 ~ *Tiridatēs* ~ Avest. *Tīrō.nakaϑβa*, *Kr̥śa* 8.59.3 ~ *Kərəsāspa*, *Parśu* 8.6.46 ~ O.Pers. *Pārsa* 'Persian', *Paktha* RV 8.22.10 (mod. Pashto, Paktho), *Varo Suṣāman* 8.60.18 (with unusual Sandhi), *Arśasāna* 8.12.9, 2.20.6, etc., *Anarśani* 8.32.2 ~ Iran. *əršan-*? All such names, if Iranian, belong to pre-Iranian tribes that spoke a dialect close to the one that later developed to E. Iranian (cf. the similar case of the Mitanni-Aryans, below). Book 8 also knows of camels (*uṣṭra* 8.4.21–24, 31, 46–48, O. Iran. *uštra*, as in Zaraϑ-*uštra*), that are first attested archaeologically in S. Asia in the Bolān area, at Pirak, c.1700 BCE.

Now, apart from RV 3 and 7, Drav. words occur first in the Middle RV book 8, more specifically in its Kāṇva section (RV 8.1–48, and 8.49–59, 60–66); they include *kuṇḍa-* 8.17.13, *mayūra* 8.1.25, *naḍa/naḷa* 8.1.33 (see above); note also the many words in RV 8 with retroflexes (Kuiper 1991: 17, Hoffmann 1941, 1975:16, Kuiper 1967: 84 n. 18, 86 n. 26).

If one locates at least the Kāṇva sections of book 8 in East Iranian lands, that is in (S.W.) Afghanistan and Baluchistan, one can also adduce the very name of this clan of poets. K. Hoffmann (and I) have connected the name with *kr̥* 'to act magically, to do sorcery' (Hoffmann 1975: 1 sqq., Witzel 1983–5). Kuiper (1991: 80) has correctly objected there also is *Pra-skaṇva*, with the common Indus prefix *pra-* *[*pər-*] (contra, with insufficient reasons, Oberlies 1994: 341). This *may* mean that the Indus language extended to Eastern Iran, especially to the area west of Sindh, to Baluchistan, and to Makran with its many Indus settlements. Book 8 would then represent an amalgam of Dravidian and Para-Munda influences (including some pre-Iranian?)

Dravidian influence in Middle R̥gvedic (the time of king Sudās) can be traced back, with some probability, to the areas from Arachosia to Sindh as well. It is here that Drav. place names are assumed to appear first (cf. L.V. Ramaswamy Iyer 1929-30). These names (showing MIA development $p > v$) extend from Sindh via Gujarat and Maharastra to the South: Sindhi *-vali*, Gujarati *-wārī/warī* (Sankalia 1949), Mar. *-oli*, all from a Drav. word for 'village' (Tam. *paḻḻi* 'hamlet', Kan. *paḷḷi*, *haḷḷi*, Tel. *palli* 'village', Kur. *pallī* DEDR 4018, CDIAL 7972, see Parpola 1984, 1994: 170 sqq., 1997; Southworth 1995: 271, see further, below; — Panjabi *-wālā*, *wālī* rather looks like the common Hindi etc. suffix, as in *jāne-wālā*, *petrol pump-walla*, etc.).

A similar view has been proposed, on the basis of linguistic and archaeological observations, by Zvelebil (1972, 1990: 48, 123), Southworth and McAlpin,[3] and Fairservis (1992: 17, 21). It has to be underlined, however, that McAlpin's reconstruction of an Elamo-Dravidian language family

[3]McAlpin 1981 is based on the lexico-statistic calculation of P. Gardner 1980; he distinguishes:

has not been accepted by Dravidologists. Fairservis and Zvelebil think of an immigration by Drav. speaking tribes at c. 4000/3500 BCE, from the mountainous lands of East Iran into the Indus valley. Both underline data that characterize the Dravida as originally pastoral hill tribes.

In sum, we may reckon with early Drav. pastoralists (Fairservis 1992, 1997) in Baluchistan and later on, after a period of acculturation with the Indus people, we may encounter Drav. farmers (Southworth 1979, 1990, 1995) who practiced intensive rice (Kenoyer 1998: 178, Jarrige 1985) and millet cultivation in Sindh.

§ 1.8. The languages of Sindh

In addition to these western (Dravidian, pre-Iranian) elements there also are local 'Sindh' ones. First of all, it is precisely in this area that rice was first introduced into the Indus civilization. It occurs first as *odana* 'rice gruel' in the (partly E. Iranian) *Kaṇva* book (RV 8) in the Emuṣa myth, which clearly smacks of 'foreign' origin: RV 8.69.14, 8.77.6–11, 8.77.10, (cf. also 8.96.2, 1.61.7; summary and discussion by Kuiper 1991: 16 sqq.) He had explained it earlier on (1950) as Austro-Asiatic, but is more cautious now (Kuiper 1991: 18f., cf. below). On closer observation, we can notice a mixture of an IA, Austro-Asiatic and possibly Drav. myth.

Kuiper (1991) now shows that the Kaṇvas, non-IA local sorcerers, introduced this myth into the RV. At any rate, the motif is unusual for the RV. Its hero is a divine bow shooter (probably seen on an Indus copper plate, only at Mohenjo Daro, in Sindh, Parpola 1997: 39; cf. also Avesta, Yt. 8.6,37 *ərəxša*, Kr̥śānu RV 4.27.3, Rudra, and Murukan in S. India; for 'bow' see KS *dālbhūṣī*, MS *drumbhūlī*; with PDrav -ṛ- > [l̠] / [z̤], Kuiper 1991: 26). This bow shooter splits a mountain, finds the *odana* rice gruel and kills the boar *Emuṣa*. The myth is an imitation of the well known R̥gvedic Vala myth (splitting the mountain cave containing the cows/dawns), but is otherwise completely alien to the RV.

Now, the suffix *-uṣa* (Kuiper 1991) of *Emuṣa* clearly indicates a name taken from the (Para-Munda) Indus language. This points to a *late* myth (because a latecomer, rice, is important), adopted from the local southern or southwestern Indus region and from beyond.[4] Second, the word for 'rice' occurs in a Sindh and a Panjab variety (see below). The Sindh version, closer to Dravidian, has been transmitted further west, along the southern trading route to Fars and has entered western languages from there (Greek *oryza*).

Whether rice was otherwise known to the R̥gveda is doubtful. Rice was introduced towards the end of the Indus civilization in its southern areas, in Sindh (Kenoyer 1998: 178, in Pirak, along with newly introduced sorghum and millet, and also horse, donkey, camel). In this case, we have again to reckon with a (West-)Munda word: *odana* is connected with *oḍi(kā)* 'wild rice'

Proto-Drav.: South Drav./Central Drav. — Brahui 4100–3000 BC
PDr-1 : SDr/CDr – Kurukh-Malto 2800–1900 BC
PDr-2 : SDr – CDr (Kolami, Naiki, Parji) 1500–1100 BC
PDr-3 : SDr I – SDr II (Tamil, Telugu) 1000–900 BC.

[4] It has to be observed that the boar does not play a role in the Indus civilization: "apparently not domesticated, not used in Indus economy" Kenoyer 1998: 165; this rather seems to be an eastern phenomenon (thus Munda?); cf. below Munda and Sino-Tib. 'pig' and cf. the ancient boar cult on the Nicobar Islands.

(lex., CDIAL 2546) and Santali *hoṛo*, *huṛu* 'rice plant' (EWA I 280) and explained as Munda loan (Berger 1963: 420, Kuiper 1950: 179; but cf. Zide and Zide 1973: 8–9 on Mundari *kode*, Kharia *kuḍa* 'millet, ragi'). Together with the introduction of rice its charter myth (Malinowski) may have been taken over as well. As has been mentioned, the Dravidians originally had neither a word for 'rice' nor for the staple food of the Indus civilization, wheat.

In sum, it can be said that we may have to reckon with a combination of several factors in the southern Indus area: with the (Para-Munda) Indus language, with some more eastern Munda influences, with immigration from E. Iran in the person of Vasiṣṭha (RV 7) and of (pre-)Old Iranian tribes into Baluchistan and the neighboring Kachi plain of the Indus valley (e.g. at Pirak, 1700 BCE), and with Dravidian immigration.

As mentioned above, Zvelebil (1970, 1990) is of the opinion that the Dravida entered South Asia from the Iranian highlands. Their oldest vocabulary (Southworth & McAlpin) is that of a semi-nomadic, pastoral group, not of an agricultural community. They are thus not expected to have their own word for 'wheat'. Wheat, however, was the staple of the Indus civilization, and was called in Dravidian by an adaptation of a local word: **gō-di* 'low red plant' (Southworth 1988, 1979, 1990) which is quite different from the Panjab word **go-dum* > Vedic *godhūma* 'cow smoke' (details below). If the Dravidians acquired agriculture only in the hills bordering S. Asia, they may very well have been inhabitants of Baluchistan at the time. At any rate, neighboring Sindh, just as Gujarat and Maharastra, show place names that are explainable from Dravidian **paḷḷi* (see above). Then, according to archaeology, a large section of the population of Sindh left this area towards the end of the Indus period. They moved further east, to Gujarat, where we find a late, local phase of the Indus civilization (Rangpur phase IIb, IIc, see Allchin 1995: 32 sqq., Kenoyer 1998: 173 sqq.), and, again, Drav. place names.

It is indeed possible that the Dravida constituted a first wave of central Asian tribes that came to Iran before the IA, just as the Kassites came to Mesopotamia before the Mitanni-IA. In that case they knew the horse already in Central Asia, but would not have taken it over directly from the Indo-Iranians (as may be indicated by Brahui *(h)ullī*, O.Tam. *ivuḷi* 'horse', etc., different from IIr. *aćva*). In other respects as well, they have not been influenced by the Indo-Iranians.

One can even assume that the early testimony of the introduction of horse and camel from the Iranian plateau into Sindh (Pirak and Kachi plain in western Sindh) is due to the Dravida (c. 1700 BCE, Kenoyer 1998: 178; Allchin 1995: 31). In that case, it must be investigated why they apparently did not preserve a word for 'camel'. In this fashion, that is through the mediation of the Dravida in Sindh, Drav. **variñci* 'rice' must have reached Iran (> M.Pers. *brinj*), that is not, as otherwise common, via the northwestern Khaiber Pass, as in this region another form of the word is found, with **vrijhi* > Pashto *wrizē*, etc. (see below).

This may mean, on the one hand, that the Dravida themselves were immigrating at the time of the older RV, or that they only influenced the Panjab in the later, Middle Ṛgvedic period, coming from Sindh. This is perhaps supported by archaeological facts, for Sindh was practically deserted by its population in the post-Indus phase (Allchin 1995: 31 sqq.) It is from this Southern basis that they suddenly appear in mid-level RV, with names such as *Kavaṣa* 'straddle legged' (*K. Ailūṣa* RV), cf. *Śailūṣa* "dancer, singer" VS (EWA II 655, Kuiper 1991:20, 25, 42) which Kuiper 1991: 24 explains with reference to Dravidian: initial *c-* is often dropped in South(!) Dravidian; further examples in RV are : *Śirimbīṭha* : *Irimbiṭhi* EWA II 639, cf. also *śiriṇā* 'hiding place, night?' : *irīṇa* 'salt pan, hiding place (for gambling)' (Witzel 1999).

Ailūṣa is important, as it was this poet who was an important priest on the side of the opponents of the Bharata. (These opponents included the Bhalānas). His great-grandson Tura Kāvaṣeya, however, is an important priest of the Kuru realm that succeeded the Bharata 'kingdom'; he developed the Agnicayana ritual (Th. Proferes, Harvard Ph.D. thesis 1999). This case shows the inclusion of a Dravidian into the fold, and underlines the important role a new 'convert' to Ārya religion could play in its very development (that of the post-RV, classical Śrauta ritual, see Proferes). Further, he was not classified as Śūdra but obviously as a Brahmin who had learned to compose RV hymns in the traditional poetic IA language! All of this is indicative of a high degree of amalgamation and language acquisition at this time, during the middle and late Ṛgveda period (see below).

§ 1.9. The Southern Indus language: Meluhhan

However, there are indications that another language was prevalent in Sindh before the immigration of the Dravida. The trade of the Indus civilization with Sumeria and later Mesopotamia has left us a number of words that are not Dravidian. It is perhaps best to call this language "Meluhhan" after the name the Sumerians gave to the country, Meluḫḫa. Its language was also sufficiently different from Elamite or Sumerian to require a 'translator from Meluḫḫa' (Possehl 1996a: no. 2), whose name is *Šu-ilišu* (Parpola 1994: 132). In fact, "the language of Marhaši [Bampur area, just west of Iranian Baluchistan] is different from that of the Simaškians [Tepe Yahya in southern Central Iran], and only very partially Elamite-related." (Vallat 1985: 52). This indicates that there was a language boundary, somewhere to the west of the present Iran-Pakistan border, probably in a southwards prolongation of the Iran-Afghanistan border. Possehl identifies the area of Meluḫḫa (1996, 1997) as having a center in the hills and mountains of Baluchistan, closer to the population center of the early Indus civilization, which allows for a hypothetical identification of the Marhaši language with that of Meluḫḫa and makes a thorough investigation of the data of RV 8 (see § 1.7.) even more important. There are men with *Meluḫḫa* as a personal name, thus apparently 'the Meluḫḫan'; several persons, among them *Urkal* and *Ur-dlama*, are called 'the son of *Meluḫḫa*'. There also is a 'village of Meluḫ ḫa', from where a person called *Nin-ana* comes. The products of Meluḫḫa include *giš-ab-ba-me-lu-ḫḫ* (*abba* wood, a thorn tree), *mêsu* wood ('of the plains'), ships of Meluḫḫan style (*magilum* boat), (Possehl 1996a). In total, there are some 40 "Indian" words transmitted to ancient Mesopotamia, some of which may have been coined by Dilmun (Bahrain) traders. They include: Sindh wood *sinda* (*si-in-da-a*, *si-in-du*), date palm, the 'red dog of Meluḫḫa', *zaza* cattle (zebu?), elephants, etc. (cf. Landsberger, *Die Welt des Orients* 3. 261, Possehl 1996a). As coming from Dilmun (Bahrain) we may add the Meluhhan(?) trees *giš-ḫa-lu-ub* or *ḫaluppu* wood, *giš-mes-makan* or *mêsu* wood of Magan, and the *gišgišimmar* wood (cf. above **śimmal* in *śimbala*, *śalmali* 'Salmalia malabarica'!). A slightly later(?) loan-word relationship is seen in Sumer. *ili* 'sesame', Akkad. *ellu/ūlu* 'sesame oil', which is only found in South Drav. with *eḷ*, *eḷḷu* 'Sesamum indicum' (D. Bedigian 1985); the word can be compared, however, with Ved. *tila* and *jar-tila* 'sesame' which shows the typical Para-Munda prefix *Cər-* (cf. Kuiper 1955: 157 for a Munda origin). The ultimate source, ***(t)il*, however is unclear, cf. further, on Sumer. loan words, Blažek and Boisson 1992.

The word *meluḫḫa* is of special interest. It occurs as a verb in a different form (*mlecha-*) in Vedic only in ŚB 3.2.1, an eastern text of N. Bihar where it indicates 'to speak in barbarian fashion'. But it has a form closer to *Meluḫḫa* in Middle Indian (MIA): Pali, the church language of S. Buddhism which originated as a western N. Indian dialect (roughly, between Mathura, Gujarat and the Vindhya) has *milakkha*, *milakkhu*. Other forms, closer to ŚB mleccha are found in MIA **mliccha* > Sindhi *milis*, Panjabi *milech*, *malech*, Kashmiri *briċhun* 'weep, lament' (< **mrech-*, with the common *r/l* interchange of IA), W. Pahari *melɛ̄ċh* 'dirty'. It seems that, just as in other cases mentioned above, the original local form **m(e)luḫ* (i.e. *m(e)lukh* in IA pronunciation, cf. E. Iranian *bāxδī* 'Bactria' > AV **bahli-ka*, *balhi-ka*) was preserved only in the South (Gujarat? > Pali), while the North (Panjab, Kashmir, even ŚB and Bengal) has **mlecch*. The sound shift from *-ḫḫ-/-kh-* > *-cch-* is unexplained; it may have been modeled on similar correspondences in MIA (Skt. *akṣi* 'eye' ∼ MIA *akkhi*, *acchi*; *kṣetra* 'field' ∼ MIA *khetta*, *chetta*, etc.)

The meaning of Mleccha must have evolved from 'self-designation' > 'name of foreigners', cf. those of the Franks > Arab *Farinjī* 'foreigner.' Its introduction into Vedic must have begun in Meluḫḫa, in Baluchistan-Sindh, and have been transmitted for a long time in a non-literary level of IA as a nickname, before surfacing in E. North India in Middle/Late Vedic as *Mleccha*.[5]

Further examples of the Southern Indus (Sindh) language include the designations of plough, rice, wheat, and millet.

Plough

The old agricultural word *lāṅgala* 'plow' (RV, 4.57.4, a late hymn) is found, in a divergent form, in Tam. *ñāñcil*, *nāñcil*, Kan. *nēgal*, Gadba *nāngal* (DEDR 2907). Southworth (1988; 1979: 200, 205; 1995: 268, cf. Kuiper 1948: 127, 1955: 156, Przyludski *BSL* 24, 118 sqq., cf. Parpola 1994: 168) assumes a popular etymology PDrav. **ñān-kal*, **ñān-kel* 'earth stone' and traces the term back an Austro-Asiatic source, Munda **ña-kel*, *ñan-kel* (Zide & Zide 1973: 5), Santali *nahel*, Khasi *lynkor* [*lənkor*] < **lĕnkol*, Khmer *aṅkal*; cf. also the Austronesian forms, Malay *tengala*, Makassar *naṅkala* (Bagchi 1929, 9). V. Blažek and C. Boisson, (1992: 17–19) think of a Sumerian, and ultimately perhaps even Afro-Asiatic origin of this widespread word of culture: Sumer. *níĝ-gála*$_{x+l}$ or *níĝ-ĝál* 'sickle' (!) and Afro-As. **nigal* 'to reap; reaping sickle.'

However, the Munda words do *not* agree with Ved. *lāṅgala*, though one can easily assume dissimilation of *n-l*. The word underlying RV *lāṅgala* must have come from an intermediate language, in short, the Panjabi form of the Indus language (Para-Munda), with **laṅgal*. This form cannot have been that of the Southern Indus language (Meluhhan) as this has resulted in Drav. **ñānkal*,

[5] Pali *milāca* is influenced by a 'tribal' name, *Piśāca*, as is Sindhi *milindu*, *milidu* by Pulinda; the word has been further 'abbreviated' by avoiding the difficult cluster *ml-* : Prakrit *mecha*, *miccha*, Kashmiri *m ī̃ċ(h)*, Bengali *mech* (a Tib.-Burm tribe) and perhaps Pashai *mec ə* if not < **mēcca* 'defective' (Turner, CDIAL 10389. — Parpola 1994: 174 has attempted a Dravidian explanation. He understands *Meluḫ ḫa* (var. *Melaḫḫa*) as Drav. **Mēlakam* [*mēlaxam*] 'high country' (= Baluchistan) (=*Ta-milakam*) and points to Neo-Assyr. *baluḫ ḫu* 'galbanum', *sinda* 'wood from Sindh'. He traces *mlech*, *milakkha* back to **mlekṣ*, which is seen as agreeing, with central Drav. metathesis with **mlēxa* = *mēlaxa-m*. Kuiper 1991:24 indicates not infrequent elision of (Dravid.) *-a-* when taken over into Skt. — Shafer 1954 has a Tib-Burm. etymology **mltśe*; Southworth 1990: 223 reconstructs PDrav. 2 **muzi̤/mizi̤* 'say, speak, utter', DEDR 4989, *tamil̤* 'Tamil' < 'own speech'.

ñānkel. While the difference is small here (*g/k*, *n/l*), it is more substantial in other agricultural words.

Rice

The word for 'rice' shows a difference between a Northern form, approximately ***(ə)βərij*, versus a southern one, **vari*, *(v)ariki*, *variñci*. Note that this indicates the same difference in tenuis/media as met with in the word for 'plough':

N. **laṅgal*, **vəriji* :: S. **naṅkal*, **variñci/variki*.

Still another form exists in Proto-Munda **ə-rig*; it has provided Dravidian **(v)ari*, *variki* > Tam. *arici*, *ari*, Kan. *akki* (DEDR 215), and also Tam., Tel. *vari* (DEDR 6565).

Though rice is indigenous to S. Asia, the domesticated version can be traced back to S.E. Asia and S. China.[6] It has been found in India since the 3rd millennium BCE (Glover & Higham 1996, Kajale 1991), and appeared late in the southern Indus civilization, at Pirak c. 1700 BCE. However, it appears first (as *vrīhi*) only in post-RV texts (AV, c. 1200 BCE), though it probably was an ingredient in the RV offerings *puroḍāśa* 'rice cake' and *odana* 'rice gruel'. The older IA grain is only *yava* 'barley', but later on we have 7 or 10 agricultural products: in the Yajurveda Saṃhitās, the 'seven agricultural plants' (*saptá grāmyā́ óṣadhayaḥ*); ŚB 14,9,3,22 has even ten: *vrīhí* Oryza sativa L.; *yáva* Hordeum vulgare L. subsp. hexastichum (L.) Schinz et Kell.; *tíla* Sesamum indicum L.; *mā́ṣa* Phaseolus mungo L. var. radiatus = Phaseolus Roxburghii; *áṇu* Panicum miliaceum L.; *priiyáṅgu* Setaria italica (L.) Pal. Beauv. = Panicum italicum L.; *godhū́ma* Triticum aestivum = Triticum sativum Lam.; *masū́ra* Lens culinaris Medic. = Ervum lens L.; *khálva* Phaseolus radiatus L. a variety of Phaseolus mungo L. = *māṣa(?)*; *khalá-kula* Dolichos biflorus L. (W. Rau, in: Witzel 1997: 203–206).

Southworth (1979, 1988: 659–660) supposes an Elamo-Dravid. origin: **var* 'seed, grain', Elam. *bar* 'seed', PDrav (stage 1, c. 2000 BCE) **vari* 'rice grain'. (McAlpin 1981, Tyler 1968, Southworth 1988). Achaemenid Elam. *umi* 'grind (grain)', **um* 'to process grain', PDrav1 **um* 'husk, chaff' DEDR 637; (this should be compared with **gant-um-a*, *gandh-um-a*!). However, the Elamo-Drav. family has not been proven to the satisfaction of Dravidianists (McAlpin (*et al.*) 1975, Krishnamurti 1985, Zvelebil 1985), and the N. Drav. language Brahui, seen as a link by McAlpin, is a late-comer to Baluchistan (Elfenbein 1987). Southworth (1988: 664) stresses the difference between northern (Gangetic) and southern rice, which might have been dry land rice.

On the other hand, Southworth later on mentions that PDrav **(v)ariki* DEDR 215, has been taken over from PMunda at c. 1500 BCE: **ərig* 'millet, Panicum militare' (Zide & Zide 1973: 8) → **arik(i)* 'staple grain' (Southworth 1988: 660), because the South Drav. sound change *k* > *c* took place only between the second and third stage of Drav. (Krishnamurti 1969); thus: Munda **ərig* → Drav. **(v)ariki* > Tamil *ari*, *arici*. This South Dravidian form *arici* has been transmitted westwards, probably by sea trade, Greek *óryza*, *óryzon* and Arab. *ruz*, Engl. *rice* etc. (Southworth 1979: 202, cf. EWA II 598).

[6] The earliest archaeologically found rice is said to come from Koldihwa near Allahabad (c. 5440/5430 BCE or even earlier); this has been doubted. A more probable date is c. 4000 BCE, at Chirand in Bihar.

Southworth also reconstructs PDrav. **vari*, **variñci* DEDR 5265. This, too, was transmitted westwards, but via the Baluchistan-Bampūr trail, to Old Iranian as **brinj*, M.Iran. *brinj*, N.Pers. *birinj*). It must have been this form that was the basis of the word in the late Southern Indus civilization.

The northern track westwards is attested by Ved. *vrīhi* < pre-IA **vrijhi-* and reflected in the E. Iran. (and N. Iran.?) languages: Pastho *wrižē*, (but Khotan. *rrīysua* [*rīzua*]!), Nuristani *wrīċ*, *rīċ* (cf. Fussman 1972).

The Northern Indus dialect had **vrij* > Ved. **vrijhi* > *vrīhi*, Nuristani *wrīċ*, Pashto *wrižē*. The Southern dialect is indicated by M.Pers. *brinj*, N.Pers. *birinj*, going back to **vəriñji*, Dravidian **variñci*, a form with "infixed" *-n-*, found in central Dravidian: Gondi *wanjī* (Pengo *verci(l)*, Gadba *vasil*, DEDR 5265). The form with *-n-* points to Munda origin and to a relatively far-reaching influence or expansion of the Munda in this early period (cf. Kuiper 1955: 140, 1962: 14, 51, 1991: 39f.). Again, this distribution also suggests a difference between, on the one hand, northern or north-western form, including the northern Indus language, and on the other, the southern Indus language and the rest of the subcontinent.

However, these forms have to be reconciled with Tibetan *'bras* [*əbras*] > mod. Tib. [*jɛ̇*], Purik *bras*, with the neighboring, linguistically isolated Burushaski *bras* (Kuiper 1962: 40, 1955: 143 n. 17, Tikkanen, 1988: 303–325), Dumaki *bras*, and even with some Austronesian forms such as Malay *bəras* → Somali *barìs*?; cf., however, Dayak *bari*, Malegasy *vare*, *vari* → Bantu *wari*, *wali* (Nurse 1983, Southworth 1988: 664, Witzel 1995) and O.Jpn. *uru-shine*, (cf. mod. Jpn. *uru-chi* < **uru-ti*). Both *bras* and pre-Vedic **vrijhi* must go back to a source such as ***əβərij* (Witzel 1997).

In the study of the Asian words for 'rice' we have to take into account words from S., S.E. and E.Asia:

– S. Asia: Ved. *vrīhi* < **vrijhi*,
Burushaski *bras*[7], Tib. *'bras*[8],
Drav. **arici*, **variñci*[9];
Munda **ə-rig*,
Tib.-Burm. **dza-*[10] < Austr. **$C_s$amaq*
Kusunda *cusum* 'rice in husks', *kādiyun* 'cleaned rice'

[7]Southworth 1990: 229, n.10: PIA **camala/cāvala* < TB *ca-*? (*dza*); cf. Southworth 1974, with an early Drav. substrate in the northwest and in the Gangetic plains: < Tib.-Burm. **cā* + *vāl/vār* < Drav. *vari*? — Other IA words for 'rice' (oryza sativa): OIA *taṇ ḍula* < Drav. (Southworth 1988: 660); OIA *śāli* < Tib.-Burm. *cau-* / Austr. *$C_s$amaq* (Benedict 1990); P.Drav.1 **manji(k)* DEDR 3790, 'rice plant', but also 'seed' in Kurukh.

[8]Benedict 1972: 123 [*əbras*, *'əbras*]; cf. also TB **mruw* 'grain, seed' Benedict 43: no.150 Tib. *'bru* 'grain' (and Nepal. inscriptions, with *-brū*, *-bū*, see below), and (?) Lushai *buh* 'boiled rice'.

[9]Southworth 1990: 229 n. 9. — In Drav. the word for 'rice' cannot be reconstructed for the early stages (PDrav. 1), where only the meaning 'seed' is found: Kurukh *manjī* 'seed in general' and Tamil *arici* 'seed' in: *ēlav-arici* 'cardamom seed' DEDR 768. — Cf. also Guj. *varī* "particular kind of grain", Mar. *varī* 'grain Coix barbata', Pkt. *varaia* 'a kind of rice'; CDIAL 11328 *varī*, — all on the Drav. trail South from Sindh.

[10]Ved. *vrīhi* has been supplanted in NIA almost everywhere by Tib.-Burm. CDIAL 4749 **cāmala/cāvala*, Pkt. *caulā* (pl.), *cavala*, and NIA *bhāt* 'cooked rice' (Southworth 1988: 666); for this see Benedict 1972: 28 no. 66 'to eat', Kanauri *za*, Garo *tśha* 'eat', Lushai *fa'*, *fāṅ*, Bahing *dz'a*, Newari *jā* 'cooked rice', *jāki* 'uncooked rice' (cf. Lushai *caw* 'cooked rice', *caw ciar*); the Tib.-Burm. word apparently is a loan from Austro-Thai: **$C_s$amaq*, s. Benedict 1990: 175.

– S.E. Asia: Munda *ruŋ-ku'g (Zide & Zide 1973: 17)
Austr. *$C_S$amaq
Austrones. *pajay;
Austrones. *i-may
Thai *xau > khaw (Haudricourt, in Shafer 1966–7: 522)
Austro-Thai *kru-may (> Jpn. kome)
– E. Asia: Chin. *miər, Tib.-Burm. *may[11]

The distribution of the various words for 'rice' points to an old (South-)East Asian word of culture. Just as in the modern spread of the E. Asian word 'tea', several routes of distribution have to be distinguished:

1. an approximate reconstruction of the S.(E.) Asian word *əvrij(h)i/*əbras, probably < **əβərij,[12] which is spread out in a wide arch between
2. E. Asian *may, *xau, *krumay (< *kru-*may?)[13] and
3. S. Asian *ə-rig[14], *ruŋ-ku('g).

PMunda *ruŋ-ku('g) (Zide & Zide 1973: 17, *(r)-(n)-ku, Kuiper 1962) may be an Austro-Asiatic form with prefix r-. This might be connected, via metathesis, with Benedict's Austro-Thai-Japanese *krumay (> Jpn. kome, kuma-shine), a word that may be composed, if Sino-Tib. (Benedict 1972: no. 65, 128, 149, 192, 193) *may, Austrones. i-may and Thai *xau are compared, of *kru-*may. In the end, one may think of a Proto-form **kru as the ultimate source for 'rice' in S.E. and E. Asia (Sino-Tib., Austro-As., Austro-Thai).

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[11] Benedict 1972: 149 n. 408, 491–2 Tib.-Burm. *may as early loan-word from Austro-Thai, e.g. Indones. *imay 'rice' (but O.Jpn. yöne, Jpn. ine, -shine 'rice plant' < *yinai, according to Benedict 1990: 234; cf. also ne 'root'); Chin. miei < *miər 'rice (paddy)', Bodo-Garo *m[a,e]y; Karen *may; cf. Tib.-Burm. *s-min 'ripe, cooked') Benedict 1972: 106 § 432 (< Proto-Miao-Yao *snaṅ 'cooked rice'?, see Benedict 1992:234).

[12] Benedict 1990: 43 reconstructs Proto-W.-Malayo-Polynes. (Hesperonesian) *pajay (Mal. padi, Jav. pari, cf. the Engl. loan paddy; however he also has (1990: 77) Proto-Austrones. *pagr[ə]y, that differs from the S. Asian/Central Asian cluster *vrīȷ̄hi/bras by a transposed(?) -r-, (perhaps: Austric **β ə-rəji / *pa-$C_{j/g}$rəy > *pagrəy, *pajay??).

[13] Benedict 1990 assumes Proto-Austro-Thai *krumay, whence Jpn. kome, kuma(-shine). In connection with the Tib.-Burm. and Sinitic forms (*mi, may, Benedict 1972) a compound **kru + **may may be construed. The proto-form **kru seems to be the source for the words for 'rice' in Sino-Tibetan, Austro-Asiatic and Austro-Thai (including Austronesian).

[14] The Austro-Asiat. words still are very close to those in Austro-Thai: PMunda *ruŋ‿-ku('g/'b) < Austro-As. *ərig, 'millet, Panicum militare'. Pinnow 1959: 96 § 139 derives *ruṅ from Kharia ḍ uruṅ 'to pound rice' etc. (p. 92 § 116), and -ku('b) from Sant. hoṛ o, Mundari huṛu etc. (p.122 § 244), cf. also Kharia khõsṛ õ pe' etc. (p. 171 § 370). — In Munda there is, next to Kharia romku'b, also Juang ru(n)kū, Sora ruṅkū-n, Bondo/Remo, Parengi ruṅku, Gutob rukū (Pinnow 1959: 96), and in eastern Austro-As.: Khasi khau, Mon unko, Khmer oṅkor; — Thai khāu may be a loan word from Austro-As.? Further: Palaung ra-kō, Kuoi aṅkau, Sue raṅkao, Palaung ra-kō, Palaung-wa unko, Sakai: Krau (Ketiar) uṅ-kuok, Sakai also: c ənroṅ 'husked rice', Krau (Kuala Tembeling) r ə-kua' etc. (Pinnow 1959: 96, Kuiper 1962: 51f.). The variation in Austro-As., already observed by Kuiper, points to a proto-form *(r)(n)-k(h)u. — Thus, Dhimal (= Tib.-Burm. Kiranti, eastern Himalaya) ūnkhū 'rice', according to Kuiper < Munda *ruṅku.

Wheat

Further dialect differences between the northern (Panjab) and the southern (Sindh) forms of the Indus language can be observed in the designation of 'wheat'. Though some claim that wheat, the staple of the Indus civilization, is a local domesticate (cf. Allchin 1995: 46, cf. Allchin & Hammond 1978, Kenoyer 1998), it is a western import, as it originated west of the Zagros and south of the Caucasus. In S. Asia it is found as early as the 7th millennium BCE. This leaves several thousand years before the attestation of the S. Asian words for 'wheat', Ved. *godhūma*, Kan. *gōdi* etc.

These are clearly related to Near Eastern ones, e.g. Old Egypt. *xnd*, Hitt. *kant*, PSemit. **ḫanṭ*. The individual track of the loan word differs, however, just as in the case of the word for 'plough'. A form **gant-um* that has entered via the northern Iranian trade route (Media-Turkmenistan-Margiana/Bactria-Aratta/Sistan) has resulted in Avest. *gantuma* and the later Iranian forms: M.Pers. *gandum*, Baluchi *gandīm*, Pashto *γanəm* < **gandūma*?, Yigdha *gondum*, Shugni *žindam*; Khotanese *ganama* < **gandama*, etc. (see Berger 1959: 40f, EWA II 498). The Iranian form has also been taken over by the Drav. newcomer in the region, Brahui: *xōlum* < IA **γolum* (CDIAL 4287), from Bur. according to Berger (1959: 42). However, Bur. *guriṅ*, *gureṅ* (pl.), *γárum* < **γor-um* < ***γund-* (Berger), seem to have been borrowed from the Indus language. (Berger thought of a loan from Bur. into the Panjab area languages; cf. also Bur. *gur* 'barley, wheat colored', *bur* 'buck wheat' Berger 1959: 43)

When this word entered the Panjab it must have changed its initial syllable (**gan-*) to *go-*, thus **godum*, a change echoed by the Southern Indus language (**godi*). Vedic has *godhūma* and similar continuants (Turner, CDIAL 4287). This is a clear folk etymology: the unfamiliar **gantum/gandum* > **godum* was analyzed as *go-dhūma* 'cow smoke'.

Another form of the Near Eastern word that has come via the Southern route (Elam/Anšan-Simaški/Tepe Yahya-Marhaši/Bampur) has resulted in Meluhhan **gōdi*. This is retained in Drav. **gōdi* (Kan. *gōdi*, Tam. *kōti*, cf. DEDR 1906). The change from *-an-* > *-o-* is not unfamiliar in Sindh (see below). A pre-Iranian **gantum* must have become **go-tum* or **go-dum* in Sindh.

The Drav. word, too, seems to be a popular etymology of the unfamiliar **godum*: 'low red plant", reconstructed by Southworth (1988: 658, 660) as PDrav. 3 at c. 1000 BC as **kō-tumpai*. Maybe he thought of DEDR 3334 Tam. *tumpai* etc. 'nettle, weed' etc. (cf. Tam. *kōtumam*, Mal. *kōtambu*?). The exact development from **tumpai* > *-di* would then not clear; (at this supposed late date *kōtumpai* could even be based on RV *godhūma*!)

Obviously, in *this* case both the Northern *and* Southern Indus language have changed *-an-* > *-o*, while the Northern language otherwise retains *-an-* (see below). The northern form, based on Pre-Iranian **gantum* would have resulted in Vedic ***gan-dhūma* or perhaps ***gandha-dhūma* "perfume smell', cf. CDIAL 4020 Skt. (lex.) *gandhālu* 'fragrant rice', Pashai *gandár* 'a kind of grain'. The Southern (Meluhhan) **godi* must have influenced a northern **gantum/gandum* that facilitated a later Vedic popular etymology as 'cow smoke'. The mechanism of this influence is unclear. It may be due to Dravidian influence on the Panjab in the Middle/Late Ṛgvedic period; note that *godhūma* appears only in early post-RV texts.

In short, the inhabitants of the northern Indus region (Panjab) thus must have called their wheat something like **godum* and those in the Southern Indus region (Sindh), **godi*.

§ 1.10. Further dialect differences

The strange sound change *an > o is not isolated. It also occurs in the migrant word of culture for 'hemp': Ved. *śaṇa* (AV 2.4.5, PS 2.11.5 *śaṇa*), M.Pers., N.Pers. *šan*, Khotanese Saka *kaṃha* (but Gāndhārī > Niya Pkt. *ṣaṃṇa*), Osset. *gœn*, *gœnœ*, (Greek *kánnabis*, EWA II 605; Engl. *hemp*, etc.). It appears, again, in Dravidian, with popular etymology, as Tel. *gōnu*, *g õgu*, cf. *gōṇgūra*, Kan. *gōgi*, 'hibiscus cannabinus' (DEDR 2183). The original northwestern form is guaranteed by the North-Iranian (Ossete), Greek and Germanic forms of the loan word: *kanna-bis*, *hemp*, etc. The northwestern dialect has preserved *-*an*-, for example in the R̥gvedic, yet certainly pre-Indo-Aryan tribal name of the *Gandhāri* (and in the later Vedic country *Gandhāra*). The northwestern name *Śambara* (in the Afghan. hills), too, has not been changed to **Śobara*, but note the name of a poet in the more southern RV 8, *Sobhari Kāṇva*.

We have a clear distinction between N. Indus -*an*- and Southern Indus -*o*-. (Note that original *-*an*- appears in post-RV texts further east and south, in Dravidian, as -*o*-). This is again a point that may turn out to be of importance for the decipherment of the Indus script which indeed has several features (special signs) that are different in Harappa (N) and Mohenjo Daro (S), (see B.Wells 1998).

This is the opportune moment to briefly discuss another northwestern peculiarity, the interchange of *k/ś* in Vedic. This has occasionally been observed, even one hundred years ago in the case of *Karkoṭa/Śarkoṭa*, but it has not been put into proper relief (Kuiper 1991: 41, 42, 44 as Proto-Munda, cf. KEWA III 309, Witzel 1999). The interchange of *k* and *ś* is not related at all to the well-known Indo-Ir. development of IE **k̑* > Ved. *ś*, as the present variation occurs only in 'foreign' words.

The name of the snake demon *Śarkoṭa* (AV) appears also as *Karkoṭa(-ka)* RVKh 2.14.8, and locally especially in Kashmir and Nepal; cf. Bur. *hergin* (Berger *hargín*) 'dragon' or rather *γárqa* (Berger *γárqas*: CDIAL 3418?) 'lizard', Skt. *karkaṭa* 'crab', Mundari *kaṛkom* etc. (Pinnow 1959: 341 § 483d). The prefix *śar-/kar-* can be connected with [*sər*-] of the '300 foreign words' (Kuiper 1991: 40–1, 1948: 121), for example in *Sr̥binda* (Kuiper 1939 = 1997: 3 sqq.), *Ku-sur(u)-binda*, *bainda* (Bind tribe), post-Vedic *Vindh-ya*.

Further materials include *kambala/Śambara* 'blanket/name of a demon', *kabara/śabara*, *kīsta/śīṣṭa* 8.53.4 (with var. lect. *śīṣṭ*-, *śīrṣṭ*-, *śīrṣṭr*-, see above), *Kimīdin/śimidā*- 'demon/a demoness', *kambu/śambu* 'shell' (Kuiper 1955: 182), cf. *Kū-śāmba*, *Kau-śāmba* 'name of a person', cf. *ki-śora* 'filly' AV, 'youth' CDIAL 3190 : *śi-śu* 'baby', *śi(ṃ)-śu-māra* 'Gangetic dolphin', *śiśūla* 'dolphin' RV (EWA II 641-2; Lévy, in Bagchi 1929: 121 sqq.), *Kirāta/Cilāda* 'a mountain tribe', *kiknasa* 'ground grain' AB: *cikkasa* 'barley meal' lex., Bur. *šon* ∼ Ved. *kāṇa* 'blind' RV.

The realization [*k'*] or [*ś*] of an unknown phoneme (probably *k'*) would easily unite such words as *Śam-bara* : *Kam-bala*, *śabala* : *kabara*; it would also offer a better candidate for Pinnow's unexpected reconstruction for the Munda and Mon-Khmer self-designation **Šqawar* > *Śabara* AB, and in the tribal names > *Sōrā*, *Hor*, *Kora*, *Kherwar*, *Koro/Korku*, *Khmer* etc., Pinnow 154 § 311); rather from **k'awar*, **k'amwar*.

In consequence, Vedic loan words with the interchange of *ś* / *k* may go back to a phoneme *K'* with realization close to [*k'*] or [*ś*] in the Indus language.

Millet

Another dialect difference can be observed in the "new" import at the time of the Indus civilization, millet. This domesticated plant has originated in China and another variety in Africa (Southworth 1988: 665, Randhawa 1980: 504; Nurse 1983, summarized by Cavalli-Sforza 1995, see now Meadow 1998). The Chinese words have no similarity to the Indian ones (Karlgren 1923), and the source of the Indian words has not been established so far: any language between the Sahel belt and Baluchistan is possible.

It has to be noted, that in the case of this comparatively late import, *-an-*, *-am-* has been preserved both in Proto-Munda **gaṅgay*, Dravidian DEDR 1084 *kaṅgu* (Tam. *kaṅku*), DEDR 1242 *kampu*, Ved. *priyaṅgu*, OIA dialects **kaṅkuna*, **kaṅguna*, **taṅguna* (which may provide some indication of the time frame for the words discussed above).

Even though comparisons between the various words for 'millet' can be made, they cannot be traced back, as is the case with many widely spread loan words, to a single source. Hindi *kaṅgnī* can be compared with OIA **kaṅkunī* CDIAL 2606, with Tamil *kampu* DEDR 1242 and with Munda **gaṅ(-)gay* (Southworth 1988: 660, Zide & Zide 1973: 8). The source of these words may have had a form such as ***kaṅ-CV*. From this, Ved. *priyaṅgu* (EWA II 190) can be derived as well, as it seems to have been changed by popular etymology, like several other agricultural terms: prefix **pər-* (Kuiper 1991: 42f.) > **priya+gu* 'dear cow'. Other IA designations of millet are: Ved. *aṇu* and **aṇuni* CDIAL 195. All of this points to a contamination or cross of **kaṅgu* and *-*(k/g)aṅgu* → IA *aṇu*; (**al* 'to mill' EWA I 55; rather a Munda change, Pinnow 1959: 198f., *k*/**q* > ∅ typical for Sora, Kharia *k* : Sora ∅; thus: *kaṅgu* : **aṅgu* → Ved. *aṅu*, cf. Kuiper 1991: 38). In short, all major language families of S. Asia have taken over the word from an unknown, but not exactly the same source.

Nevertheless, a clear difference between Northern and Eastern/Southern forms is visible: PDrav. **kampu* is opposed to PMunda **gaṅgay* (Zide & Zide 1973), while the IA forms stand in between the two. The usual IA form is Ved. *aṇu* (cf. O.Indo-Aryan **aṇunī*, Turner, CDIAL 195). However, based on Ved. *pri-yaṅgu* < **pər-gaṅgu*? and the reconstructed OIA forms **kaṅkunī*, **kaṅgunī*, **taṅgunī* (CDIAL 2606), a northwestern Indian **kaṅkun*, a central-northern **kaṅgun*, a more eastern North Indian **taṅgun* can be reconstructed for the pre-Vedic period, while the Southwest must have had, next to Drav. **kampu* DEDR 1242 (= Skt. *kambū*, in Hemādri) also a form **kaṅgu* CDIAL 2605, DEDR 1084. The northern Indus language should have had **kaṅku(n)*, its southern dialect (Meluhhan), **kaṅgu*.

The modern languages also do not agree: In Hindi (Masica 1979: 76 sqq., 135f.) we find various terms for the many varieties of millet: *kaṅgnī* (**kaṅkunī* CDIAL 2606); *kuṭkī* (Masica from Skt. *kuṭakā*, not found in the dictionaries; cf. *kuṭaka* 'a kind of tree' KauśS.); *kodoṇ* (CDIAL 3515 *kodrava* 'grain eaten by the poor' Mbh., cf. *koradūṣa* 'idem' Suśr., *-ka* KŚS; DEDR 2163 Tam. *kural*, Kan. *koṛale*, *korle*; Konda *koṟen* 'a grain'); *khil* (Masica: from Skt. *khiḍ*), *junhār*, *j(u)wār*) (**yonāla* > *yavanāla* > *juār*, < Drav. **coṉṉel*, DEDR 2359, DEDR 2896, CDIAL 10437); *bājrā* (Vedic: HŚS *varjarī*, CDIAL 9201 **bājjara*); *ma(ṇ)ṛūa* (CDIAL 9728 < *maḍaka* 'the small grain Euleusine corocana'); *sāṇwāṇ* (Ved. *śyāmaka* VS, CDIAL 12667). Some of them belong to the c. 30% of agricultural vocabulary in Hindi that comes from Masica's "Language X".

Finally, as pointed out above, the word for 'peacock' must go back to a northern Indus form

**mayur* > Ved. *mayūra* RV level II, and to a southern form **mayil/r* > Drav. Tamil *mayil*, Irula *muyiru*, Tulu *mairu*, Konda *mrīlu*, *miril* etc.

In summing up, it can be stated that in the north-west and also in the Panjab, as represented by loan words in most of the RV, original northwestern *-*an*- is opposed to southern -*o*-. The same relationship is also found in north-western *ś* : subcontinental *k*, north-western -*ñ*- : subcontinental *zero* in the word for 'rice'. We can discern a clear difference between the Panjab (→ Vedic) and Sindh/Gujarat (→ Dravidian) forms of the Indus language.

Dialect differences between Panjab and Sindh seem even to be indicated in the Indus inscriptions themselves. Seals and plates from Harappa (Panjab) differ in a number of items from those found at Mohenjo Daro (Sindh), for example in the sign for 'container, quantity' which looks like a V; this is almost only found at Harappa (B. Wells 1998). The same applies to some 'suffixes' in the inscriptions (Wells, by letter 1999). It can be concluded that the Meluḫḫan variety of the Indus language was the 'original' language of Sindh. Was it also the Indus trading language? In that case, it has disappeared, just like Sumerian and Elamite, and traces may at best be found in Sindhi — a step that has not been taken. There is no etymological dictionary of Sindhi.

§ 1.11. Dravidian immigration

The observations about the early linguistic evidence from Sindh, made above, indicate that speakers of Dravidian were not a primary factor in the population of the Indus civilization, even of Sindh, and that they were immigrating into the Panjab only in middle Ṛgvedic times. But when could they have entered South Asia?

Earlier scholars (Heine-Geldern 1964, Pinnow 1954: 15) thought that they entered S. Asia (sometime as late as the early 1st millennium BCE) and proceeded via Baluchistan, Sindh and Gujarat to S. India (Zvelebil 1970, 1990: 48, 123). Indeed, their tracks are still visible in certain place names in Sindh, Gujarat and Maharashtra (see above). According to Southworth and McAlpin, however, the semi-nomadic speakers of Dravidian who even had contacts in Iran with the pre-immigration Indo-Aryans (Southworth 1979: 203, 228 f., 1990: 222-3, 1995), came to S. Asia relatively late, but early enough to participate in the Indus civilization, from which they acquired agriculture and the accompanying vocabulary. This scenario, if applied just to Sindh, explains why the c. 300 foreign words of the RV (in the Panjab) with their (agricultural) vocabulary are relatively free of Drav. influence.

According to the indications given above, the Dravidians apparently were just as foreign to Sindh and its agriculture as the Indo-Aryans to the Panjab. As the Northern Indus language (Para-Munda) differs considerably from the Southern one (Meluhhan), it seems likely that the speakers of Indo-Aryan entered the Panjab and acquired local words from the Northern dialect (*śaṇa*, *lāṅgala*, *vrīhi*, *godhūma*, *kaṅgu*, *Gandhāra)*, and that the Dravidians entered Sindh at or about the same time and acquired such words from the southern dialect (*gōnu*, *ñāñcil*, *variñci*, *godī*, *kaṅku/kampu*). It may even be the case that the first who made horses statues at Pirak (1700 BCE) were Dravidians, not IA Bhalānas. For the first use of horses must not necessarily be linked to speakers of an IA language.

The Drav. words for 'horse' underline this: DEDR 500 Tam. *ivuḷi*, Brah. *(h)ullī*, 1711 Tam. *kutirai*, Kan. *kudire*, Tel. *kudira*, etc., 3963 Tam. *pari* 'runner', 4780 Tam. *mā* 'animal' (horse, elephant), Tel. *māvu* 'horse, (cognates mean 'deer' etc. in other Drav. languages), cf. Nahali *māv* 'horse'. These words are quite different and independent of IA *aśva* 'horse' and various words for 'runner' (*arvant*, *vājin*, etc.), etc.

On the other hand, the technical terminology for chariots is IA and IE. It has been taken over into Drav.: *akṣa* 'axle' RV > Parji-Kolami *accu* 'axle'; *āṇi* RV > *āṇi* 'lynch pin', *ara* RV > *ār* 'spoke' (cf. Southworth 1979: 230 n. 14). Note that the earliest IIr **ratha* 'chariot (with two spoked wheels)' (Gening 1977, Pigott 1992, Anthony u. Vinogradov 1995, cf. Littauer u. Crouwel 1996) is found about 2000 BCE, near the Volga (North Iran. **Rahā* > Greek *Rhã* = Avest. *Raŋhā*, Ved. *Rasā*). The IIr word for 'chariot', however, is old enough to have resulted in the archaic compounds Ved. *rathe-ṣṭhā*, Avest. *raϑaē-šta-* 'chariot fighter', cf. Old Avestan *raϑī*, RV *rathī* 'chariot driver.' Dravidian has nothing of this, but possesses words for 'wagon' or 'bullock cart'.

An early wave of Dravidian speakers might very well have preceded the IAs into Iran and S. Asia and some may have stayed on in SE Iran. (Note the strange absence of the western Baluchistan country of Maka in the Avestan record of "Aryan countries" in V. 1, cf. Herodotos 3.94). A few IA loans in Proto-Drav. would settle the case, but culturally decisive words, such as for the newly introduced horse, the chariot, or other pastoral terminology do not exist. The Dravidians hardly had any previous contact with the Indo-Aryans while still in Iran. Contra Southworth (1979: 196f.), there is little secure evidence for *early* loans from IA into Drav.; such words can have been taken over any time between the RV (1200 BCE) and the earliest attestation of Tamil at the begin of our era (see above, on Drav. evidence in Vedic). There are only a few questionable loans that might have come from the pre-immigration period, that is from hypothetical contact when still in Iran; these remain speculative; perhaps one can think of a common source for Ved. *gar-da-bha* EWA I 473, Drav. *kaḻu-tai* DEDR 1364 'donkey', similar to Ved. *khara*, Avest. *xara*.

§ 2. Eastern Panjab and Upper Gangetic Plains

§ 2.1. The Kuru realm

We return now to the epicenter of post-Indus developments, the area of Eastern Panjab-Haryana-Uttar Pradesh, in other words, the lands from the Pakistani border up to Allahabad. In the early post-RV texts, its hub is Kurukṣetra, northwest of Delhi.

This is the realm of the middle R̥gvedic Bharata and the late R̥gvedic Kuru (Witzel 1997). The Bharata tribe and its successor, the new tribal union of the Kuru, represent a new wave of IA immigrants from the other side of the Indus (Vasiṣṭha RV 7, JB 3.238–9 § 204), which brought new linguistic traits with them (kuru for older *kr̥ṇu*, *sarva* for *viśva*, etc., Witzel 1989). The Kuru dialect is remarkably more modern than the language of the bulk of the RV. However, RV book 10 often reads already like the next level, that of the AV and other Mantra texts of the Kuru period.

The Kuru confederation, supplanting the 50-odd R̥gvedic clans and tribes, became the center of linguistic (Witzel 1989), religious and social (Witzel 1997) development. They formed, together with partly IA- acculturated Indus people (*ārya*-tribes such as the Anu-Druhyu, Yadu-Turvaśa) and with the new addition of Dravidian speakers, a new society with a new *elite kit* (Ehret). This included pastoralism (cattle, horse, sheep, goat), IA ritual and acculturated customs, IA religion and ritual, but also post-Indus type agriculture (barley, wheat, rice, millet) and local artisans (potters, etc. see below). The new culture, Vedic orthopraxy and social system (with four classes) then spread eastwards into the Gangetic plains, and ultimately to Bihar.

Because of the amalgamation of the three groups (IA, Para-Munda, Drav.) discussed above, we have to suppose a large degree of bilingualism and even trilingualism, and the forming of pidgins. (Kuiper has a forthcoming paper on a 'bilingual' Vedic poet). A Vedic pidgin must have been used at home, and proper Vedic Sanskrit was learnt 'in school', at the time of initiation of boys. While the lingua franca was a form of late/post-R̥gvedic IA, pockets of the Para-Munda Indus language, of the newly arrived Dravidian as well as some remnants of the Gangetic Language "X" must have survived as well.

Among the post-R̥gvedic texts, especially the AV is full of non-IA, 'popular' words of plants, animals, demons, local deities, and the like. Their character still is, by and large, Para-Munda, with some words from the 'local' language ("X"), and with some Drav. words included; all of which is clearly visible in the increase of words with retroflexes.

The linguistic situation is reflected, among other items, in the mixture of IA and other river names in the area. The famous Sarasvatī is also called Vaiśambhālyā / Vaiśampālyā / Vibalī; these names and that of the nearby Vipāś < **vipāḷ/vipāś* all seem to go back to a local word, **vi-śam-paž/-paḷ*, (Witzel 1999). However, and typically, there are no Dravidian river names in the whole Kuru area.

A hint of how Drav. influence on Vedic was exerted is contained in the name of the Śūdra. From the late RV (10.90) onwards, this designates the fourth, non-Ārya class; it was added to the three 'Ārya' classes of Brahmins, Kṣatriya (nobility) and Vaiśya ('the people') only at this time. However, Greek sources of Alexander's time still place a tribe, the *Sudroi*, at the confluence of the Panjab rivers with the Indus; this may still indicate their origin in Sindh/ Baluchistan.

Drav. words first appear in Middle and Late R̥gvedic, in RV 3, 7, and 8, especially in the Kāṇva section. Interestingly, it is Tura Kāvaṣeya, the great-grandson of the Drav.-named *Kavaṣa* 'straddle legged', a priest on the 'wrong side' in the great Bharata battle (RV 7.18) who becomes an influential priest in the Kuru realm and who developed the new, post-R̥gvedic (śrauta) rituals (Proferes 1999).

It has been stressed by Burrow (1973 : 386) that the post-Vedic texts have more Dravidian words; indeed, the evidence of Para-Munda words, too, is not diminishing but increasing during the Vedic period. This is the case right from the Mantra texts, and includes the Yajurveda Saṃhitās whose territory can be easily established (Witzel 1987, 1989, 1997) as that of the area between E. Panjab (Lahore), Allahabad and the Chambal River area (Ujjain).

A complete discussion of the c. 200 longer or shorter Vedic texts must be postponed to a separate paper (for some lists, see below). In the mean time, one can compare the word index to the AV (Whitney 1881), or Vishva Bandhu's Vedic Word Concordance (in Devanagari script), in conjunction with EWA, KEWA (and DEDR).

The new tribal union of the Kuru (and their more eastern allies, the Pañcāla), with their new social set-up and ritual expanded, incorporating the surrounding tribes, eastwards into the Gangetic plains, in a partly military, partly peaceful fashion until it reached northern Bihar (Witzel 1995, 1997). The eastern tribes were at first regarded as half-barbarian (JB 1.337 § 115) or '*asurya*' (demonic).

The same is seen in archaeology: late Harappan people emigrated towards the Upper Gangetic plain (the only movement of people the archaeologists allow for the whole period under discussion here, Shaffer 1995: 139, cf. Allchin 1995: 33–35), a fact reflected in the Vedic texts as well. The emigration was possible due to a new type of agriculture, permitting cultivation of rice during the monsoon as well as wheat and barley in winter, resulting in a food surplus. The settlement at first occurred along the river banks, in half-nomadic treks (*grāma*, Rau 1997). This is reflected by the Painted Gray Ware culture, with their clear elite pottery whose regional motifs indicate the split into western Kuru and more eastern Pañcāla, something that is also seen in the Vedic dialects they use (Witzel 1989).

Not everybody is included: The non-IA *Kīkaṭa* (3.53) or the *Paṇi* are clearly described as foreigners (late RV hymn 6.45.31), and even later, in the Mantra and YV Saṃhitā period, the *Niṣāda* in the Chambal area (MS 2.9.5 etc.) and other *dasyu* 'enemies' (JB, Witzel 1997: n.161, 163, 278); in RV 10.61.8 as well the South (i.e. the area south of Kurukṣetra) still is the land to banish someone.

§ 2.2. The substrates of Kuru-Pañcāla Vedic.

As has already been indicated, the features of the Ṛgvedic substrate language are also found in post-Ṛgvedic texts that were composed further east in the Kurukṣetra and in western Gangetic plains, as well as in the Chambal area. These words are not just the same as found in the RV, but there are many new ones.

In the Mantra period, starting with YV (MS, KS, TS) and AV/PS, we can clearly distinguish all three linguistic elements:

- Indo-Aryan with some already incorporated north-western elements such as Nuristani *kāca* 'shining piece of jewelry' or Burushaski *kilāy* ∼ RV *kīlāla* 'biestings, sweet drink', Bur. *šon* ∼ RV *kāṇa* 'blind in one eye', Bur. *bus* ∼ RV *busa* 'chaff, mist', (cf. Pinnow 1959: 39), etc.;

- The Indus substrate (Para-Munda), that also is found in the Ganges area (next to some elements of language 'X'), such as RV *kuśika*, *karañja*, *kaṅkata*, *śiṃśapā*, *śiṃśumāra*, *puṣkara*, *puṣya*, especially the words with prefix *Cər* (*pər/kər/sər-*), *kar-koṭa-ka* RVKh ∼ *śar-koṭa* AV, *tila* AV: *jar-tila* KS, *kalmaśa* MS, KS, *kal-māṣa* PS, *kul-māṣa* Up. : *māṣa* AV, with the -*ṭa*, -*śā/ṣā* -suffixes, and with -*ṇḍ*-: *ka-maṇḍalu* : *maṇḍa-la*, *kaṇṭha*? PS, etc.

- The Middle and Late Ṛgvedic Drav. element also is found in the Ganges area: *godhūma* AV (Hindi *gehū̃* etc., Kusunda *gabun*), *kuṇapa* AV, *kurkura* AV, *cūḍa* ŚB, *coḍa* TS, *eḍaka* JB, *arka* ŚB, *bilva* AV 20 (Kuiper 1991:66), -*nīra*- ŚB, etc.

In short, the upper class IA language (of the Vedic priests) used in the upper Gangetic plains contains the same substrate elements as seen in the late Ṛgvedic period of the Panjab. However, due to the increasing stratification of society and increasing specialization among occupations, many words from the sphere of the artisans and from technology were added; furthermore many names of persons, localities and rivers.

Their affiliation can still be ascertained to some extent. With regards to agriculture, Kuiper's RV list (Kuiper 1991: 8, 21, 96, see already Kuiper 1955) contains quite a number of such terms (*kīnāśa*, *lāṅgala*, *bīja*, etc.) Especially among the artisans there is an increasing number of non-IA designations; many of them first appear in the Aśvamedha (MS *kevarta*, *kaivarta* TB)[15]. Some of them are, in line with the increasing specialization, new Indo-Aryan formations (*anucara* 'servant', *grāma-ṇī* 'leader of a trek, wagon train' etc.), but especially those of fishermen (*kevarta/kaivarta*, *dāśa*, *dhīvan*, *daivara*, *puñjiṣṭha*, *pauñjiṣṭha*, *bainda*, *maināla*) are non-IA (often until today). Furthermore, non-IA specialists are: musicians (*talava*, *āḍambara-āghāta*, *dundubhy-āghāta* (cf. *dundubhi* RV), *vīṇā-gāthin*, *vīṇa-vāda*, cf. *vīṇā* KS (EWA II 568), artisans (*kaṇṭakī-kārī*, *bidala-kārī*, also *kulāla*, and the *pālāgala* 'messenger' (cf. *pālāgalī* 'fourth wife of a chieftain'), *gaṇaka* 'astrologer' (cf. *gaṇa* RV) and 'usurer' (*kusīdin*, *kusīda* KS).

Such words come up not only in the eastern parts of North India (Bihar, area of VS/ŚB) but also everywhere from the Panjab (RV) and the Delhi area (MS, KS) eastwards, e.g. *kīnāśa* RV, *gaṇa* RV, *dundubhi* RV, *vīṇā* KS, *kusīda* KS. The newly attested words have the same 'foreign' grammatical formations as seen in the RV: prefixes (*ke-/kai-*, *dun-dubhī?*), retroflexes (*āḍambara*, *kaṇṭakī-*), initial *b-* (*bidala*), suffix *-āla* (*pal-āla*, *main-āla*, cf. Oberlies 1994:341).

Similar data could be supplied for the spheres of material culture and the surrounding nature: agriculture and domesticated plants, local animals and plants, many items of food, illnesses and poisons, implements and utensils, and ornaments; this would lead to far afield in present context (see the lists in MacDonell-Keith, Vedic Index, Delhi 1967 [1912] 517–92). For more examples, one can consult Mayrhofer, *EWA* and for non-IA details especially *KEWA*; these may serve, in connection with CDIAL, DEDR, Kuiper 1948, 1955, 1991 and Pinnow 1959 as a first orientation.

§ 2.3. The Para-Munda substrate.

Prefixes with *ka-* are found in the AV, YV and the Brāhmaṇas (here follow only a few proposals for etymologies; it is to be expected that not *all* of the following words can be divided in the way proposed below; ultimately, this depends on a fitting etymology): *kapaṭu* AV, PS, cf. with Sora

[15] Details: *kīnāśa* 'plough man' EWA: 'non-IE'; *kīnāra* only RV 10.106.10; — the following words all mean 'fisher' *kevarta/kaivarta* VS/TB; Pali, Pkt. *kevaṭṭa*, **kevāṭa*, CDIAL 3469 and add., 3479; Drav. according to Burrow, KEWA I 566, DEDR 1252 Tam. *kayal* 'carp', Mal. *kayal* 'a fish', etc.; *kai-* in *kevarta*; — *dāśa* VS, *daśera* lex. CDIAL 6314 a *Jāt* tribe: *ḍahā*; — *daivara* VS, see *dhī*, CDIAL add. 6819 NIA, Kuiper, KEWA II 105 ∼ *tivara* (lex.) = tribal name? — *puñjiṣṭha* also 'bird catcher?', MS, VS, *pauñjiṣ ṭha* AV; no NIA etym.; — *bainda* ∼ *Sr̥binda*, Kuiper 1991, EWA; — *maināla* < Drav. *mīn* 'fish'; — *śauṣkala* ∼ *śuṣka* 'dried up'? — Further: *talava* 'musician' VS ∼ *taḍ* Epic 'to play a muscal instrument'? Kuiper *ZII* 8, 1931, 251; — *āḍ ambara-ghāta* 'drummer' VS, *ā-* ŚB; Kuiper 1948: 85 f. from Proto-Munda, *dundubhy-āghāta* 'drummer' (RV), ŚB EWA: onomatopoetic, Kuiper 1948: 84 Munda; *vīṇ a-ghātin* 'lute player', also in Iran.?, see EWA, Mayrhofer 1968, CDIAL 12048; *vīṇ a-vāda* 'ditto'; — *pālāgala* 'messenger' ŚB, *-kalī* ŚS. no NIA continuants; — *kaṇ ṭakī-kārī* 'worker in thorns' VS; *k-* "thorn" ŚB, Iran?, Greek *akantha*? — *bidala-kārī* 'basket maker' VS, EWA "not clear", but cf. DEDR 5432 *viḷ* 'to split'; — *sirīn* 'weaver?' only RV 10.71.9 (Ved. Ind. 585–6); — *gaṇ aka* 'astrologer' VS: RV, *gaṇa*, **gr̥na*, CDIAL 3993 and add.; Greek *ageirō* 'collect'; Kuiper 1948: 54 Munda; — *kusīdin* 'money lender' ŚB, *kusīda* KS, TS; Pali *kusīta* 'lazy', etym.? *ku+sad* > Pali *ko-sajja*?? — *parṇaka*? a tribal name? VS "Bhilla" in commentary, EWA ∼ *paṇi*? — *paulkasa*? VS a mixed tribe, Kuiper 1948: 54ff. — Indo-Iran.: *malaga* 'washer man' < AV, *mala*: IE **mel*; — *upala-prakṣinī* from IA *upalā* 'mill stone' TS: *kulāla* 'potter' MS, KS, VS; EWA ∼ RV *kula* 'hole, hollow', in *mahākula*, Pashai *kōlāla* 'potter' CDIAL 3341; — *kr̥ṣī-vala* RV *a-*, AV *kārśivaṇa* : suffix variation!; — *vaṇij* RV, *vāṇija* KS 'trader' < *van-ij* 'winning goods' according to EWA, Mayrhofer 1968.

pud-ən, Sant. *o'd* etc. (Pinnow 1959: 121 § 237; *kapāla* AV; *kapiñjala* PS; *kapola* RVKh, cf. Sant. *puṭi* 'to swell', Kharia *poṭki* 'to sprout' etc. (Pinnow 1959: 173 § 378) ∼ *puṭa* 'bundle, bag' MS, BŚS; *kaphauḍa* AV, see Kuiper 1948: 44; *kamaṇḍalu* KS cf. *maṇḍala* etc.; *karīra* MS, KS; *karīṣ-in* AV; *karuma* AV; *karūkara* AV; *kalāpin* ŚS; *kaliṅga* AB, cf. Skt. *tri-liṅga*, etc., see Kuiper 1948: 45; *kavaca* PS (but see above, Zvelebil's no. 13); *kaśambhūka* Suparṇ.; *kaśipu* AV; *kaśīti* JB; *kaśoka* AV; *kaśmaśa*? AV; *kaṣāya* ŚB; *kaṣkaṣa*? AV; *kasarṇīla* AV, cf. *sarṇika* TS/*sṛdīka* MS (cf. *sṛdāku*?); *kasāmbu* AV, etc.; *kastūpa*, *kastūpa-stopinī* PS, cf. *stupa* KS/*stuka* RV; *kahoḍa* ŚB, JB.

With 'double prefix' *Cər-/Cəl-* there are the following words in which the many variants of the prefix in *kər-* stand out:

karkandhu MS, KS; *karkī*? AV; *karkoṭa-ka* RVKh ∼ *śarkoṭa* AV, PS, cf. Mundari *kar-kom* (Pinnow 1959: 341 § 483d), Kuiper 1991: 41, 44, 1948:121, Bur. *γarqas* 'lizard'; *kardama* KS, cf. Munda *ko-dil*, *ə-dil* 'dirty' (Pinnow 1959: 87 § 101); *karpāsa* Suśr., *kārpāsa* ŚS; *karśapha* AV, PS : *śapha*?; *garmut* TS, *gārmuta* MS (Kuiper 1948: 146, CDIAL 4063: Sindhi *gamu* 'a sort of grass'); *kalkuṣī* PS; ŚB, *kalmali* AV; *kalmāśa* MS, KS, *kalmāśa-* ŚS, PS; *kārṣmarya* KS; *kharjūra* 'date palm' KS; *gulma*? Saṃh.; *jar-tila* 'wild sesame' KS : *tila* 'sesame' AV; *jarvara* PB; *jalāṣa* PS (or *-āṣa* suffix); *palala* Sū., *palālī* AV; *palāva* AV; *palījaka* AV; *barjahā*, *barkara* ŚS; *barbara* KS; *barhiṇa* ĀpDhS; *bharūji* AV; *marīca* ĀpDhS; *markaṭa* KS/*markaṭaka* ĀpŚS; *śarkara* AV, cf. Bur. *γoro*?; *śarkoṭa* AV, PS (see above *karkoṭa*); *sardigṛdi* TS.

Double prefix *Cən-/Cəm-* in:

kaṅkūṣa AV, PS ∼ *śaṅku*; *kaṇṭha*? PS, *(saha)-kaṇṭh-* AV, cf. Kharia *konko*, Khmer *ko*, Mon *ka'* "possibly old compound", Pinnow 1959: 132 § 276; *kāṇḍa*? AV, cf. Kharia *koṇḍen* 'bamboo', (Pinnow 1959: 132 § 275); *kaṇḍūy-*? KS; *kandhara* Up; *kambala* AV ∼ Śambara?; *kambūka* AV ∼ *śambūka*; *kamboja* PS, cf. Greek *Ambautai*; *kāmpīla-* KS; *jāmbila* KS, TS; *taṇḍula* AV; *tālāśa*? AV (if not with *-āśa* suffix); *parūṣaka* ŚS; *palāṇḍu* ĀpDhS; *palāśa* TB (if not with *-āśa* suffix); *palījaka* AV; *palpūlana* AV; *palvala* Sū; *pālāgala* ŚB, *-ī* ŚB; *barśa*? KS, *barśva*? KS; *balāsa* PS, *balkasa* ŚB; *balbaja* RV; *balbūtha* RV; *bhalānas* RV.

From the post-Ṛgvedic materials come words with other prefixes in *Cər-* and with other vowels, etc.:

kirika YV, *girika* MS; *kirmira* VS, etc.; *kul-māṣa* Up. cf. *māṣa* AV; *ku-ṭaru* YV, etc.; *sṛdāku* 'lizard', etc., lex., *sṛdāku/-gu* MS, *sṛdara* 'snake', etc. Mayrh. *ZDMG* 110, 6189 Munda prefix *sṛ-* + *da'k* 'water', see KEWA s.v. *sṛdāku*, etc.; *kaśmaśa*? AV; *kaṣkaṣa*? AV; *jāṣkamada* AV; *maṣnāra* AB; *masūra*? KS, *masura* TS; etc.; *prakubrata* ŚB, *prakudrata* ŚBK, *pramota* AV etc.; *tilvaka* ŚB, *tailvaka* MS, etc.; *tumbara* KauśS etc.

Further Vedic words which are suspected of a Para-Munda origin are, among others:

me-khala AV: *śṛ-ṅ-khala* Skt.; *khaḍga* MS, EWA 443, cf. N.Pers. *karka-dān*, Arab. *karkaddan*, Aelianus *kartázōnos* (**kargazōnos*) 'Indian rhinoceros', cf. Kuiper 1948: 136 sqq.; *karta/garta* to be compared with Kharia *gaṛha* 'river', Mundari *gaḍa*, *gaṛa* 'pit, trench, grave, water course, stream, river'; Sant. *gaḍa* 'hollow, pit, excavation, trench, river'; etc. (Pinnow 1959: 351f. § 498); *tittira* KS, MS cf. Korku *titid*, Santali *sengel titi* 'Guinea fowl': Kharia *khonthe'ḍ*, Sora *on-tid-ən* (Pinnow 344 § 488a); probably also: *musala* AV; *jala*? RVKh, PS; *dhūkṣṇa/dhlukṣṇa/dhḷkṣṇa* PS, *jhaṣa* ŚB : *jaṣa* AV, TS : *caṣa* VādhB; *drumbhūlī* MS / *dālbhuṣī* KS / class. *dambholi*, see Kuiper 1991: 26 (cf. p. 18, 47, 61, 75).

Para-Munda suffixes.

In order to characterize the substrate, certain typical suffixes can be used. Kuiper (1991: 45 sqq.) has isolated the following in the substrate of the RV: *-āla*, *-āṣa*,*-īṣa*,*-ūṣa*/*-āśa*,*-īśa*,*-ūśa*, *-ṭa*, *-nas*, *-ya*, *-ra*, *-śa*/*ṣa*, *-ha*. Among the suffixes are to be underlined in this context are those often found in personal and tribal names, in *-ṭa* (Kīkaṭa, *kṛpīṭa*, *birīṭa*, *kevaṭa* RV / *avaṭa* SV), and the ones in *-āla*/*-āra* (*kīlāla*, *caṣāla*; *mainăla* VS, cf. IA *karmāra* RV 'smith'; *Gandhāri* RV, *Gandhāra*, *Abhisāra* etc., cf. Witzel 1999).

Such suffixes also appear in post-Ṛgvedic time in the texts of the Mantra period and in the Yajurveda-Saṃhitās, e.g. *kalmāṣa* 'spotted' VS, TS; *niṣkāṣa* 'scraping' MS, KS; *yevāṣa* 'an insect' AV, *evaṣa* MS 4.8.1:107:16, *yavāṣa* KS 30.1, KpS 46.6 (*vṛṣaś ca yavāṣaś ca*); *ṛjīṣa* a name of Indra, RV, 'residue of Soma' AV; *uṣṇīṣa* 'turban' AV; *karīṣa[-ja]* PS, 'dung', *karīṣin* AV, *karīṣa* ŚB, (cf. the frequent *purīṣa* 'dung'); cf. also *tūṣa* 'border of garment' KS; later also: *palāśa* 'leaf' TB, ŚB, *ni-palāśa* ŚB, *śirīṣa* 'Acacia sirissa' ṢaḍvB, etc.; cf. also *jhaṣa* 'a certain large fish', ŚB *jaṣa* AV, TS, *caṣa* VādhB.

Para-Mundas in Kurukṣetra and in the Gangetic plains.

The words mentioned above clearly show that also in post-Ṛgvedic, i.e., in the Mantra texts (AV, SV, RVKh, YV), in Yajurveda Prose, and in the Brāhmaṇas, such Para-Munda words can still appear for the first time. Therefore, they had either already existed in Vedic colloquial speech or they entered Brahmanical High Vedic at that particular point in time from the sphere of village life or of the artisans. The area of the early post-Ṛgvedic texts (Mantra texts, YV Prose) can be localized fairly well (Witzel 1987, 1989): it contains Kurukṣetra (i.e. more or less, modern Haryana) and the western Gaṅgā-Yamunā-*doāb* (i.e. the Gangetic plains of western Uttar Pradesh).

In these areas, where no modern groups of Munda speakers survive, the same Ṛgvedic substrate with its typical prefixes can be found. That means Haryana and Uttar Pradesh once had a Para-Munda population that was acculturated by the Indo-Aryans.

If the late Vedic texts (such as the Jaiminīya-Br. and Śatapatha-Br.) are added, the area in question is further enlarged to include the regions south of the Ganges and east of Uttar Pradesh. Here, new Munda words appear as well; however, these regions include those where even today Munda languages are spoken.

In short, a strong Austro-Asiatic substrate is found both in the early Panjab (RV, c. 1500 BC) as well as later on in the Ganges valley (YV Saṃhitās, Brāhmaṇas, c. 1200 v. – 500 BC.), a fact that can also be shown in the names prevailing in these areas (Witzel 1999).

As examples, I mention the river names Gaṅgā (popular etymology of Munda *ga(ṇ)ḍ)*, *Gaṇḍak-ī* (see below), *Narma-dā*, and tribal names such as *Maraṭa*, *Vibhindu* (and *Vibhinukīya*, cf. *Nār-ka-vinda* PS 12.2.3, *Sṛ-binda* RV (Kuiper 1991: 40–43, 1997), *Ku-suru-binda* TS, TB, SB, *Ku-sur-binda* JB, *bainda* VS, cf. Munda *bid* 'insert, plant, sow', Pinnow 1959: 143 § 285), *Śabara* (**Šqawar*, cf. Pinnow 1959: 154 § 31; rather from **K'awar/Šawar*), *Puṇḍra*, *Aṅga/Vaṅga* (cf. also Gaṅgā?; further: *Pra-vaṅga*), *Kaliṅga* (cf. *Teliṅga/Triliṅga*, see S. Lévy in Bagchi 1929: 100, cf. Shafer 1954: 14, 122 as Tib.-Burm.; Kuiper 1948: 45 compares *kuliṅga* 'fork-tailed shrike' Mbh., and **liṅ* in Munda, Khasi, Mon, Khmer, Malay); *Ikṣvāku* (RV, emigration from the Panjab eastwards, Witzel 1997: 307 sqq., 321, 1989: 237), *Nis ̣āda/*Niṣadha/Naiṣadha*, *Mucīpa/Mūtība/Muvīpa*, *Magadha* (cf. *Pra-maganda*), *Śaphāla* cf. *Śāvasa*, *Vasa* etc.

However the truly eastern words (Uttar Pradesh, Bihar) are, next to some remnants of language "X", of Munda nature: there are many personal and place names (Witzel 1999), e.g. that of the river *Gaṇḍak(ī)*, or even that of the Ganges, with popular etymology: Gaṅgā, a sort of intensive formation of *gam* 'to go' (if not modeled after the tribal names *Aṅga*, *Vaṅga*). Pinnow (1953–4) has pointed out many river names, from the *Gaṇḍakī* to the *Narma-dā* which contain the Munda element *-*da'*, *-*da'k* 'water' (Pinnow 1959: 69), for *gaṇ ḍa(kī)* cf. Santali *gāḍa*, Ho *gaḍa* 'river' (Pinnow 1954: 3).

The *Gaṇḍakī* is not attested in Vedic, and is referred to as Sadānīra 'always having water'. Apart from the Epic, it appears in local context, the early Licchavi inscription (467 CE), Sanskritized as *Gaṇḍakī* and in other Skt. texts: *Kāla-Gaṇḍikā*, *Gaṇḍārikā*, *Apara-*, *Pūrva-*; the shorter version, *Gaṇḍī*, appears from the Epic onwards, and several times early on in Nepal as *Gaṇḍi-(gulma-viṣaya)* (998, 1092, 1165 CE, see Witzel 1993). The Gaṇḍaka appear as people in Mbh. as well.

Further, tribal names such as *Pulinda*/Pali *Būli*, Pali *Moriya* (from Skt. *mayūra* 'peacock') and also *Mara-ṭa* (PS), (from Munda *mara'* 'peacock'), Kunti from Munda *kon-ti'd* 'bird', cf. RV *śa-kunti*, Epic *Śa-kuntalā*, etc. (contrast the IA *Matsya* 'fish' (RV), a tribe just west of the Kunti), *Mūtiba (Mūcīpa)*, *Śabara* (mod. *Saora*?), *Puṇḍra* (Bengal), the *Aṅga*, at the bend of the Ganges, and the neighboring *Vaṅga* (Bengal). The prefix change in *Aṅga* (AV) / *Vaṅga* (AB) is indicative of a Munda formation (Kuiper 1991: 43). Mundas may also have lived in the hills and valleys of the Sub-Himalayas, for example in the Kathmandu Valley (see below, Witzel 1993).

Other typical words of the Gangetic plains are, from west to east: *sardigr̥di* TS, *palāśa* TB, *palāṇḍu* ĀpDhS, *tumbara* KauśS, *kaśīti* JB, *kirmira* VS, *kaṣāya* ŚB, *pra-kudrata* ŚBK, *pra-kubrata* ŚBM, *ka-hoḍa* ŚB, JB, *kul-māṣa* Up. etc. Especially informative for regional dialect features of the substrate, from W. to E.: *jaṣa* AV, TS : *caṣa* VādhB : *jhaṣa* ŚB 'a certain large fish'.

The R̥gvedic substrate thus has the same grammatical structure as the words in the Yajurveda-Saṃhitās and the Brāhmaṇas that newly appear from the substrates of the Kurukṣetra (Haryana) and Ganges regions (*doāb*, Uttar Pradesh). It is of great importance that we can detect *the same Indus substrate as found in the RV.* In other words, *the R̥gvedic Panjab as well as the post-R̥gvedic Gangetic Plain were largely settled by speakers of Para-Munda* (including remnants of Masica's 'Language X'). They had been joined, in the early R̥gvedic period, by speakers of Indo-Aryan and, in the later R̥gvedic period, by those of early Dravidian (see above).

Dravidian

In the new IA speaking, culturally Vedic "eastern territories" of the Gangetic plains some Drav. words occur for the first time in literature, e.g. *nīr* 'water' in the name of the eastern river *Sadānīrā*, the modern Gaṇḍak (Witzel 1987), or the verb 'to speak in barbaric fashion', *mleccha-ti.* However Drav. *nīr* is not found in the neighboring N. Drav. languages (Malto, Kurukh), but is only found in Baluchistan (Brahui *dīr*, DEDR 3690). This may be accidental, but it may also indicate that Brahmanical educated speech of the Kuru with their IA-Drav.-Munda symbiosis and acculturation had incorporated some Drav. words which appear only now in the texts. The word *mlecch* has been discussed above. Its appearance in the eastern context is not surprising. From the point of view of the Brahmins, the easterners are 'foreigners', *mleccha*. The word may at first have designated only the southern (Sindh) foreigners, and later on all others. These central and eastern North Indian territories, however, have no Dravidian names; the river names belong to other substrates.

A study of present and medieval north Indian places names has not been undertaken in earnest. We will have to account for such names as that of the town of Goṇḍ(ā) in Uttar Pradesh, some 180 km north of Allahabad. The name Goṇḍ appears nowadays only on the Central Indian Vindhya mountains, and is not known in U.P. from medieval and classical sources. (For some supposedly Drav. river names such as Sadā-*nīrā* from Drav. *nīr* 'water' see above, and for the *Varaṇāvatī* at Benares, see Witzel 1999.)

There are, as always, wrong leads, such as the river name *Kankai* in the Eastern Nepal Terai, which looks like the Tamil form of the name *Gaṅgā* (Witzel 1993); there are, however, no traces of an earlier S. Drav. occupation in the area. The Dravidian Kurukh living in the Terai now have recently been imported as laborers from Central India (K.H. Gordon, *Phonology of Dhangar-Kurux*, Kathmandu 1976) where they are known as Kurukh or Oraon.

For a different view of early Dravidian settlements in N. India, see R. Shafer 1954, Parpola 1994: 168, and Burrow 1973 : 386. Burrow points to the fact that most of the Drav. loan words are found in post-RV texts and concludes: "the influence took place in the central Gangetic plain and the classical Madhyadeśa." Therefore, "the pre-Aryan population of this area contained a considerable element of Dravidian speakers." If that had been the case, we would expect some Drav. river names in the Gangetic plains. However, only Munda (and Tib.-Burm.) names are found (Witzel 1999).

§ 2.4. Substrates of the Lower Gangetic Plains and "Language X".

Next to the Mundas, there must have been speakers of other languages, such as Tibeto-Burmese, who have left us names such as *Kosala*, *Kauśikī* (mod. *Kosi*), perhaps also *Kāśi* and *Kauśāmbi* (mod. *Kosam*), from Himalayan *khu*, *ku* (Witzel 1993). In IA they also have left such words as the designations for cooked rice IA **cāmala* and probably also PS *śāli* 'rice'.

In Uttar Pradesh and North Bihar (attested in Middle and Late Vedic texts, c. 1200–500 BCE) another apparent substrate appears in which the 'foreign' words do not have the typical Para-Munda structure, with the common prefixes, as described above. Masica (1969) called this unknown substrate "language X". He had traced it in agricultural terms in Hindi that could not be identified as IA, Dravidian or Munda (or as late loans from Persian, S.E. Asia, etc.). Surprisingly some 30% of the terms are of unknown, language "X" origin, and only 9.5% of the terms are from Drav., something that does not point to the identity of the Indus people with a Drav. speaking population.

However, only 5.7% of these terms are directly derived from Munda. Obviously, the pre-IA population of the Gangetic plains had an extensive agricultural vocabulary that was taken over into all subsequent languages. F.B.J. Kuiper has pointed out already in 1955: 137–9 (again in 1991: 1) that many agricultural terms in the RV neither stem from Drav. nor from Munda but from "an unknown third language" (cf. Zide & Zide 1973: 15). This stratum should be *below* that of Para-Munda which is the active language in the middle and late Vedic texts.

Again, it has been Kuiper who has pointed the way when he noted that certain 'foreign' words in the Vedic substrate appear with geminate consonants and that these are replaced in 'proper' Vedic by two dissimilar consonants (1991: 67). Examples include: *pippala* RV (1.164.20,22; 5.54.12, *su-* 7.101.5) : *piṣpala* AV (in Mss.) 9.9.20,21; 6.109.1,2; *su-piṣpala* MS 1.2.2:11.7, *guggulu* AV, PS : *gulgulu* KS, TS, *kakkaṭa* PS 20.51.6, KSAśv. : *katkaṭa* TS. Kuiper adds many other cases of Vedic words that can be explained on the basis of words attested later on.

In RV geminates also occur in 'onomatopoetic' words: *akhkhalī-kṛ* 'to speak haltingly' or 'in syllables?', cf. now Nahali *akkal-(kāyni)* '(to cry) loudly in anguish' *MT* II 17, L 33 (*kāyni* < Skt. *kathayati* 'to tell' CDIAL 2703, cf. 38) *MT* II 17; cf. also *jañjan-* RV 8.43.8 etc., *ciccika* 10.146.2 'a bird'?, and cf. also *aśvattha* 1.135.8 : *aśvatha* a personal name, a tree, 6.47.24, with unclear etymology, (Kuiper 1991: 61, 68).

Post-RV, new are: *hikkā* PS 4.21.2, *kakkaṭa* PS 20.51.6 (MS *kakuṭha*, TS *katkaṭa*!), KSAśv in YV: *kikkiṭā* KS, TS, *kukkuṭa* VS, *pilippilā* TS 7.4.18.1, cf. also TS *ākkhidant*, *prakkhidant* TS 4.5.9.2, *ājjya* 5.2.7.3.

Especially interesting is the early gemination **dr* > *ll*: *kṣullaka* AV 2.32.5, TS 2.3.9.3 *kṣullaka*, < *kṣudra* 'small' (a children's word?); later on, among others, *bhalla-akṣa* ChU4.1.2, *bhalla* Br., Mbh (with variants *phala*, *phalla*! EWA s.v.); JB *malla* 'a tribe' (in the Indian desert, Rajasthan; cf. DEDR 4730), etc.

Though certain geminates, especially in word formation and flexion (*-tt-*, *-dd-*, *-nn-* etc.), are allowed and common, they hardly ever appear in the stem of a word (Sandhi cases such as *anna*, *sanna* etc. of course excepted). Until the late Brāhmaṇa texts, other geminates, especially *bb*, *dd*, *gg*, *jj*, *mm*, *ll*, but also *kk*, *pp*, etc., are studiously avoided, except in the few loan words mentioned above (*pippala*, *gulgulu*, *katkaṭa* etc. (Kuiper 1991: 67 sqq.).

It will be readily seen that Kuiper's seminal observation reflects a tendency that can be observed throughout the Vedic texts. Geminates, especially the mediae, apparently were regarded, with the exception of a few inherited forms such as *majj* 'to dive under', as 'foreign' or 'barbaric'. They did not agree with the contemporary Vedic (and even my own) feeling of correct speech (*Sprachgefühl*).

However, starting with Epic Sanskrit, forms such as *galla*, *malla*, *palla*, etc. are normal and very common (however, *-mm-*, perhaps regarded as Drav.(?) remains rare); such words, in part derive from normal MIA developments, in part from the substrate.

This tendency can be sustained by materials from various other sources. In the language 'X' only a few of Masica's agricultural substrate words that do not have a clear etymology (1969: 135) contain such geminates: Hindi *kaith* < Skt. *kapittha* CDIAL 2749 (Mbh), *piplī/pīplā* < *pippala* (RV), *roṭī* < **roṭṭā*, *roṭika* 10837 (Bhpr.); *karela* < *karella/karavella* 3061, *khāl* < *khalla* 3838–9 (Suśr.); to these one can add the unattested, reconstructed OIA forms (Turner, CDIAL, see Masica 1969: 136): **alla* CDIAL 725, **uḍidda* 1693, **carassa* 4688, **chācchi* 5012, **bājjara* (see, however, OIA **bājara,* 9201 *bājjara* HŚS: *varjarī*!), **balilla* 9175, **maṭṭara* 9724, **suppāra* 13482, **sūjji/sōjji* 13552. However, these words have come into NIA via MIA, and that their geminates may go back to a consonant cluster without geminates (see below, on Turner's reconstructs).

All of these tendencies are reconfirmed by what we can discern in the other substrate languages.

While there still are but a few cases in the northwest, the substrates located further east and south all have such geminates. (Incidentally, the northwest has retained the original, non-geminate consonant groups, such as *-Cr-*, to this day, cf. Khowar *bhrar*, Balkan Gipsy *phral* 'brother', W. Panj. *bhrā*, E. Panj. *bh(a)rā* : Hindi *bhāī*, etc.).

In the unstudied substrate of the Kathmandu Valley (inscriptions, 467–750 CE, see below), geminates are found in the following place names: *gamme*, *gullataṃga*, *gollaṃ*, *jajje-*, *dommāna*, *daṅkhuṭṭā-*, *bemmā*, cf. also *bhumbhukkikā* (onomat. with double consonant: < **bhumbhum-ki-kā*?); cf. also village names such as *joñjon-diṅ*, *tuñ-catcatu*, *thuṃtuṃ-rī*, *daṇḍaṅ-(guṃ).*

In the substrate of modern Tharu: e.g. *gẽṭṭī*, *ghaṭṭī*, *ṭippā* (?), *ubbā*; cf. also 'onomatopoetic' words such as *jhemjhemiyā* 'small cymbal or drum', *bhubhui* 'white scurf', *gula-gula* 'mild' (with the usual middle Vedic, OIA, Tamil, etc. form of the "expressive" and onomatopoetic words: type *kara-kara* versus older Vedic *bal-bal*).

In modern Nahali (Kuiper 1962: 58 sqq., 1966) the following substrate words can be found, though apparently various types of consonant groups are allowed: *bekki*, *beṭṭo*, *bokko*, *coggom*, *cuṭṭi*, *joppo/jappo*, *kaggo*, *kāllen*, *maikko*, *oṭṭi*, *poyye*, *unni*. Additions to this list can easily be supplied now from that of A. Mundlay (*MT* II) which are not obviously from NIA include 8 *aḍḍo*, 91 *attú*, 182 *bekki*, 203 *beṭṭo*, 221 *bijjok*, 232 *biṭṭhāwi*, 255 *buddi*, etc.

In the Drav. Nilgiri languages (Zvelebil 1990:63–72) there are a few isolated geminating words that go back to a pre-Drav. substrate, e.g. Irula *mattu* 'lip', *ḍĕkkada* 'panther', *muṭṭ(u)ri* 'butterfly', *vutta* 'crossbar in a house'.

The Vedda substrate contains the same type of words:: *cappi* 'bird', *potti* 'a kind of bee', *panni* 'worm' (de Silva 1972: 16).

Finally by way of appendix, in the isolated Andamanese language (Āka Bīada dialect), a few consonant groups seem to be allowed, but hardly any geminates are found (Portman 1887): *dākkar-da* 'bucket' p.18, *kāttada*, *badda* 'crab' 22, *chetta-da* 'fruit' 34, *tokko dēlē kē* 'to go along the coast', *chetta-da* 'head' 36, *sissnga kē* 'to hiss' 38, *udda* 'maimed' 48, *peggi* 'many' 48, *teggi lik dainga* 'noise' 52, *teggi lik dainga kē* 'to obey' 54, *molla-da* 'smoke' 72, *tekke yābadō* 'straight' 78.

It can be stated, therefore, that the substrate languages outside of the extreme northwest indicate broad evidence for original geminates. Differently from IA (cf. below, on Turner's reconstructions), these words have not been pushed through the 'filter' of MIA, that means their original consonants clusters have not been 'simplified' (e.g. *kt* > *tt*, *kṣ* > *kkh*, etc.) Such striving for simpler syllable structure is known from many languages, e.g. Latin *noctem* > Italian *notte*, French *nuit* [*nüi*], or O.Tib. *bgryad* > Tib. [*yɛ*] 'eight', Jpn.-Austro-Thai **krumay* > Jpn. *kome* 'rice' (Benedict), Kathmandu Valley substrate *kicipricin̩(-grāma)* > Newari kisipĩḍi, etc. Even then, the tendency seems especially strong in S. Asia and probably has worked on IA from the beginning, as for example in the early example AV *kṣullaka* < *kṣudraka.* In Drav. various consonant groups are allowed, including geminates (Zvelebil 1990: 10 sqq.:) e.g., *kakku*, *kaccu*, *kaṭṭu*, *kattu*, *kappu*, *kammu*; (cf. also the interchange *p-* :: *-pp-/-v-* :: *-p/-u*).

One can therefore put the question whether this old substrate tendency has already influenced the Para-Munda of the RV. In Munda itself, such geminates are very rare (cf. Kuiper 1991: 53), and open syllables are common. However, there is a tendency in the Munda languages to eliminate consonant groups caused by vowel loss in prefixes (Pinnow 1959: 457); this does not cause geminates in such cases but is in line with the similar developments from Old to Middle and New IA (e.g. *akṣi* 'eye' > *akkhi* > *ā̃kh*, *rakta* 'colored, red' > *ratta* > *rāt*, etc.). One may therefore explain many of the 'foreign' words with geminates in Vedic and post-Vedic, excluding Drav. loans, in the same way.

For the same area that is covered by Masica's language "X", and for N. India in general, one may also adduce the many words in NIA that are not attested in Vedic, Classical Skt. or the various MIA languages such as Pali but that occur only in their NIA form. They have been collected and reconstructed by V. Turner in his CDIAL. These include the starred forms, appearing in their reconstructed OIA form, and those words that do not appear in Ved. but are more or less accidentally attested in late Skt. texts, and the substrate words dealt with by Turner. They have a typical, often non-IA structure, including the very common cluster -*ṇḍ*-, -*ṭṭ*-. Their root structure follows the following pattern. (C = any consonant, ə any vowel)

> **Cəkkh*, *Cəg*, *Cəgg*, *Cəcc*, *Cəcch*, *Cəjj*, *Cəñc*, *Cəṭ*, *Cəṭṭ*, *Cəṇṭh*, *Cəḍ*, *Cəḍḍ*, *Cəḍg*, *Cəṇḍ*, *Cədd*, *Cən*, *Cəpp*, *Cəmp*, *Cəbb*, *Cəmm*, *Cər*, *CərC*, *Cəl*, *Cəll*, *Cəv*, *Cəs*, *Cəśś*, *Cəh*.

In Turner's CDIAL there are only a few forms such as **Crək*, *Crəc*, *Crəṇṭ*, *Crəll*, *Cləkk*; this does not surprise as all reconstructed words have passed through the filter of MIA and have lost such clusters, — except in the extreme northwest (Lahnda and Dardic).

Double consonants at the end of roots may go back to complicated clusters that can no longer be reconstructed, for example **Cəkkh* < ***Cəkṣ* (cf. RV *kṣviṅkā*, *ikṣvāku*, and compare Ved. clusters such as *matkuṇa*, *matkōṭaka*, *kruñc*). Consonant clusters with various realizations in pronunciation may also be hidden in many Vedic loan words (Kuiper 1991 : 51 sqq., Ved. cases p. 67 sqq.).

§ 2.5. Tibeto-Burmese

Still, this is not all as far as the Gangetic plains are concerned. The eastern section of the North Indian plains (E. Uttar Pradesh and N. Bihar) provides some indications of Tib.-Burm. settlements. The name of the Avadh (Oudh) area north of Benares in late Vedic texts is *Kosala*; this form should not appear in Vedic/Skt.; it should have been **Koṣala* or **Kośala* (as is indeed found in the Epics). The word clearly is foreign, and should belong, together with the slightly more eastern river name *Kauśikī* (post-Vedic, mod. *Kosi*) to a Tib.-Burmese (TB) language. Such designations for 'river' are indeed found in eastern Himalayish: R. *Kosi*, many Rai river names in -*ku*, -*gu*, in medieval Newari (*kho*, *khu*, *khwa*; *ko* 'river' in the unpublished Newari Amarakośa) and modern Newari (*khu*, *khusi* 'streamlet, creak') in and near the Kathmandu Valley, where it is already found in Licchavi time inscriptions, 467–750 CE, as: Cūllaṃ-*khu*, Theṅ-*khu*, Japti-*khū*, Huḍi-*khū*, Pi-*khu*-, Vihliṃ-*kho*-srota, Ripśiṃ-*ko*-setu. It is perhaps derived from TB **kluṅ* (details in Witzel 1993).

Perhaps one may add the name of the tribe around Benares (*Kāśī*) whose older, Vedic form is *Kāśi* (AV, still regarded as outsiders to whom one sends one's fever, PS 12.1–2), and its western neighbor, the *Kūśāmba*, *Kauśāmbi* (the later town *Kauśāmbī*, mod. village of *Kosam* near Allahabad). R. Shafer (1954) has a host of names, taken from the list of peoples in the much later Mahābhārata Epic that must be taken with caution (redaction only c. 500 CE, where even the Huns are included with *Hūṇa*, *Harahūṇa*, — they have become a Rajput clan!)

Indeed, early evidence for mountain tribes which might have been Tib.-Burm. is found in the Vedic texts all along the Himalayas. These mountain tribes, probably of Himachal Pradesh and Western Nepal, lived on the border of the Vedic settlement. They are first encountered in AV (1200 BCE) under the names *Kirāta*, in the western Himalayas where they appear as herb collecting mountain girls (*kairatikā kumarikā* PS 16.16.4, ŚS 10.4.14., *kailāta* PS 8.2.5). The more eastern text VS 30.16 has them as living in caves; cf. also the popular form *Kilāta* PB, JB, ŚB; (for details see Witzel 1993, 1999, and cf. KEWA I 211, EWA I 352, and also EWA I 311, s.v. *KAR*, and Prākr̥t *Cilada*).

An alternate form of the name, *Kīra*, may have been retained in Kashmir, attested in 550/600 CE (Br̥hatsaṃhitā 14.29). Its name is close to that of the *Kirāta* who are attested in the early inscriptions of Nepal (467 CE sqq.). Hsuan Ts'ang, Hsiyuki (c. 600 CE, cf. T. Funayama 1994: 369), however, knows of them as *Kilito* (Karlgren 1923, no. 329-527-1006), a people in Kashmir who had their own king shortly before his time. The *-ta/-ṭa* suffix is common in many North Indian tribal names (Witzel 1999, cf. above).

Since the RV, tribal names are found have the suffix *-ta/-ṭa* (Witzel 1999), e.g. *Kīkaṭa*, *bekanāṭa* (certainly a non-IA name: *b-*, *-ṭ-*), *Maraṭa* PS 5.21.3, 12.2.1, *Kirāta* AV, PS, *āraṭ(ṭ)a/arāṭṭa* BŚS (cf. Sumer. *Aratta*, an Eastern country, Sistan), *Kulūṭa*, *Kulūta* (Mbh), *Kulū-ta(ka)*, (but also: *Kolūta*, *Kaulūta*, *Kuluṭa*, and even *Ulūṭa*, *Ulūta*, see Kuiper 1991: 38 (cf. Pinnow 1959: 198f., cf. S. Lévy, JA 203, 1923, 52 sqq. = Bagchi 1929: 119 sqq.), finally *Kuḷu* in W. Pahari, CDIAL 3348, with the typical prefix change of Munda; *Virāṭa*, a king of the Matsya (Mbh) and a country in Br̥hatsaṃhitā, Pkt. *Virāḍa*, mod. Berar.

However, names in *-ta* (and *-nda*) are restricted to the Himalayan mountains while those with *-ṭa* (and *-ṇḍa*) occur all over the northern Indian plains (Witzel 1999). As for the origin of the suffix *-ṭa*, compare the plural suffix *-ṭo* in Nahali (Berger 1959, Mundlay *MT* II, 1996, 5, cf. Kuiper, 1991: 45 on 'Dravidian' *-ṭa*).

Beyond this, the early texts do not allow us to decide on the language and appearance of the *Kirāta*. (The Epic calls them gold-colored). However, MS and ŚB list them with the Asura ('demons') *Kilāta-Akuli*.

Apart from these Vedic sources for (possible) early Tibeto-Burmese, the earliest datable, and so far not utilized evidence is found in Nepalese inscriptions (467 CE+)[16]. The inscriptions are in classical Sanskrit, but contain a host of place names, some personal and tribal names, and even a number of non-Sanskritic, traditional local names for government offices which must be considerably older than c. 200 CE.

A note on the transcription of 'foreign' words in Sanskrit and in Indian alphabets is in order here. Just as in the case of adaptation of 'foreign words' to the R̥gvedic phonetical pattern, the local words of the Kathmandu Valley had to be adapted to the possibilities of Sanskrit pronunciation and of spelling them in the Gupta (Nāgarī style) alphabet.

- several vowels are used intermittently:
  i/e, *i/ī*, *u/ū/o* (also *va/o*), *r̥/ri/o* [ə,ɔ];

[16] Now there is one still older inscription which indicates Sanskritization of the valley already around the time of Jayavarman, c. 200 CE (see Kashinath Tamot and Ian Alsop, The Kushan-period Sculpture from the reign of Jayavarman, A.D. 185, Kathmandu, Nepal: Asian Arts, July 10, 1996, at: www.asianart.com / index.html).

- there is variation in some consonants as well, notably:
  d/ḍ (no retroflex!), *tt/ḍ*, *k/kh*, *b/bh*, *ll/l*, *s/ś* (no *ṣ* ?); *jñ* (common N. Indian pronunciation: *gy*?); note aspirated m, n, r |hm, hn, hr|.

Typical is the spelling of the government office *śolla/śullī/śulī* or of the name of the town of Bhaktapur in Licchavi inscriptions: *Khr̥puṅ*, *Khopr̥ṅ* [khɔpriṅ], *(Mā-)kho-*, > medieval *Khvapo*, *Khvapva(ṃ)*, *Khvapa*, *Khapva*, *Khopva* [khɔpa]) > mod. *Khvapya* [khɔpɛ], (for medieval names see Witzel 1999, 1993). Of importance is a variation (just as in Kanauri) that indicates implosive consonants: *co/cok/cokh.* — For all such variant spellings in the Licchavi inscriptions, see Witzel 1980: 327, n. 60, 69, 72, 74, 75, 87, 1993: 240 sqq., 248, n. 171–3, and 1993, n. 120, 152.

The actual attribution of the locally spoken language and its substrate found in the Licchavi inscriptions remains in the balance. It may be early Newari or a predecessor, the *Kirāta* language of the so-called *Kirāta* dynasty (see below) that reigned in the valley well before 200 CE and has left us with names of government offices such as *śulli*, *kuthera.* If it is indeed early Newari, it is a very archaic form, characterized by a large numbers of *initial* clusters (*Cr-*, etc.), which differ even from the oldest attested Newari texts (983 CE.) Such consonant clusters are very rare in medieval and certainly in modern Newari.

A clear case for TB is *ti* '*water*'; I have compared (1980 n. 90, n. 94) *co(kh)-*, *bu-*, *dol/dul*, *khu*, *gal/gvala* of the Licchavi inscriptions with mod. New. words: *-co* 'hill, mountain top', mod. New. *cwa*, *cwak-*, cf. Kaike *chwang*, Khaling *cong*; (note also *cuk* 'mountain range' in Gilyak); *-bu*, 'land'; O.New. *bu/bru*, cf. Tamang *pū*; *-gaa* '*village'? cf. Mod. New. "classifier for round objects, part of Kathmandu", O.New. *gvala(ṃ)*, but note Skt. *gola(ka)*, 'ball, globe'; perhaps cognate with TB (Benedict, 1972: 444) **r-wa* / **g-wa*; cf. 91 **wal* 'round'; *-ko* 'slope', *kwa*, *kwaa* 'down'; *pā-kā* 'slope of a hill'; cf. Thakali *koh-plen.* (K. P. Malla has explained some of such place names as being of Newari origin (1981: 17).

The long list of substrate names includes (place names not specified):

> aśiṅ-ko (area) (*ko* 'river? or *ko* 'slope?'), uṭṭane, uḍra, etaṅ- (village), kaṅku-laṃ (area) (*lam* 'road'?), kaḍam-priṅ (area) (*priṅ* = *pr̥ṅ*), kampro-yambī, kambīlampra, kāduṅ- (village), kuthera- (office), kuhmuṃ- (area) (see *hāhmuṅ*), keṭumbāṭa (name of a Kirāta official), kośī (river), khaḍabraṃśai, khārevālga-co (*co*, *cok* 'pass'), khuḍū- (deity), khr̥puṅ- (village), khainaṣpu (area), kho-pr̥ṅ- (village), gamme (area), tuñ-catcatu- (village), thuṃtuṃ-rī- (fortress), daṇḍaṅ-guṃ, dommāna, panapphu (area), puṇḍri- (palace), puttī- (river), prayiṭṭikhā (area), proṅprovāṅ, brahmuṅ (office), bhumbhukkikā- (deity), māp-cok- (office) cf. *-co(k/kh)* 'pass', yebraṃkhara, rogamācau (watchman), liṅ-gvala- (office), vottarino?, voddi- (province), śulhmuṅ (office), śolla, śullī, śulī (office), hasvimavallī- (village), hāhmuṅ- (place), hnā-guṃ , hmas-priṅ- (village), hnu-priṅ, hrīm-ko (area), and many more.

All these data have not yet been exploited for Tib.-Burm. linguistics. (For place names, see Witzel 1980, 1993; for relations between the eastern Himalayan languages and Munda, s. Kuiper 1962: 42, with Nahali, p. 46f; cf. Laufer 1916–18, 403 sqq.).

The Kathmandu Valley, however, seems to have has its own strange substrate, below this Tib.-Burm. level. It is visible in some place names which definitely do not look Tib.-Burm. Some of them are characterized by the geminates studied above: *gamme*, *gullataṃga*, *gollaṃ*, *jajje*-, *dommāna*, *daṅkhuṭṭā*-, *bemmā*, cf. also *bhumbhukkikā* (onomatopoetic with double consonant < **bhumbhum-ki-kā*?).

§ 2.6. Other Himalayan Languages

D. D. Sharma, Old-Indo-Aryan element in Kinnauri (in: R.K. Sharma et al. (eds.), *Dr. B. R. Sharma felicitation Volume*, Tirupati 1986, 149–155) describes older elements in the Kōchī dialect, spoken in the western part of the former state of Bashahr, along the upper Satlej River. The vocabulary given by Sharma, however, shows traces of OIA, MIA and NIA — as might have been expected. One curious feature of L.Kin. is the division of nouns in animate (suffix -*s*) and inanimate (suffix -*ṅ*) which he compares to that of the Munda languages, while he links the endings to OIA masc. -*s*, neuter -*m*.

However, his materials represent a mixture of OIA, MIA and NIA forms that have to be separated. Typically, we find OIA *kvath* 'to boil' preserved as *kwath* or *grāma* 'village' as *grāma-ṅ* (as opposed to NIA gaũ/gaõ etc.); next, forms which represent a MIA stage such as *sappa-s* 'snake' < *sarpa*, and NIA forms such as *bāyā* 'brother' < *bhrātā*, *tau* 'heat' < *tāpa*, *dauya-ṅ* 'curds' < *dadhi*, *ana-ṅ* 'food' < *anna*, or *māmā* 'maternal uncle'. There are several cases of "Gāndhārī metathesis" as well: *trāma-ṅ* 'copper' < *tāmra*, cf. *grota-ṅ* 'cow urine' < *gomūtra* etc.

The case is of interest as it shows, just as that of early Burushaski, the interaction of plains and mountain people (cf. also, below, on Bangani). The present case also provides some indication of the early date of such interaction between IA and TB speakers; this may be reflected even in AV, if the *Kirāta* indeed are TB speakers, and if the name has not been passed on from an unknown earlier population (cf. the Kashmiri *Piśāca*, *Nāga* traditions, above) to TB speakers.

However that may be, from at least 1100 CE onwards, we see an increasing Aryanization of the western Himalayas and W. Nepal with the spread of the *Khaśa* tribe (found already in Manu's law book); by 1150 CE they are still mentioned in the Rājataraṅgiṇī as settling southwest of the Kashmir Valley. *Khas kurā* is the self-designation of what was called the "language of the Gurkhas" (in Newari called *khaṃ̆y* < *khas*); they have substituted the name Nepali only in this century. By 1150 CE they had established the W. Nepal/C. Tibetan Malla kingdom; by 1769 they had conquered the Kathmandu Valley; and by 1900 they had settled, mixed with Gurung, Magar, and other TB tribes speaking Nepali as lingua franca, in Darjeeling, Sikkim, S. Bhutan and some parts of Assam. This movement is indicated by their renaming of river names all across the Himalayas (Witzel 1993).

Some part of the Himalayas may also have been occupied by the pre-Tibetan language of W. and Central Tibet, Zhang Zhung. (See the list of Zhang Zhung words, Thomas 1933, C. Beckwith, *The Tibetan Empire in Central Asia*. Princeton University Press: 1987. The history of the settlement of the Himalayas is far from clear. (For some details, based especially on hydronomy, see Witzel 1993, and cf. now van Driem http: //iias.leidenuniv.nl /host /himalaya/). For example, the Thāmi tribe who live higher up in the Tāma kosi valley east of Kathmandu belong, as their language shows according to Shafer (1964: 3 n.1), to the Western Himalayish group of the Bodic division of Tibeto-Burmese (Kanauri, etc.). Indeed, the Thāmi claim to have immigrated from Humla in northwest Nepal. This is one indication among others (Witzel 1993) that there was a west-east flow of population and languages, similar to the much later one of the Nepālī speaking Khas tribe.

The intriguing question of Bangani has not been entirely resolved. Bangani is spoken just east of Kinnauri, in the western-most tip of Garhwal, Uttar Pradesh. Zoller (1988,1989) has reported a non-IA substrate in this otherwise typical NIA language found high up in the western Himalayas. Surprisingly, this substrate is a strange western variety of IE with words such as *ɔgnɔ̃* 'unborn' (not Skt. *a-ja*) and *gɔṇɔ* 'give birth' (not Skt. *jan*), *kɔtrɔ* 'fight' (not Skt. *śatru*), *dɔkru* 'tear' (not Skt. *aśru*); the initial *d-* is W. IE, cf. Greek *dakru*, Engl. *tear*, as opposed to E. IE : Skt. *aśru*, Avest. *asru*, Lithuanian *ašara*. This claim has been disputed by G. van Driem (1996, 1997), but has been sustained by research carried out in Bangan by Anvita Abbi of Delhi University (see H.H. Hock [On Bangani] http: //www-personal.umich.edu /˜pehook /bangani.html, with further discussion). Anvita Abbi recognizes three layers in Bangani: words of the type *dɔkru*, *lɔktɔ*, *gɔsti*, the general NIA Pahari level, and recent loans from Hindi, etc.

In principle, bands or tribes who have 'lost their way' and turn up in unexpected areas are not altogether unknown. Tokharian, the easternmost IE language, has western characteristics (*känt*, *känte* '100'), and the North Iranian Alani, ancestors of the Ossetes, traveled all the way through Central Europe, Spain and North Africa with the Germanic Vandals, to settle in Tunisia.

Tib.-Burm. is, however, not the first language in the Central Himalayas. In Nepal it has been preceded by the isolate of Kusunda, genetically unrelated to other language families just as Burushaski (see below). Kusunda has recently been treated at length in *MT* II and III (cf. Shafer, 1966 : 145; 1954 :10 sqq.) The language is reported to have died out by now. It is important to point out the difference between Hodgson's (1848, 1880) and Reinhard's (1969, 1970) Kusunda, a point also mentioned by P. Whitehouse *MT* III : 31; however, these differences extend beyond the grammatical forms cited to the basic vocabulary, e.g. *gipan* 'hand' H(odgson) : *āibi* R(einhard); *ing gai* 'star/night' H : *sā'nām* R (cf. *ing*, *ing ying* 'sun'); *jum* 'moon' H : *niho'* R; cf. also smaller variations: *toho* 'tooth' H : *uhu* R; *gitān* 'skin' H *gitat* R. It goes without saying that, for a thorough investigation of Kusunda, the loans it has received from Nepali and some of the neighboring TB languages such as (Kham-)Magari, Gurung, Chepang, Newari, etc. must be taken into account, and that its relation to the nearby substrate in Tharu (and Masica's "Language X") needs to be evaluated.

In passing, the old theory of a Munda substrate in the Himalayas should be revisited. It goes back to S. Konow, On some facts connected with the Tibeto-Burman dialect spoken in Kanawar, *ZDMG* 59, 1905, 117–125. This has been denied by P.K. Benedict, Conspectus, p. 7, n. 23, by J. J. Bauman (1975) Pronouns and Pronominal Morphology in Tibeto-Burman; and G. van Driem 1992a, 1993b, 1993f, 1993g, 1994b, 1995a, 1997c, Rutgers 1993, Turin 1998 (see website : http: //iias.leidenuniv.nl /host /himalaya /individ /kirmor.html).

Nevertheless, it must be remembered that the name of the R. Gaṇḍakī can be traced back to Munda. It is found all over Central Nepal, where the major rivers are called "the seven Gaṇḍaki". How far into the Nepalese hills did the settlements of a Munda speaking people reach? Even in exclusively Nepali speaking W. Nepal, the common hydronomical 'suffix' *gāḍ* denoting 'river' may be connected with the Munda word *da'k*, *ganda'k* (Witzel 1993, 1999; further materials in Kuiper 1962: 10, with lit.; and already B. H. Hodgson, Comparative vocabulary of the languages of the broken tribes of Nepal, in: Miscellaneous Essays related to Indian Subjects, Vol. I p. 161 sqq., London 1880; cf. On the Chépáng and Kúsúnda Tribes of Nepál, JASB XVII/2, 1848, p. 650 sqq.).

A further hint may be provided by the implosives found in the substrate of the Kathmandu Valley (*cokh/cok/co*, see above) and in Kanauri (see Grierson, LSI on Kanauri). We may see here an areal feature of implosives that has influenced both the Tib.-Burm. languages in Kinaur (Kanauri) in the western Himalaya and in the Kathmandu Valley. Apart from Munda and Sindhi, this feature is otherwise not found in S. Asia. There are indications in the eastern Himalayas of a pre-TB population (Witzel 1993). Even today, the Munda languages Satar and Santali are actually spoken in the extreme south-east of Nepal (probably, like the Kurukh, recent imports). Other Munda speakers are, after all, found south of the Ganges, only about a hundred miles south of Eastern Nepal.

Finally, there are the various Tharu tribes who live in the foothills of the Himalayas, from the Rāmagaṅgā river in U.P. (India) to the eastern border of Nepal, and in some bordering hill tracts, such as in the Rāptī Valley (Chitawan, just 50 miles SW of Kathmandu). They practice slash-and-burn agriculture and nowadays speak a form of one of the neighboring NIA languages, just like the Nahali or Vedda (see below); however, I believe that we can find, again, a so far unstudied substrate from a pre-IA, Pre-Munda language.

Although often referred to as an archaic, remnant group, they have been little studied (cf. the bibliography in Leal 1972). Some of the vocabulary looks TB: for example TB *ti-* 'water' in Tharu *suitī* 'small river.' (For *-ti* in Himalayan river names, see Witzel 1993). And indeed, D. N. Majumdar, The Fortunes of Primitive Tribes, Lucknow 1944 reports blood group types 'predominantly Mongoloid.' This is now supported by recent, more advanced genetic studies. The Tharu are very isolated within S. Asia (L. Cavalli-Sforza 1994: 84, 239 with fig. 4.14.1). As for the suspected substrate, D. Leal, *Chitwan Tharu Phonemic Summary.* Kirtipur Summer Inst. of Linguistics 1972, provides an example of the influence of their original non-NIA language, i.e. the difficulty the Chitaun Tharu have to pronounce aspirated mediae (*bh* > *bəh*; cf. above, on the Kathmandu Valley substrate).

The Tharu word list in S. M. Joshi (ed.) *Paryācavācī Śabda Koś*, Kathmandu : Nepal Rājakīya Prajñā-Pratiṣṭhān VS 2030 (1974) contains lists of 2914 words, most of which are close to Bhojpuri and Nepali; there are, however, a number of words (cf. Witzel 1999, n. 43) which are neither related to the surrounding IA languages nor to the nearby TB ones (Magar, Chepang, Newari, Tamang) such as: *ubbā* 'small box,' *koṅhilā* 'tiger', *khūdī* 'sugar cane', *gukhā* 'shaman', *gulagula* 'mild', *gẽṭṭī* 'splinter', *jhemjhemiyā* 'small cymbal or drum', *ṭippā* 'mountain top' (probably NIA), *ta* 'small', *tīra* 'afterbirth', *tīlvā* 'whore house', *nimak* 'salt', *bhubhui* 'white scurf', *yedi* 'brick'. But the agricultural terms are NIA: *bājrā* 'millet', *dhān* 'rice', *makai* 'maize', *gehūṃ* 'wheat', as well as most of their basic vocabulary.

All these cases indicate that we probably can discover more substrates if more work along these lines would be done. But we lack etymological dictionaries for most NIA languages (apart from Turner's great work, CDIAL), not to speak of Munda (in preparation by D. Stampe et al.) and TB; (see, however, those on the internet: Starostin et al., accessible from: http: //starling.rinet.ru/). For example, it may very well be that the Bihari languages have more Tib.-Burmese substrate words. There is, after all, *cāmal* 'cooked rice' in Nepali, *cāwal* in Hindi, etc. which can be connected with TB **dza* 'to eat', Newari *jā* 'cooked rice, etc.' Yet, nobody in Indian Studies is looking for such substrate material.

§ 3. Central and South India.

Turning further South, the language isolate Nahali is spoken on the upper Taptī river on the border of Maharashtra and Madhya Pradesh. To be more specific, Nahali nowadays is a NIA language, but it shows below this, at successively lower levels, a Dravidian, a Munda and an isolated level which comprises some 24% of its vocabulary (Kuiper 1962: 51, 1966). The speakers of modern Nahali, to be short, *the Nahals are the remnants of the first Indian population.* At least, they have preserved the remnants of the *earliest language spoken in India that we can ascertain* so far. Future comparisons may lead us beyond that, for example the proposed comparisons between Nahali and Ainu, or between Andamanese and Papua (Indo-Pacific).

Nahali has been extensively treated in this macro-comparative way in *MT* II and III. As has been first seen by Shafer and Kuiper, Nahali has connections with Ainu, etc. (for which now see *MT* II), and thus represents remnants of the earliest substratum of modern *homo sapiens sapiens* that moved from the Near East all the way to E. Asia (and S.E. Asia, Australia). However, it must be noted that the retroflex sounds in Australian are a relative new development as well and cannot be the cause of their (almost) Pan-South Asian prevalence in prehistoric times.

Berger (1959) was of the opinion that the Nahals were identical with the well known *Niṣāda* of the Chambal, Malwa and Bandelkhand areas. He discussed their mythology as found in the Mahābhārata; however the *Niṣāda* are found already in the Middle Vedic texts. The Nihāl or Nāhal are also found (Berger 1959: 35) in many medieval texts, such as in Hemacandra's Grammar (c. 1200 CE) as *lāhala*; in Padma Pur. *nāhalaka*, together with the *Bhilla*, as mountain/jungle tribe; in Puṣpadanata's Harivaṃśapurāṇa as *ṇāhala*, synomym of *bhilla*, *savara* (another jungle tribe : modern Saora); also in Vikarmaṅkadevacarita of Bilhaṇa (c. 1150 CE), and in Rājaśekhara's drama Bālarāmāyaṇa (on the R. Narmadā). Berger wanted to identify them with the *ḍahāla* as well; they are found in inscriptions of the Kalacuri dynasty of Tripurī and in Albiruni (1030 CE). All of their territories are c. 400 km away from the modern eastern Nahalis near *Nimar*.

He thus derived Nahal/Nihal from a form such as **nešad* reflected by Ved. *Niṣāda*. Indeed, the word is found in early post-RV texts: KS, MS, and with the typical sound changes in 'foreign' words: Niṣāda : **Niṣidha* : ŚB *Naḍa Naiṣidha*, (apparently the Vedic 'ancestor' of the Epic *Nala Naiṣadha* : **Niṣadha*); thus *d*: *dh* (as in *Magadha* : *Pra-magandha*, etc.). The name certainly is a popular etymology (however, the modern self-designation of the Nahals is *kalṭo*, du. *kalṭih-ṭel*, pl. *kaliṭṭa*; < stem **kaliṭ-o*, s. Kuiper 1962: 82, 17, 27, Mundlay *MT* II 5–7, no. 858 *kalṭ o*, pl. *kolṭa*).

The Niṣāda are described in Vedic texts (first MS 2.9.5 =KS 17.13, TS 4.5.4.2, VS 16.27) as being "neither wilderness (*araṇya*) nor settlement (*grāma*);" who are "given over to the earth:" (*asyām eva parīttāḥ*), next to *jana* '(foreign) tribe' PB, other non-Brahmins (JB), and *samānajana* "one's own people" (cf. PB 16.6.7–9); cf. also KB 25.15, LŚS 8.2.8 on temporary residence in a *naiṣāda* settlement. Similarly, MS 2.9.5 describes the Niṣāda, among Rudra's names and his people, together with hunters and other low caste people (=KS 17.13, TS 4.5.4.2, VS 16.27); — AB 8.11

as robbers in the wilderness; similarly the *dasyu* JB 2.423:§168, where the text insists on Kṣatriya accompaniment during travel, necessary to keep the Dasyu at bay and turn them "sweet (*madhu*)" cf. AB 8.11 where the dasyu rob a wealthy man or a caravan in the wilderness. Acculturation is seen at MS 2.2.4, where their chief (*sthapati*) is allowed to offer sacrifices, cf. KŚS 1.1.12. The inclusion of the headman of the Niṣāda reflects the well-known process of upward social movement, called "Sanskritization." (Witzel 1997)

Their Vedic designation obviously is a popular etymology "those who sit at home." However, they are more frequently described as robbers (still a favorite occupation of the Nahals in early British times) — against whom one had to guard when traveling through uninhabited territory. Their chieftains (*sthapati*), however, were allowed into the Aryan fold and could perform solemn Vedic sacrifices, clearly an early form of Sanskritization.

It may very well be that Rajasthani has a strong Bhili (and Nahali) substrate; Koppers (1948: 23, Kuiper 1962, 1966, 1991) and Shafer (1940, 1954: 10) thought that the Bhils once spoke Nahali as well. The Bhils are now widely spread between the Ārāvaḷā (Aravalli) Mountains, the Vindhya Mts. and the Tapti River (Khandesh area); they now speak Gujarati-like IA.

In the Vindhyas we find a number of north and central Dravidian languages. However, both North Dravidian languages, Kurukh (Oraon, on the borders of Bihar/Orissa/Madhya Pradesh; the settlement in Nepal and Assam is recent) and Malto (on the bend of the Ganges in S.E. Bihar) are late-comers to Munda territory as many loans from Munda languages indicate. On the other hand, the third north Drav. language, Brahui, spoken in Baluchistan has returned to E. Iran only a few hundred years ago (Elfenbein 1987); it has no older Iranian loans (from Avestan or Pashto, just from their symbiotic neighbors, the Baluch).

In the Vindhya Mountains we find such names as the following: the *Vidarbha* people, in the area around Nagpur, (the mod. *Barhāḍ, Berar* < *Virāṭa*, Mbh) are mentioned (JB), along with their fierce *mācala* dogs 'that kill even tigers' (note that this is an area with early iron and horses). *Vidarbha* seems to be a popular etymology *vi-darbha* 'with widely spread *darbha* (grass)', especially if connected with Munda *da'b* 'to thatch' (Pinnow 1959: 69), cf. *vi-bhindu* in the Gangetic plains (above). The name of the Vibhindus is related to that of the *bainda* tribe (derived from **bind*) that still survives in the Vindhyas today, and names such as *Ku-sur(u)-binda* (above). The very name of the Vindhya (post-Vedic) can be related, with typical Sanskritizing interchange of *d* : *dh*, as in *pra-maganda* : *Magadha*, (above). East of these mountains, we have the Kaliṅga (cf. Triliṅga south of Orissa) and Aṅga, Vaṅga. All of these are names that hardly have a Drav. etymology, but which look Austro-Asiatic because of their prefix changes.

However, all around Vidarbha, the first Drav. river names are met with : the *Pūrṇā* (< **pēṇ*) west of it, the *Vēn-Gaṅgā* east of it, and the *Pain-Gaṅgā* south of it. They all are adaptations of a Drav. term for rivers, DEDR 4160a **pēṇ*-: **peṇ-V-* 'to twine, twist'. It seems that the area which still has a Munda name in the Vedic middle period (*vidarbha*) has also received a Dravidian overlay. This is confirmed by Drav. place names in *-oli* in Maharastra and in *-palli*, *-valli*, *-pal* in Bastar, just east of the Vidarbha area (now southernmost Madhya Pradesh) where they range from 21% in the south to only 0–4% as one approaches the Raypur plains. The south and southwest of Bastar is occupied by the Drav. Gonds, all other regions by Chattisgarhi Hindi speakers. (For an overview of studies in (South) Indian place names see the paper by M.N. Nampoothiry, Indian Toponymy.

A critical evaluation of the work done in this field in India with a bibliography in: Puthusseri Ramachandran and K. Nachimuthu (eds.) *Perspectives in Place Name Studies : Proceedings of the National Seminar on South Indian Place Names, Held at Trivandrum on 21–23 June 1985. A Festschrift to Prof. V.I. Subramoniam, On His Sixtieth Birth Day.* Trivandrum: Place Name Society, 1987. p. 1–47, — including a good bibliography, also of unpublished Indian theses).

The South is frequently supposed to have been Dravidian from times immemorial. However, in the refuge area of Nilgiris with their isolated Drav. tribes (Toda, etc.), we find a substrate, see Zvelebil 1990, 63–70. Isolated words indicating this pre-Drav. substrate (Zvelebil 1990: 69f., Zvelebil 1979: 71f.) include the following Irula words *mattu* 'lip', *ḍ ökënë*, *ḍëkëne*, *ḍëkena*, *ḍëkkada* 'panther', *ovarakaṅku*, *ōrakaṅku*, *ōraṅgeku*, *ōraṅge*, *ōrapodu* 'tomorrow' (unless DEDR 707 Tam. *uṟaṅku* 'to sleep'), *buṇḍri* 'grass hopper' (unless DEDR 4169), *muṭṭ(u)ri* 'butterfly' (unless DEDR 4850 *miṭḻ* 'locust'), *vutta* 'crossbar in a house'. These instances should encourage Drav. specialists to look for substrates in Tamil, Telugu, Kannada, etc. However, just like the propagators of indigenous "Aryans" in the North, Dravidians of the South frequently think that they are autochthonous.

In Sri Lanka, the remnant population of the Vedda now speaks Sinhala. (De Silva, M.W. Sugathapala, Vedda language of Ceylon; texts and lexicon. Münchener Studien zur Sprachwissenschaft. Beiheft n.F. 7. München: R. Kitzinger, 1972). The substrate that they may have preserved is in urgent need of thorough study, carried out by comparing Pali, Sinhala and Tamil words. Some typical words, interestingly many with geminates, that cannot be linked either to Sinhala or to Tamil are: *cappi* 'bird', *munḍi* 'monitor lizard', *potti* 'a kind of bee', *panni* 'worm', *rukula* 'home, cavity' (see de Silva 1972 : 16; his vocabulary, pp. 69–96, does not contain etymologies).

Finally there is Andamanese, but unlike the Austro-Asiatic Nicobarese, so isolated that it can only be compared in long-range fashion, with other Australo-Pacific languages.

§ 4. The Northwest.

We now return to a region for which we have larger amount of early sources, the Greater Panjab, the area of the first Indo-Aryan influx into the subcontinent as reflected by the hymns of the RV. As has been pointed out, the R̥gvedic area is characterized by an almost total substitution of local, pre-IA river names by those of IA type, such as *Gomatī* 'the one having cows' (mod. *Gomal*), *Mehatnu* 'the one full of fluid", *Asiknī* 'the black one' (now *Chenāb*). Tribal names, include next to typical IA ones (*Druhyu* 'the cheaters', *Bharata* 'the ones who carry (sacred fire?),' many that have no plausible IA etymologies, such as: the *Gandhāri* tribe of *Gandhāra*, the area between Kabul and Islamabad in Pakistan; *Śambara*, a mountain chieftain; *Vayiyu* and *Prayiyu* (chieftains on the *Suvāstu*, modern Swat); *Mauja-vant*, a Himalayan peak. This kind of evidence indicates the typical picture of an intrusive element, the IA, overlaying a previous population. Unlike Northern America for example, only a few pre-IA river names have survived, such as: *Kubhā* (mod. Kabul river), *Krumu* (mod. Kurram), and maybe even the *Sindhu* (Indus); these have no clear or only doubtful IA/IE etymologies (see below).

North of this area, at the northern bend of the Indus (Baltistan/Hunza), the language isolate Burushaski is spoken whose prehistory is unknown (cf. now *MT* II, III). However, the language and the tribal name are indirectly attested in this general area ever since the RV: **m/bruža* (mod.

burušo) > Ved. *Mūja-vant*, Avestan *Muža* (see below). Indeed, already the RV contains a few words which are still preserved in Bur., such as Bur. *kilāy*, Ved. *kīlāla-* 'biestings, a sweet drink' RV 10.91.14, (note AV 4.11.10 next to the loan word *kīnāśa*, see above); *kīlāla* cannot have a IA etymology (EWA I 358 'unclear'); continuants are found in the Dardic branch of IA (Khowar *kiḷāl*), and in Nuristani (*kilā́* etc.), as well as in later Skt. *kilāṭa* 'cheese', cf. DEDR 1580 Tam. *kiḻāaṉ* 'curd'); for details see Kuiper 1955: 150f., Turner, CDIAL 3181, Tikkanen 1988. Further, the following words, *mēṣ* 'skinbag', CDIAL 10343 < Ved. **maiṣiya* 'ovine', *meṣa* 'ram' RV; *gur* 'wheat' pl. *guriṅ/gureṅ* < *γ*orum*, *gurgán* 'winter wheat', cf. Ved. *godhūma*; *bras* 'rice', different from *briú* 'rice (< Shina *briú*), cf. Ved. *vrīhi*; *bus* 'sheaf', CDIAL 8298, cf. Ved. *busa*, *bṛsī* 'chaff' (cf. Pinnow 1959: 39); *ku(h)á* (Berger *γuá*) 'new moon', cf. Ved *kuhū* 'deity of new moon'; *γupas* (Berger *gupás*) 'cotton', cf. Ved. *karpāsa*, Kashm. *kapas*; *baluqa* 'stone' (in a game), cf. *báltaṣ* 'stone thrown at someone', cf. Ved. *paraśu* '(stone) ax', Greek *pélekus*, see EWA II, 214; *baṅ* 'resin of trees', *baṅ* ~ IIr *bhaṅga* 'hemp, cannabis', cf. Khowar *boṅ*. Most of the words from IA languages in Turner's CDIAL that have Bur. correspondences are, however, late loan words from the neighboring Dardic languages, especially from Shina and Khowar (cf. Lorimer 1937, Berger 1959, 1998).

Importantly, in Proto-Burushaski (or in its early loans from the lowlands) and the pre-Vedic Indus language there is, as treated in § 1.10, there is interchange of *k/ś*, and retention of *-an-* (not > *-o-*): Bur. *kīlāy* : Ved. *kīlāla*, but *šon* 'blind one-eyed' : Ved. *kāṇa*; *γoro* (Berger *γuró*) 'stone, pebbles', cf. Ved. *śar-kara*, cf. also (Witzel 1999) *γoqares*, Berger *γókuraċ* 'raven', Ved. *kāka*; Bur. *γaśú* 'onion', cf. Ved. *laśuna*, Shina *kaśu*; *γon*, Berger *γúun* 'quail', cf. (?) Ved. *laba*. It has indeed occasionally been maintained that Burushaski extended into the Panjab in earlier times (L. Schmid 1981, Tikkanen 1988), but the Vedic evidence does not support this. We cannot be sure exactly how far Ṛgvedic geographical knowledge extended northwards, and how much practical interaction existed between RV and Proto-Burusho people. Yet, the RV knows of some small right side contributory rivers of the Indus that are located north of the confluence with the Kabul River; they have IA names: RV 10.75.6. *Tṛṣṭāmā* < *tṛṣ* 'the rough, (or) the dried up (river)', *Susartu* 'the one running well', *Rasā* 'the one full of sap', *Śvetī* 'the white one'.

While it is questionable how far south Burushaski territory extended at this early time, some of the loan words mentioned above indicate that there was early contact. That extends perhaps also to medicinal and other herbs (cf. below on *Kirāta*), for it may be that the name of the Burušo is reflected by the RV mountain name *Mauja-vant* "having *Mūja* (people)", cf. the east Iranian equivalent, Avestan *Muža*. This is the mountain where the best Soma, a hallucinogenic plant, comes from. The RV and E. Iranian (Avestan) forms look like adaptations of the local self-designation, **Mruža*, Vedic *mūja-*, Avest. *muža*, and are attested since the middle of the first millennium in early Tib. *bru-ža*, Sanskritized *puruṣa* (von Hinüber 1989, 1980), local 10th cent. inscriptions *prūśava* (Jettmar 1989: xxxvii), mod. Bur. *Burušo*.

Phonetic reflexes of Bur. have been seen (Tikkanen 1988) in the Vedic (and Dravidian) retroflex consonants that have otherwise found a number of explanations, from a Dravidian substrate to an internal East Iranian and Vedic development. The occurrence of these sounds clearly reflects an areal feature that is strongest in the Northwest, but extends all the way to Tamil in the South, and has also influenced Munda to some extent. Below, it will shown that it is an ancient feature of the Indus language as well, and that it must not be traced back to Bur. influence, which seems to have been limited, even in R̥gvedic times, to the upper Indus valley.

Some early syntactic influence by Burushaski on Vedic in the formation of the Absolutive has been assumed by Tikkanen (1988); it is found already in earliest RV but only as past verbal adverb/conjunctive participle. This clearly S. Asian feature, unknown in the sister language of Vedic, Old Iranian, is also found in various degrees in Drav. and Munda, and may have been an early regional feature whose ultimate origin remains unclear (cf. Witzel 1999)

Another modern language in the same area is Khowar which belongs, along with Kashmiri, Swati, etc. to the Dardic branch of IA. In its phonetics and vocabulary, however, it shows a strong local substrate, similar to Burushaski. Unique for Khowar, however, is a particular substrate whose origin remains unclear so far. It seems that the Khowars are a late immigrant group who have taken over a Dardic language. Substrate(?) words in Khowar which are neither IA nor Burushaski include (Kuiper 1962: 11, cf. Morgenstierne 1947: 6, Lorimer 1935 : xxi): *γec* 'eye', *ap'ak* 'mouth', *krem* 'back', *camoṭh* 'finger', *iskī* 'heel', *askār* 'lungs'. Kuiper (1962: 14) compares *γec* 'eye' with Bur. *γai(c)-*, *γ'i-*, *γe-ic-* 'to appear, seem, be visible', and with *g'e-* 'to look, seem, appear', *da-g'e-* 'to peer' of the Munda language Sora and with Parengi *gi-* 'to see'. (Differently, Morgenstierne, FS Belvalkar, 2nd section p. 91.) For Bur. loans in Dardic and in Nuristani see Tikkanen 1988: 305 (*cumar* 'iron', *ju* 'apricot', etc.), cf. Fussman 1972 II, 37 sqq.; Lorimer 1938: 95, Morgenstierne 1935: xxi sqq., 1947: 92 sqq.; Schmidt 1981, Berger 1998.

The neighboring area, Kashmir, is of great interest. Its prehistory is little known. In the Neolithic, there were relations with Central Asia and China, but the influence of the Indus civilization (2600–1900 BCE) is strong and long-lasting; of course, this does not tell us anything about the language(s) spoken then. Unfortunately, the Vedic texts, which know of the neighboring Indus valley do not mention Kashmir by name. It is first mentioned by the grammarian Patañjali (150 BCE). The native Kashmiri texts (Rājataraṅgiṇī, Nīlamata Purāṇa, cf. Witzel 1994, Tikkanen 1988, L. Schmid 1981), however, know of the previous populations, the Piśāca 'ghouls' and the Nāga 'snakes' (that can change into human shape at will). These are common names for 'aboriginals'; cf. the Tib.-Burm. Naga tribe on the Burmese border. Yet, these designations may retain some historical memory. The chief of the Piśāca is called Nikumbha (Nikumba in Milindapañho), and the Nāgas have such 'foreign' names such as *Karkoṭa*, *Aṭa*, *Baḍi*, *Bahabaka*, *Cāṭara*, *Cikura*, *Cukkaka*, etc. The list of some 600 Kashmir Nāga names in the local Nīlamatapurāṇa contains many such non-Sanskritic names; they have not been studied (see Witzel, in press).

Just as in Northern India and Nepal, most river and place names in Kashmir have been Sanskritized; note, however, the river and place names: *Ledarī*, a river in the SE of the Valley (also in the place name *Levāra* < *Ledarī-agrahāra*); *-muša*, a 'suffix' in the names of several villages: *Khonamuša* (mod. *Khun^{a}moh*), *Katīmuša,* (mod. Kaimoh, next to *Kati-kā*), *Rāmuša* (mod. Ramuh); also, the *Pañcāla-dhāra* mountain, (mod. (Pīr) *Pantsāl* range, south of the Valley), may reflect an old name, cf. the Ved. tribal name Pañcāla, and Grierson, Dict. of Kashmiri III : 744; cf. Nepali *himāl* 'Himalaya range', CDIAL 14104. Such names have not been studied in detail (cf., however, L. Schmidt 1981, Witzel 1993).

Like all other Indian languages, the Kashmiri language itself has not been thoroughly scrutinized for more substrate materials, cf., however, the report by L. Schmidt (1981), who assumes that 25%

of the vocabulary and toponymy belong to a pre-IA substrate. A. Parpola (Tikkanen 1988: 305) thinks of a Proto-Tib. or Sinitic substrate. However, the peculiar phonology of Kashmiri (and Dardic in general) sustains the assumption of a strong northwestern substrate influence.

In the northwest another IIr. language which shares some regional peculiarities with Dardic, is spoken: Nuristani or Kafiri, as it was formerly called, is (differently from the older handbooks which lump it together with the Dardic branch of IA) a third branch of the Indo-Iranians (G. Morgenstierne, Irano-Dardica. Wiesbaden 1973). It has survived in the mountains of East Afghanistan and in neighboring Chitral (N.W. Pakistan). The Kalasha (Chitral) subgroup have even preserved their ancient non-Hindu and non-Iranian religion. Nuristani has preserved such sounds as IIr. *ć* that has been changed even in the RV > *ś* (c. 1500 BCE) and in Old Iranian > s. It has transmitted at least one loan word into Vedic, Nur. **kāt́śa* > Ved. *kāca* 'shining piece of jewelry' (K. Hoffmann 1986, EWA I 335).

Finally, one must be open to assume the influence of other substrate languages in the Hindukush/Pamir areas. There are local personal names such as RV *Śambara Kaulitara* and his father **Kulitara* who are 'in the mountains', *Prayiyu* and *Vayiyu* in Swat; names of demons (as always, intentionally confused with those of real, human enemies) such as *Cumuri*, *Namuci*, *Uraṇa*, *Arbuda*, *Pipru*, *Śambara*; tribal names such as *Gandhāri*, *Dr̥bhīka(?)*, *Varc-in(?)*; river names such as *Kubhā*, *Krumu*, *Sindhu(?)*. Note also that the Avesta (Videvdad 1) speaks about some of these areas, notably *Varəna* (Varṇu) as *an-airiia* "non-Aryan".

§ 5. Indo-Iranian substrates from Central Asia and Iran

Beyond this area, Central Asia must have been the source of a host of unstudied words in Proto-IIr., which are found both in IA and Old Iranian but which do not have an IE etymology and must represent the language of the Bactria-Margiana region (BMAC culture 2100–1900 BCE), or other Central Asian substrate(s). They include plants, animals, and material culture; their concentration in the area of brick-built settlement and agriculture as well as some newly introduced animals should be noted. Such words, as found in Ved. /Avestan, include:

• *uṣṭra* / *uštra* 'camel', middle and new Akkadian *udru* "Bactrian camel" is a loan from Iran, see EWA I 238, KEWA III 652, cf. Diakonoff in *JAOS* 105, 1985, 600; the camel was introduced into the BMAC area from Central Asia only in the late 3rd mill. BCE.

• *khara* / *xara* 'donkey', cf. Toch.B *ker-ca-po* < **karca-bha*?, with the common Indian animal suffix *-bha* (as in *garda-bha*, *śara-bha*, *r̥ṣa-bha*); the word ultimately may be a late 3rd mill. Near Eastern loan, cf. Akkad. (Mari) *ḫārum*, *ajarum* 'male donkey', EWA I 447. Note also the overlap with Dravidian (denied by EWA 473): Drav. **garda* > Tamil *kaḻutai*, etc., one of the few possible links of a Central Asian substrate with Dravidian (and with Vedic);

• *iṣṭi*, *iṣṭikā* / *ištiia* 'brick', *zəmōištuua* 'clay brick'; OP. *išti*, MP., NP. *xišt*; cf. Toch. *iścem* 'clay'? Clay bricks are unknown in northern Central Asia (Kazakhtan), the putative homeland of IIr (except for their sudden appearance in the Sintashta Culture east of the Urals, c. 2000 BCE, for which a link with the BMAC has been supposed);

• *sthūna* / *stūnā*, *stunā*, OP. *stūnā* 'pillar', unless it belongs to Ved. *sthūra* 'tall, thick', Avest. *-stura*, Khot. *stura* (thus EWA II 768);

• *yavyā* /O.P. *yauviyā* ‘channel’, > MP., NP. *jō*, *jōy* ‘stream, channel’, Parachi *žī* ‘rivulet’, EWA II 405; both words, typical for loans, do not go back to exactly the same source;

• *godhūma* / *gantuma* ‘wheat’ from a Near Eastern language, cf. Semitic **ḫnṭ*, Hitt. *kant* (EWA 499) and Egyptian *xnd*;

• *parṣa* / *parša* ‘sheaf’, see EWA II 101;

• *bīja* / OIran. **bīza* (in names), ‘seed, semen’, Buddh. Sogdian *byz’k*, Parachi *bīz* ‘grains’;

• *śaṇa* / *kana-* ‘hemp’, MP. *šan* ‘hemp’, Khot. *kaṃha*, Osset. *gœn*, *gœnœ*, Russ. Church Sl. *konoplja*, Gr. *kánnabis*, itself a loan from Scythian, as also also Old High German *hanaf*, Dutch *hennep* < **kanap*;

• *bhaṅga* / *banga* ‘hemp, hashish’, if the word does not belong to *bhañj* ‘to break’;

• **sinšap* ‘mustard’: Ved. *saṣarpa* ‘mustard’, Khot. *śśaśvāna*, Parthian *šyfš-d’n*, Sogdian *šywšp-δn*, MP. *span-dān* ‘mustard seed’; Greek *sínapi*; < pre-Iran. **sinšapa* < ***sinsap* (Henning s_1ens_2ap); cf. also: Malay *sawi*, *səsawi*, or Austro-As. **sapi*, *sV(r)-sapi*; further EWA 712, 727: *śiṃśápā* RV+ ‘Dalbergia sissoo’ NP. *šīšam*, Pashto *šəwa* < **śīṣampā*, CDIAL 12424), Elam. *še-iš-šá-ba-ut* = /*šeššap*/;

• *kaśyapa* / *kasiiapa* ‘turtle’, Sogdian *kyšph*, NP. *kašaf*, *kaš(a)p* ‘tortoise’; cf. Kashaf Rūd, a river in Turkmenistan and Khorasan;

• *pard/pandh* ‘spotted animal, panther’ : Ved. *pr̥dāku* ‘snake’ RV, *pr̥dakū* AV, *pr̥dākhu* BŚS (EWA II 163), with Para-Munda prefix *pər*?; Khowar *purdùm* < **pr̥dhūma*? KEWA II 335, CDIAL 8362; Bur. (Yasin) *phúrdum* ‘adder, snake’; later Skt. ‘tiger, panther’; NP. *palang* ‘leopard’ < O.Iran. **pard-*, Greek *párdalis*, *párdos*, *léo-pardos* ‘leopard’ (EWA II 163), all < ***pard* ‘spotted, wild animal?’; Henning reconstructs ***parϑ* (but note Greek *pánthēr*), which may have been close to the Central Asian form;

• **kar(t)ka* ‘rhinoceros’, Ved. *khaḍga* ‘rhinoceros’ MS+, EWA 443, cf. N.P. *karka-dān*, Arab. *karkaddan*, Aelianus *kartázōnos* (**kargazōnos*) ‘Indian rhinoceros’, all from a pre-Aryan source; however, cf. Kuiper 1948: 136 sqq.

• *bheṣaja* / *baēsaziia* ‘healing’; IIr **bhiš-aj* > Ved. *bhiṣ-aj*; the root **bhiš* may be a loan word (cf. EWA s.v.);

• *vīnā* ‘lute’: Ved. *vīṇā* Khot. *bīna* ‘harp, lute’, Sogdian *wyn’* ‘lute’, MP. *win* ‘lute’, Armen. *vin* ‘lute’, unless loans from India, cf. EWA II 568;

• **kapauta* ‘blue’: Ved. *kapota* ‘pigeon’, O.P. *kapauta* ‘blue’; Khot. *kavūta* ‘blue’, MP. *kabōd* ‘grey-blue’, *kabōtar* ‘pigeon’; EWA I 303, Kuiper 1991;

• **kadru* ‘brown’: Ved. *kadru* ‘red-brown’, *kadrū* ‘a snake deity’, Avest. *kadruua.aspa* ‘with brown horses, NP. *kahar* ‘light brown’;

The following words may be of still older origin and may have been taken over either in E. Europe or in Northern Central Asia:

• **medh/melit* ‘sweet, honey’: IE. **medhu* ‘sweet’ is found in Ved. *madhu* ‘sweet, honey, mead’, Avest. *maδu*, Sogd. *mδw* ‘wine’, (cf. Bur. *mel* ‘wine, from grapes’), Toch. B *mit* ‘honey’, Gr. *méthu* ‘wine’ etc.; it has spread to Uralic **mese, mete*; Finnish *mete*, Hungarian *méz* ‘honey’, Chin. *mi* < **m^{i}et*, Sino-Korean *mil*, Jpn. *mitsu* < **mit(u)*; Iran. **maδu* > Turkish, Mongolian *bal* ‘honey’; Arabic *mādī*?, and to > Toch. B *mot* ‘intoxicating drink’. — From another source ***melit*, Greek *mélit-*, Hitt. *milit*, Latin *mel*, *mell-*, Gothic *miliϑ*; in Nostratic (Illich-Svitych, *Opyt*

II, Moskva 1976 : 38sq.) both forms are united under **majλʌ* > *Ural. *majδ'ʌ*, Drav. *maṭṭ*, *miṭṭ*, Altaic */m/ala*, *bala*; cf. also, still further afield, in Polynesia: Samoan *meli*, Hawaiian *mele*, *meli*; *mele*, *melemele* 'yellow', Maori *miere*; Tongan *melie* 'sweetness, sweet, delicious', Rarotongan *meli* 'honey', Mangareva *mere* 'honey'.

• **sengha/singha* 'lion' : Ved. *siṃha* 'lion' < * *sinǰha* < **sinĝha* differs from Proto-Iran. **sarg*: Khoresmian *sarγ*, Parthian *šarg*, Khot. *sarau*; Henning reconstructs ***s₁eṇgha*; — loans into nearby languages, such as Toch. A *śiśäk*, B *śecake* 'lion'; Tib. *seṅge*, Chin. **suân-ŋei* (Henning, EWA), note, however, Karlgren 1923, no. 893 Arch. Chin. **,ṣi*, Jpn. **si* > *shi(-shi)*; cf. perhaps Armenian *inc*, *inj* EWA II 727, KEWA III 447; the western IE languages have received the 'lion' word from a different source, Gr. *līs*, *leon(t)-*, Lat. *leon-*.

In short, western and central Iran must have been inhabited by (archaeologically well attested) peoples of non-IIr speech. However, their languages have left few remains in Iranian. Apparently, Elamian was spoken up to Simaški (Kerman/Bandar Abbas area), while Aratta (Sistan) and Marhaši (W. Baluchistan, Bampur region) apparently had other language(s), (Vallat 1980). All of these data need to be studied in greater detail, especially the early IIr substrate language(s).

§ 6 Conclusions.

In short, the early linguistic picture of South Asia in the second and first millennium BCE, during the Indus and Vedic periods, is as complex as, or even more so than its modern counterpart. The materials adduced above also indicate that, even with the addition of the modern descendants of Proto-Burushaski, -Nahali and -Kusunda, we have to reckon with, and make use of a number of substrate words from such languages as Masica's "Language X", Tharu, the Kathmandu Valley, or the Panjab and the Sindh varieties of the Indus language. It must be underlined, that except for the few items pointed out for the Vedda and Nilgiri languages, the prehistoric linguistic situation of South India (before Dravidian) is entirely unclear: in this respect, a lot of spade work needs to be done by Dravidian specialists; the same applies to Munda and the eastern and central parts of India; yet, just as in the modern North Indian languages, no progress has been made in this respect over the past few decades.

The few available etymological dictionaries do not provide detailed information about the historical and geographical spread of the words discussed, though Mayrhofer's EWA now gives an idea at least of the historical levels, but hardly of the geographical spread. DEDR does not have any such information yet, and we need to check the on-line dictionary at Cologne (http: //www.uni-koeln.de /phil-fak /indologie /tamil /otl_search.html); and the KWIC Concordance of Classical Tamil texts (http: //www.uni-koeln.de /cgi-bin /SFgate). A Munda etymological dictionary is still under preparation.

In addition, the ancient Vedic and Tamil texts still hold out a lot of important and interesting data. We would profit very much from detailed historical grammar of Tamil and a study of substrates in Tamil (and the other Dravidian languages).

The data discussed above indicate that we have to reckon with a number of layers of languages (and the populations which used them). The situation is best illustrated by Nahali (see above) with its subsequent layers of Proto-Nahali, Munda, Dravidian and NIA. If Hindi was studied in the same way, we would find similar layers of Masica's "Language X", Para-Munda, Old IA (with influences from the Indus language, and Proto-Drav., -Munda, -Tibeto-Burmese), early Persian (*dipi/lipi* 'script') and Greek (*yavana* 'Greek', *suruṅga* 'subterranean channel', but cf. Kuiper 1997: 186–190) loans, a continuous stream of Sanskrit loan words, medieval loans from Arabic, Turkish, Mongolian and Persian, as well as the more recent English loan words and Neo-Sanskrit words such as *Dūrdarśan* 'television'.

Especially, the etymology of Panjabi and Sindhi words should be taken up, finally, in order to delineate the linguistic history of these areas that are so critical for the immigration and acculturation of IA and Drav. speakers. A thorough study of the (usually very conservative) river names, not just of the major rivers mentioned above but even of small creeks, as has been done in Europe during this century, would substantially aid in this undertaking. Names of settlements change much more easily but should not be neglected either. In comparison with the linguistic history of the nearby East Iranian languages (especially Pashto), this kind of investigation would aid substantially in determining the history of human settlement in South Asia and would be a major contribution to the ongoing debate about the "Aryan invasion" or, rather, the trickling in, immigration and amalgamation of speakers of IA (as well as Dravidian) languages. Once the data derived from archaeology and genetics are added, a much clearer picture of the settlement of South Asia will finally emerge that will put much of the current speculation to rest.

ABBREVIATIONS

Note: for ready reference, the five historical levels of Vedic are indicated by numbers (1–5), followed by their geographical location, W: western North India = Panjab, Haryana, C: central North India = Uttar Pradesh, E: eastern North India = N. Bihar; S: southern N. India = between the Jamna/Ganges and the Vindhya mountains).

AA	Austro-Asiatic
AB	Aitareya Brāhmaṇa (4, W & E)
Akkad.	Akkadian
ĀpDhS	Āpastamba Dharmasūtra (5 C)
ĀpŚS	Āpastamba Śrautasūtra (5 C)
Armen.	Armenian
Austro-As.	Austro-Asiatic
AV	Atharvaveda Saṃhitā (2 C)
Avest.	Avestan
AVP	Atharvaveda Saṃhitā, Paippalāda version (2 W)
Beng.	Bengali
Brah.	Brahui
BŚS	Baudhāyana Śrautasūtra (4–5 C)
Bur.	Burushaski
CDIAL	Turner 1966–69

DED	Burrow, T. and Emeneau M.B. 1960
DEDR	Burrow, T. and Emeneau M.B. 1984
Drav.	Dravidian
ep.	Epic Sanskrit
EWA	Mayrhofer 1956–76
Gr.	Greek
GS	Gr̥hyasūtra(s) (5)
Guj.	Gujarati
Hitt.	Hittite
HŚS	Hiraṇyakeśi Śrautasūtra (5 C)
IA	Indo-Aryan
IE	Indo-European
IIr	Indo-Iranian
Indo-Ar.	Indo-Aryan
Iran.	Iranian
JB	Jaiminīya Brāhmaṇa (4 S)
Jpn.	Japanese
Kan.	Kannada, Canarese
Kaśm.	Kashmiri
KaṭhĀ	Kaṭha Āraṇyaka (4 W)
KauśS.	Kauśika Sūtra (5 C)
KB	Kauṣītaki Brāhmaṇa (4 C)
KEWA	Mayrhofer 1986-96
Khar.	Kharia
Khot.	Khotanese Saka
KS	Kaṭha Saṃhitā
KŚS	Kātyāyana Śrautasūtra (5 E)
Kur.	Kurukh
LŚS	Lāṭyāyana Śrautasūtra
Lit.	Lithuanian
Mal.	Malayalam
Mar.	Marathi
Mbh.	Mahābhārata
MIA	Middle Indo-Aryan
MP.	Middle Persian
MS	Maitrāyaṇī Saṃhitā (2–3 W)
MT	Mother Tongue
Mund.	Mundari
Nep.	Nepali
New.	Newari
NP.	New Persian
NIA	New Indo-Aryan

Nir.	Nirukta (5)
Nur.	Nuristani (Kafiri)
OP.	Old Persian
O.Pers.	Old Persian
Osset.	Ossetic
Panj.	Panjabi
Pkt.	Prakrit
PS	Paippalāda Saṃhitā (2 W)
PSK	Paippalāda Saṃhitā, Kashmir MS.
RV	R̥gveda Saṃhitā (1, Greater Panjab)
RVKh	R̥gveda Khila (2 W)
ṢaḍvB	Ṣaḍviṃśa Brāhmaṇa (4 W)
Saṃh.	Saṃhitā(s)
Sant.	Santali
ŚĀ	Śāṅkhāyana Āraṇyaka (4 C)
ṢB	Ṣaḍviṃśa Brāhmaṇa
ŚB	Śatapatha Brāhmaṇa (4 E)
ŚBK	Śatapatha Brāhmaṇa, Kāṇva recension (4 C)
ŚS	Śrautasūtra (5)
Skt.	Sanskrit
Sum(er).	Sumerian
Sū.	Sūtra(s) (5)
Suśr.	Suśruta
SV	Sāmaveda Saṃhitā (2 W)
StII	Studien zur Indologie und Iranistik
TĀ	Taittirīya Āraṇyaka (4 C)
Tam.	Tamil
Tel.	Telugu
TB	Taittirīya Brāhmaṇa (4 C)
TB	Tibeto-Burmese
Tib.	Tibetan
Tib.-Burm.	Tibeto-Burmese
Toch.	Tocharian
TS	Taittirīya Saṃhitā (2 C)
Up.	Upaniṣad(s) (4)
V.	Vīdēvdād (Vendidād)
VādhB	Vādhūla Brāhmaṇa (Anvākhyāna) (4 C)
Ved.	Vedic
Ved. Index	Macdonell - Keith 1912
VS	Vājasaneyi Saṃhitā (2 E)
YV	Yajurveda (-Saṃhitā) (2)
ZDMG	Zeitschrift der deutschen morgenländischen Gesellschaft

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