

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia

By Michael Witzel

Philadelphia: Sino-Platonic Papers 129, Dec. 2003, 1-70.

Original page numbers: 48 - 70; Footnotes : 196- 204; bibliography given uncut

Orders of full monograph at: Dept. of East Asian Languages and Civilizations,
University of Pennsylvania, Philadelphia ,PA 19104-6305, USA;
vmair@sas.upenn.edu
See also : <http://spp.pinyin.info/>

*** **

... the Bactria-Margiana area is the immediate contact zone for steppe
populations coming from the north.¹ <p.48>

§6. Transhumance, Trickling in, Immigration of Steppe Peoples

There is no need to underline that the establishment of a BMAC substrate belt has grave implications for the theory of the immigration of speakers of Indo-Iranian languages into Greater Iran and then into the Panjab.

By and large, the body of words taken over into the Indo-Iranian languages in the BMAC area, necessarily by bilingualism, closes the linguistic gap between the Urals and the languages of Greater Iran and India. Uralic and Yeneseian were situated, as many Iir. loan words indicate, to the north of the steppe/*taiga* boundary of the (Proto-)Iir. speaking territories (§2.1.1). The individual Iir. languages are firmly attested in Greater Iran (Avestan, O.Persian, Median) as well as in the northwestern Indian subcontinent (Ṛgvedic, Middle Vedic).

These materials, mentioned above (§2.1.) and some more materials relating to religion (Witzel forthc. b) indicate an early habitat of Proto-Iir. in the steppes south of the Russian/Siberian *taiga* belt. The most obvious linguistic proofs of this location are the FU words corresponding to Iir. *Arya* "self-designation of the Iir. tribes": Pre-Saami

¹ <n.196> It should be noted that the late BMAC shows an intrusion of steppe pottery (Hiebert, 1998, Shishlina and Hiebert 1998, Lamberg-Karlovsky 2002).

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

**orja* > *oarji* "southwest" (Koivulehto 2001: 248), *årjel* "Southerner", and Finnish *orja*, Mordvin *uše/ušä*, Votyak *var*, Syry. *ver* "slave" (Rédei 1986: 54). In other words, the Iir. speaking area may have included the S. Ural "country of towns" (Petrovka, Sintashta, Arkhaim) dated at c. 2100/2000 BCE (see the archaeological and linguistic summary in Witzel 2000a, Lamberg-Karlovsky 2002). This, however, is not the place to engage in a detailed discussion of all of the relevant archaeological materials.

It is a truism that "Linguists too often assign languages to archaeological cultures, while archaeologists are often too quick to assign their sherds a language" (Lamberg-Karlovsky 2002: 74), but Mallory (in Lamberg-Karlovsky 2002: 79) is equally right in asserting that "there are still degrees of geo-linguistic plausibility".

Indeed, we cannot be sure that (Proto-)Iir. was actually spoken at Sintastha-Arkhaim around 2100/2000 BCE (Witzel 2000a), but it must be pointed out that the archaeological assemblage and the geographical position of these sites close to the *taiga* makes this quite likely: the Sintastha-Arkhaim complex has the newly developed spoked (proto-)chariot and many other items (horse sacrifice, grave structure, Dadhyañc style replaced horse head in a grave at Potapovka, *pur*-style forts, etc.) overlapping with the early IA and Old Iranian cultures and texts (Witzel 2000a, Anthony in Lamberg-Karlovsky 2002: 75). The discussion of all such relevant Iir. words and concepts is unfortunately missing in Lamberg-Karlovsky (2002) and with most of his interlocutors in that issue of *Current Anthropology* (with the partial exception of Anthony and Mallory); instead they operate with rather vague, bloodless notions of Iir., hardly progressing beyond Benveniste's IE(!) linguistic reconstructions of the social sphere (Benveniste 1973).

<p.49>

<Diagram and map below:>
(From Lamberg-Karlovsky 2002)



FIG. 2. *Principal archaeological sites and cultures mentioned in text. Sites: A, Mikhailovka; B, Petrovka; C, Arkhaim; D, Sintashta; E, Botai; F, Namazga; G, Gonur; H, Togolok; I, Dashly Oasis; J, Sapelli; K, Djarkutan; L, Hissar; M, Shahr-i-Sokhta; N, Sibri; O, Shahdad; P, Yahya; Q, Susa. Cultures: 1, Tripolye; 2, Pit Grave/Catacomb; 3, Sintashta/Arkhaim; 4, Abashevo; 5, Afanasievo; 6, Andronovo; 7, Bactrian Margiana archaeological complex; 8, Indus; 9, Akkadian; 10, Hurrian; 11, Hittite.*

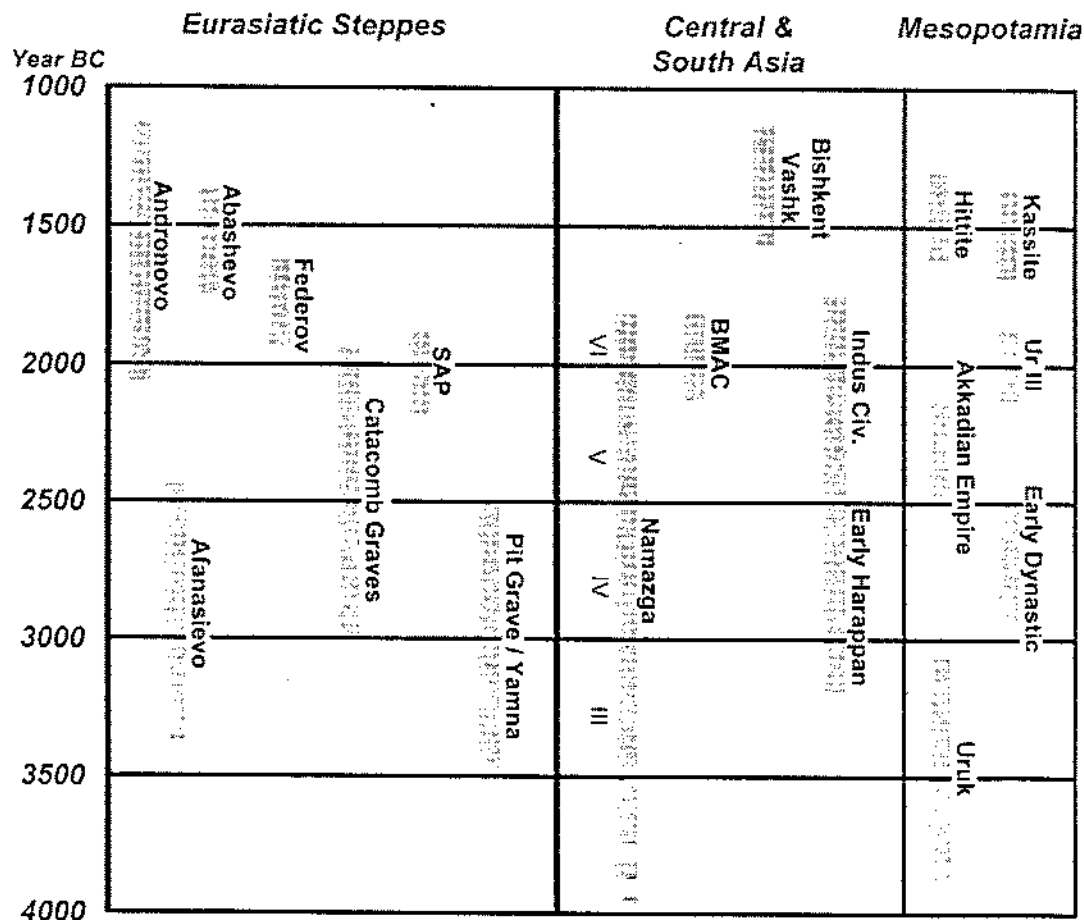


FIG. 3. Relative chronology of major archaeological cultures.

That the oldest Iir. texts (Ṛgveda, Avesta) are about 1000 years later than the date of the Sintashta-Arkheim complex (Lamberg-Karlovsky 2002) is *not* of as great relevance as thought. First, the relevant words from the two very closely related languages can easily be reconstructed from the extant texts for the P-Iir. period. In addition, both texts are notoriously archaic in their language, culture, and religion, and actually contain some reminiscences of Central Asia (Gr. *Rhā* "Volga" ~ N. Iran. *Rahā*, Ved. *Rasā*, *Parna* ~ Ved. *Pañi*; N. Iran. *Daha*, *Dahā-ka*, Ved. *Dāsa*, *Dasyu*; *Sarayu* = *Harōiii-m/Harē* = Herat R., Ved. *Sarayu*; **Sindh-* ~ *Sindēs* River (Tedzhen) ~ Iran. *Həṇdu*, Ved. *Sindhu*, etc., (see above, Witzel 1984, 1995, 1999c).

The *older* forms of Iir. words have been taken over into Uralic and Proto-Yeneseian, as has been discussed above (see Kott *art'a* §2.1.2; see n. 151 for *asura* > Mordwin *azoro* not, e.g., from the later, Iran. *ahura*). This again underlines the early age of contact, before and around 2000 BCE. In this light, the geographical location and spread of the eastern Catacomb, Sintashta-Arkheim, Afanasievo and finally the early (northern) Andronovo cultures make for a more or less widespread overlap with speakers of (P)Iir., though occupation by some other languages (also lost ones) cannot be ruled out altogether, at least for part of the area: i.e., Uralic and Yeneseian at the northern borders, while Altaic is excluded (perhaps except for some Proto-Turkic in the extreme East, Róna-Tas in Lamberg-Karlovsky 2002: 82 sq.).

It is likely that, like in Turkic and Mongolian times, there was use of a *lingua franca* in the wide steppe (and desert) belt. This cannot have been Uralic, Yeneseian, Altaic or another unknown language as we do not have any indication of any respective influence on the southern languages (BMAC, Elamite, or later, on attested OIA, OIr.) This *lingua franca* most likely was an Iir. *koine* (cf. Kohl in Lamberg-Karlovsky 2002: 77-78), a form of P-Iir. (and later on, of pre-OIA, then of pre-Ir.), as is witnessed in the various levels of Iir. loans into Uralic and Yeneseian.

The clearly defined situation described above contradicts Mallory's assertion, in spite of his principle of "degrees of geo-linguistic plausibility", that "there are clear instances, the Indo-Iranians being a case in point, in which there is no hint of the distribution of any archaeological assemblage that might correlate with the target language group" (loc.cit., p. 80). The use of an Iir. *koine* also does *not* contradict, as Kohl seems to think, the model of a tree-like linguistic divergence model: the Iir. "mythical homeland" is indicated by the correlation of linguistic and zoological/botanical evidence, and as the various stages and branches of the IE/Iir. tree model are visible in the "quasi-archaeological" layers of loans words taken over from the Iir. languages into the Uralic and Yeneseian languages. A *koine* (Hellenic Greek, Latin, French, Russian, English) simply does not imply "fusion" of languages à la Trubetsky (Kohl in Lamberg-Karlovsky 2002: 77, cf. Makkay p. 78). Such fusion is rarely if at all visible even in the developments of Pidgin and Creole languages. They always have a strong basis in one extant language but have taken over some grammatical traits and words from others (not unlike medieval English!).

In sum, the agnosticism of Lamberg-Karlovsky and other archaeologists with regard to a correlation between Iir. languages and the steppe archaeological cultures is repudiated by the increasing wealth of "archaeologically" stratified linguistic data, generally neglected, that locate PIIr. in the steppe belt *just south* of the

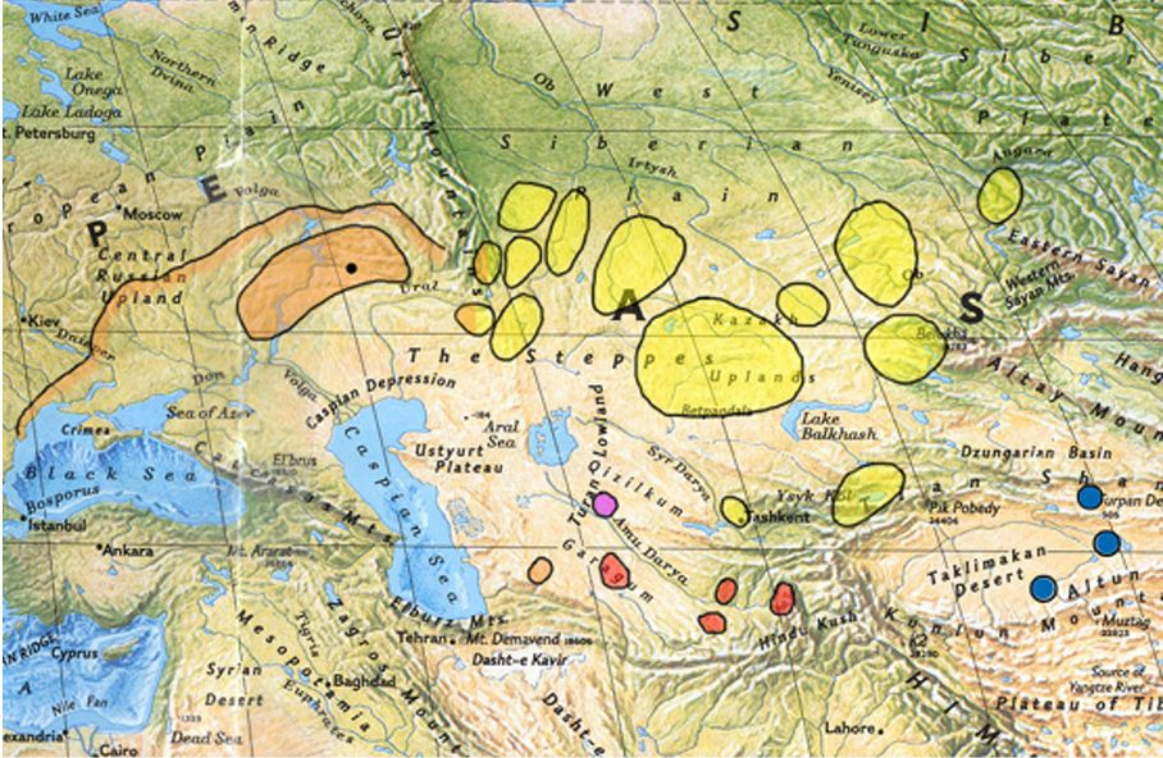
EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Uralic/Yeneseian *taiga*, in other words, in the very archaeological areas discussed above
(eastern Catacomb to northern Andronovo)

Finally, as outlined elsewhere (Witzel forthc. b), there is an additional number of words from the religious sphere (*anc'u* ~ Soma, etc., Lubotsky 2001) that again indicate a gradual spread of Ir. speaking tribes southwards from the "quickly filling steppes" (Kohl) of the Catacomb - S. Ural - Afanasievo areas, all of which is not unlike the attested eastwards and southwards spread of the Andronovo culture that has created well documented overlaps with the BMAC in the Merw delta, on the Zerafshan River and at Kangurtut in S. Tajikistan (see Lamberg-Karlovsky 2002: 71, 73). <p.51>

<Map below:>

(From D. Anthony: Samara Project, <http://users.hartwick.edu/iaes/newsletter/newsletter.html>)



Eurasia about 2,000 BC.



SRUBNAYA



ANDRONOVO



BMAC



DESERT MUMMIES



TAZABAGYAB

Against this background of a (partial) overlap of the steppe archaeological cultures and the location of tribes speaking various forms of Iir., a scenario of cultural and linguistic interactions and actual movements can be drawn up. In the form of a brief summary, this would include the following steps.

- Gradual immigration of the cattle herding speakers of common Proto-Indo-Iranian (or of pre-Old Indo-Aryan) from the steppe belt into the general BMAC area

<p.52>

(cf. Mallory in Lamberg-Karlovsky 2002: 80). This general, seasonal migrational pattern was continued, just as in Afghanistan transhumance, well into our time. (Meridional migrations of Kazakhs took place down to 1929 CE, Olsen in Lamberg-Karlovsky 2002: 81). Again, the Iir. languages *must* have come from the northern steppe areas as the *early* (Proto-Iir.) loans into Proto-Uralic (*asura*, Koivulehto 2001: 247) and Yeneseian (*art'a*) clearly indicate. This contact persisted for several millennia as the virtually "archaeological" layers of loans indicate.

- Amalgamation of BMAC/Central Asian words into the (late) common Iir., pre-Vedic and pre-OIr. languages then took place, along with their underlying concepts (**bhiš*, **kapauta*, etc.), religion (the **sauma* drink, **-rwa* beings), animals (**uštra*, **khara*) and plants (**bhanga*, **anc'u*). The non-IE BMAC religion, as depicted in its seals and other art (Francfort 1994, 2001, Anthony in Lamberg-Karlovsky), seems to have directly influenced the Avestan and Vedic form on certain Iir. beliefs, such as the Avestan version of the hero fighting the dragon of drought (*Aži/Ahi/ '*Vərəθra' / Vrtra*), transforming the IE (and Eurasian, Witzel 2001b) myth of the killing of the dragon into one of releasing the waters by the late spring snow melt in Afghanistan (Avesta) and in the northwestern Indian subcontinent (RV). The prominence of the BMAC Goddess of waters and fertility has influenced, to some extent, the character of the Avestan river Goddess *Anāhitā* and of the Vedic *Sarasvatī*.

While such interaction can be deduced from linguistic analysis and comparative religion, it is very difficult to indicate, by archaeological means alone, the actual "form of symbiosis" of the two antithetical and dissimilar cultures, the agro-pastoral Andronovo and the settled BMAC culture with its irrigation agriculture (Lamberg-Karlovsky 2002: 74). However, there are many steppe type sites near the BMAC settlements (Lamberg-Karlovsky: 71, 73).² While there is some indication of steppe materials in actual BMAC sites, the opposite is not true. Some degree of avoidance (Lamberg-Karlovsky 2002: 73) between the bearers of both distinctly different cultures seems likely. However, some details of the BMAC culture *must* have been taken over, at some time in the second mill. BCE, by the speakers of Iir. (note the list of BMAC words of agriculture, settlement religion, above § 3.3-4, and see below).

The incoming steppe people with Andronovo cultural traits must have shed many of these characteristics in the Greater BMAC area (Mallory 1998, in Lamberg-Karlovsky 2002: 80, cf. Kohl, p. 78) before moving on, as "not a single artifact of

² <n.197> For early steppe-Bactria/Margiana contacts see Francfort 2001: 153 about Kelteminar pottery and a Afanas'evofunary stone circle found at Sarazm II, i.e. before 2500 BCE. For late steppe pottery see the preceding note.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Andronovo type has been identified in Iran or in northern India" (Lamberg-Karlovsky 2002: 74), all while keeping their Ir. language - and, somewhat differently from Mallory, also much of their spiritual culture.

Mallory thus is right (in Lamberg-Karlovsky 2002: 80) in pointing out that "this would require far more intimate relationships between the Andronovo and the Bactrian Margiana complex than the existing distribution of "mutually exclusive" material culture would permit." However, the question that has not been put yet is: exactly when should the extensive exchange as seen in the BMAC loan words in Vedic

<p.53>

and OIran. have taken place? The steppe pottery found in the BMAC (see n. 196, 197) may just reflect the *forerunners* (no horses!) of a more massive IA influx at the end of the BMAC, around 1600 BCE. While Lamberg-Karlovsky (2002) is still looking for a model of such cultural change, the actual state of affairs may be still have been remembered in and is reflected by the conservative poetry of the RV: the Paṇi (wealthy, "stingy", rich in cattle) are depicted as holed up in their forts (*pur*) while the Ṛgvedic Aryans are depicted as being *outside* and desiring to *get in* and acquire the cattle (Elizarenkova 1995). As has been pointed out above (cf. §1.1) this *topos* may very well be a reminiscence of the situation in the BMAC area where the steppe tribes opposed the Parna (*Parnoi*, *Parni*) on the Sindes (Tedzhen/Sindhu river).

Incidentally, a tradition of avoidance similar to the one in the BMAC area is still seen, much later, in the Sistan/Arachosian area (Falk 1997) and in the Ṛgvedic Panjab (Witzel 1995, 1997b): while, conveniently, many agricultural, musical, and a few religious terms of the *small tradition* were taken over (Kuiper 1955, Witzel 1999a,b,c), the local settled Dasyu populations as such were avoided and were despised (note, e.g., RV 3.53.14 about the Kikāṭa and the "misuse" of their cows). What else may one expect of proud, semi-nomadic cattle herders with their habitual disdain for farmers?

The obvious solution to look for, out of Lamberg-Karlovsky's and Mallory's dilemma of contact/avoidance of the steppe and BMAC cultures, is the one indicated just now: some trade and exchange, but also occasional friction and warfare (fortresses of the BMAC!), perhaps even including some steppe mercenaries(?), existed between the impoverished pastoralists at the fringes of BMAC settlements (cf. Kohl in Lamberg-Karlovsky 2002: 78) and the occupants of the BMAC, perhaps not unlike the relationship arising between the nomads and the occupants of fixed settlements in later history.

Some sort of contact is clearly in evidence in the borrowed vocabulary found in the Ir. languages, and just as in the RV later on, it is restricted to agriculture, village life, small tradition religion, but it also included a few more prominent terms for priests (*atharwan*, *uc'ij*), ritual (*anc'u*, *yātu*) and deities (*c'arwa*, *g(h)andharw/b(h)a*). Even then, the IE and Ir. pattern (Father Heaven, drink of immortality, the hero killing the dragon, the Ir. Asura deities, etc.) is clearly maintained in the early Iranian and Vedic texts (Witzel forthc. b), and little influence seen of the prominence of the BMAC goddess or the anthropomorphic dragon and eagle (Frankfort 1994, 2001: 154). Equally so, the Dumézilian three-level IE social structure (poet/priests, nobility, commoners) was maintained but it was enlarged, both in Iran and in the Panjab (or, e.g., in Greece, the *pan-hellenes*), by a fourth class (*Śūdra*) that made room for persons from the local populations that had joined the *arya/ariya*.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Such adjustments will be difficult to detect by archaeology. If they have indeed been looked for, then in the wrong direction: we cannot expect Zoroastrian rituals in the BMAC in 2000 BCE but only around 1000 BCE, not every hearth is an Iir. "fire altar", and the findings of Ephedra ("Soma") in the BMAC have not been substantiated (see the discussion in *EJVS* 9). The occurrence of certain steppe vessels in BMAC contexts could point in that direction -- if they had indeed been found with Soma presses and filters. Most notable is the absence, so far, of horse remains, horse furniture, chariots (invented around 2000 BCE) and clear depictions of horses in stratified BMAC layers. One can hardly imagine the Iir.s without their favorite prestige animal, the horse. The archaeological picture of avoidance/contact by the forerunners

<p.54>

of the massive IA move onto the Iranian plateau so far remains sketchy. Perhaps it can be explained if the main period of major contacts was as late as c. 1500 BCE.

Once the successor settlements of the BMAC were abandoned around 1500 BCE, a partially changed Iir. speaking, entirely pastoral culture (Anthony, *op. cit.* p. 76), probably swelled by some of the Bactria-Margiana populations, spread all over Greater Iran. This is accompanied by a clear cultural change, with the appearance of painted handmade pottery in the former BMAC area (Frankfort 2001: 154) at 1500 BCE and the accompanying disappearance of tomb and grave structures in Central Asia (reflecting some Vedic and Zoroastrian customs). The proposed comparatively late date of the onward migration towards Mesopotamia and the Panjab at c. 1500/1200 BCE fits this scenario better than an early influx into, and cohabitation with, the late Indus civilization, as some have assumed (e.g., Allchin 1995: 47, at 2200-2000 BCE sqq.).

• This new, amalgamated, *late* Iir./pre-OIA speaking entity moved -- *Kulturkugel* fashion (Mallory 1998, 2001: 360 sq.)-- into Iran and towards the Panjab. By this term, Mallory means a culture that has kept its Iir. language but has taken over (much of) BMAC cultural and societal structures. Conversely to the situation during the BMAC period, this expansion can only sparsely be substantiated, so far, by linguistic data as the relevant spade work in (Old) Iranian has not yet been done.³

It is probable that this move was preceded by successive spearheading forays of (non-Iir. speaking) mountain peoples into Mesopotamia, such as the Guti, Lullubi, and Kassites⁴ (c. 2250-1750 BCE), who were as yet only marginally influenced by Iir. languages and customs. Some of them are perhaps represented by the sudden

³ <n.198> Only some initial guesses are possible, for example about the ethnic nature of the *Tukriš* (see above n. 102) which might be connected with Ved. *tugra*, *tugrya* (both personal names), Iran. *tuyr-*. If true, we would have continuing RV (and later Vedic, BŚS) links with Bolan, Aratta, and Shahdad -- recalling the more northern trail that led the Mitanni-Indo-Aryans westward into N. Mesopotamia. However, note the pre-OIA words in Kassite (c. 1740 BCE-), and cf. now Blažek (1999, 2002a) on early Elamite connections with Vedic.

⁴ <n. 199> Only a few Kassite words seem to come from Iir., e.g. *Šuriišaš* "sun god", *Maruttaš* "divine Marut comrades of Indra", *Bugaš* "god Bhaga?"; see Balkan 1954, for horse names such as *akriyaš* = *agriya-s* "(running) in front?", *timiraš* "black?", etc.; note the direct loan from Iir. with Nominative -s, as seen in some *old* FU loans as well (above, or cf. later on, Finnish *kuningas* "king" < P.Germanic **kuningaz*, as seen in Dutch *koning*).

expansion of BMAC materials into Susa, Shahdad, Tepe Yahya, Hissar, the Gulf, Baluchistan, the S. Indus area (Lamberg-Karlovsky 2002: 72, 74, 84) and Harappa (R. Meadow, pers. comm.).⁵ Lamberg-Karlovsky (2002: 84), however, thinks of this spread as "the prime candidate for Indo-Iranian arrival on the Iranian plateau," which

<p.55>

in the light of the above discussion is too early, but he (correctly) suggests that "the indigenous people, although in the majority, adopted their language," -- later on, that is (cf. below, § 6, end). A similar move may have brought speakers of PDrav. to Bolan and Sindh.

- Later, apparently after the abandonment of the BMAC and successor settlements around 1650/1500 BCE and the spread of pastoralism all over Iran (Anthony, in Lamberg-Karlovsky 2002: 76), the actual spread of speakers of pre-Vedic IA took place, that is of Mitanni-OIA, into N. Iraq/Syria (c. 1400 BCE), an area settled by the Caucasian-speaking Hurrites. The speakers of the linguistically slightly later, though still pre-Iron Age Ṛgvedic then moved into Arachosia (**Sarasvatī* > Avest. *Haraxʾaitī*), Swat (*Suvāstu*) and Panjab (*Sapta Sindhu*), before c.1200/1000 BCE -- depending on the local date of the introduction of iron (Possehl and Gullapalli 1999), which still is missing in the Ṛgveda but found in the next level of Vedic texts.

- The intermediate Hindukush area has been largely neglected in scenarios of this kind. However, the Ṛgveda does not only take note of some its geographical features (*Kubhā* = Kabul River, *Suvāstu* = Swat, the opposition *giri: ajra* "mountains: flat valley pastures"), it also is influenced by certain religious ideas of the Hindukush area, such as the concept of Yakṣ(iṅ)ī/Apsaras (**Śucī* "pure" > Kalash *sūci*) and Rudra/Gandharva as inhabitants of the pure snow mountains, snow/ice dragons engulfing the flowing waters (the later Kashmirian *Nāgas*), and the like (Witzel, forthc. b: §1.5.6.). The RV also contains a number of words that can be linked with the local Pamir language, Burushaski (Witzel 1999 a,b), such as Bur. *kilāy*, RV *kīlāla*- "biestings, a sweet drink". Indeed, the Hindukush/Pamir area is one of transhumance that was well suited for the Indo-Aryan pastoralists (Witzel 2000a). Movements between the mountain pastures of the Hindukush highlands and the Panjab/Sindh lowlands and the continue to this day, including that of cattle (Meadow, oral comm. based on personal observance).

Furthermore, it is precisely in this area that the phonetic feature of retroflexation, so typical of Vedic (and of South Asian languages in general), must have set in (Witzel 1999 a,b). This feature is *missing* in Mitanni-IA and Old Iranian but typical for all languages of the Hindukush/Pamir areas, whether they be Burushaski, E. Iranian, N. Iranian (Saka), Nuristani, or IA (from RV to modern Dardic);

⁵ <n. 200> In this context, a remarkable overlap between BMAC and Indus shamanistic concepts has not been noticed, as far as I see: a cylinder seal (Sarianidi 1992: 25, fig. 33) and a terracotta tablet from Mohenjo-daro (Kenoyer 1998: 83, fig. 5.6) show remarkably similar scenes of processions of flag and standard bearers (cf. Avestan *ərəδβō.drafsa* V. 1.6), the latter involving carrying animals on a pole and being accompanied by a figure beating a typical shamanic circular drum (still found with in Kalasha ritual, in the eastern Hindukush). Sarianidi (1992: 24, 26) takes the scene as one depicting jumping athletes or acrobats. There is, however, comparatively little shamanism in the Veda, and the use of the circular drum is not attested so far.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

retroflexation even has affected the eastern (i.e. S. Asian) dialects of the newcomer, Baluchi, a *West* Iranian language.

• The move toward the Panjab may have been independent of and may actually have been preceded by that of the speakers of the third group of Iir. languages, now called Nuristani, whose speakers, originally called Kafirs by their Muslim neighbors, live in the Hindukush mountains of NE Afghanistan. They have preserved some archaic features until today (Nur. *c* is older than RV *ś* or Avestan *s*, all from Iir. **c'*). Such movements may also have included that of the speakers of the non-Iir., western-IE group now represented in the substrate of Bangani, a NIA language in the high Himalayas of Uttarkhand, on the border to Himachal Pradesh. However, the people who spoke that substrate language may just as well have come, as potential IE neighbors of the "western-IE" Tocharians, *across the mountains* from the general area of modern Xinjiang. People often establish their alpine grazing grounds (and settlements) *across* the mountain range they border on: German speakers in Wallis/Valois and S. Tyrol, Slovenian in Carynthia, Ossete north and south of the Caucasus range, Iranian Yidgha

<p.56>

in the NIA speaking Chitral, Kafiri in westernmost Chitral, Tibetans (Sherpa, Bhutanese, etc.) on the southern side of the Himalayas.

It might be added that the general path of immigration of the speakers of Indo-Aryan from the north into the Panjab, via the general BMAC/Hindukush area, is also indicated by an early loan from Nuristani. This is Nur. **kat's'a* > Ved. *kāca* "shining piece of jewelry" (K. Hoffmann 1976, *EWA* I 33),⁶ also taken over into O.P. as *kāsa-ka* "semi-precious stone."

• All of this is followed by the spread into Greater Iran of the earliest Iranians (c. 1000 BCE, Hintze 1998, cf. K. Hoffmann 1976-92 [= 1941], for some pre-Ir. names in the RV), with the introduction of E. Iranian (Avestan) into E. Iran (1200/1000 BCE -- note the overlap with AV *Balhika* "Bactria", Witzel 1980). The movement of the West Iranian tribes, Median and Persian, into W. Iran, is later still, c. 900-700 BCE.⁷

⁶ <n.. 201> However, this may also be a post-Ṛgvedic loan from these isolated mountain languages, the archaic third branch of the Indo-Iranians (Morgenstierne 1973) that has survived in the mountains of northeast Afghanistan and in neighboring Chitral (Pakistan). Note O.P. *kāsaka* "semi-precious stone", *kāsaka kapauta* "lapis lazuli," and *si^hkabru* "carnelian" described as brought from Sogdia, and *kāsaka axšaina* "from Choresmia" (DSf 37-40). One would expect Bactria/Badakhshan.

⁷ < n. 202> It remains to be investigated whether the Persians (*Pārsa* < **pārc'va-*) are related to the Parśu (< **parc'u*) of the Vedic texts (RV, BŚS), where they are located next to the Arattas (*āraṭṭa*, *arāṭṭa*), thus in Afghanistan. These are likely to be the ancestors of the Pashto (*paštō* < **-rš/*xšt-* < **parštu/parštawā* or [improbably] < **paxšt-*; or cf. Avest. *paršta* "back" thus, "the hill people"; see Morgenstierne 1927: 61; Pashto has often been compared with Herodotus' *Paktues* which however cannot reflect expected *-ršt-*, only *-xšt-*, at the time). Notably, whether **parc'va* is connected with Pashto or not, Old Persian *-s-* (as in < *asa* "horse") < **śś* < *śv* < *c'v* < IE *k'w* shares the development of Iir. *c'v* > *śś* with Saka *-śś-*, while the rest of Iranian has *-sp-* (*aspa*) and Vedic has *-śv-* (*aśva*). This feature and others (cf. further grammatical features in Witzel 1989, ch. 10) may point to an ultimately northeastern (Bactrian?) rather than a northwestern (Urartu/Median) origin of O.P., and thus to a track of immigration from the NE via Media to the Persis, somewhat like Nichols' (1997-98) "southern trajectory". A northeastern origin would be close to the location of the Ved. *Parśu*.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Lamberg-Karlovsky (2002: 74) stresses the fact that the spread of BMAC materials cannot be linked to the later archaeological developments on the Iranian plateau in the later 2nd and 1st millennium as would be required by the spread of the Iranian speaking groups.⁸

In sum, as far as South Asia is concerned, it can now be stated more securely that speakers of an IE language, early OIA (pre-Ṛgvedic) entered the Greater Panjab from Afghanistan, acquired local words from the Northern Indus dialect (such as *śaṇa*, *lāṅgala*, *vr̥hi*, *godhūma*, *kaṅgu*, *Gandhāra*, Witzel 1999a,b). About the same time(?) speakers of Proto-Dravidian entered Sindh, acquired related words from the southern Indus dialect (*gōnu*, *ñāñcil*, *variñci*, *godī*, *kaṅku/kampu*), and perhaps it was they who brought the first horses to South Asia (Pirak, Eastern Baluchistan near the Bolān Pass, c. 1800 BCE, see Allchin 1995: 31, Kenoyer 1998: 78, Witzel 1999a,b), rather than the IA(?) Bhalānas (RV 7.18), whose name seems to be reflected by the modern Iranian place name.

A similar scenario for Greater Iran cannot yet be written as the relevant linguistic investigations have not yet been carried out: we do not have a comprehensive study of loan words in early Iranian (and Hurrite/Urartian, Elamite, etc.). Instead, it has often been alleged that Old Iranian has fewer loan words from the local substrates than Ṛgvedic, all in spite of the well attested pre-Ir. archaeological cultures of Greater Iran, from Tepe Hissar to Mundigak. The assumption is a fallacy, as a closer look at the Avestan vocabulary will indicate (see n. 158 for the direction to be taken.) Scholars apparently have been misled by the glaring archaisms of Zoroaster's IE poetic language (cf. Kuiper 1979) as to assume a "pure" Ir. language.

The whole process of "Aryanization" in Iran and India, progressing with a large degree of intervening bilingualism, may be summed up in the words of Polomé (1990: 337). He discusses the introduction of Indo-European into Northern Europe, supplanting the local language, but not without leaving many substrate words (and ideas) with the emerging Proto-Germanic speaking peoples:

whichever way [the area] was indo-europeanized, the new population initially constituted a mere *adstratum* or *superstratum* to the long-established set of peoples. When and why the language shift took place remains a widely open question, but one thing is certain : it did not take place without leaving clear traces of the prior language(s) in the lexicon.

To which we may add: and, of customs, beliefs, rituals, religion,⁹ and material culture.

⁸ < n. 203 > The question of the location and spread of early Iranian is not discussed here. It is likely (see above) that this form of Ir. developed further north in the steppes and spread both westwards (Scythians) and eastwards (Saka) as well as southwards (E. Iranian), and still later, also south-westwards (W. Iranian: Median, Persian). This took place only after an early southward move of the (pre-)OIA's from the northern steppes, as suggested by Burrow in 1973; cf. Lubotsky 2001: 308 sq. and Chlenova (1984) who "shows a correspondence between Iranian place names and the distribution of the Timber Grave, Andronovo, and related cultural groups. Place names of Indo-Aryan character are scattered or absent in that area" (Makkay in Lamberg-Karlovsky 2002: 79).

⁹ < n.204 > For an initial discussion see Witzel (forthc. b); to be added is the comparison of a shamanistic BMAC seal and its Hindukush and Vedic relationships, see n. 200.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

<p.58>

ABBREVIATIONS

AB	Aitareya Brāhmaṇa
Akkad.	Akkadian
Armen.	Armenian
Austro-As.	Austro-Asiatic
AV	Atharvaveda Saṃhitā
Avest.	Avestan
Brah.	Brahui
BSS	Baudhāyana Śrautasūtra
Bur.	Burushaski
Cauc.	Caucasian
CDIAL	Turner 1966-69
Circ.	Circassian
DEDR	Burrow, T. and M.B. Emeneau 1984
Drav.	Dravidian
EJVS	Electronic Journal of Vedic Studies
Elam.	Elamite
ep.	Epic Sanskrit
EWA	Mayrhofer 1956-76
FU	Finno-Ugrian
F-Volg.	Finnish-Volgaic
Gr.	Greek
GS	Gr̥hyasūtra(s)
Guj.	Gujarati
Hitt.	Hittite
IA	Indo-Aryan
IE	Indo-European
IJ	Indo-Iranian Journal
Ir.	Indo-Iranian
Indo-Ar.	Indo-Aryan
Ir(an).	Iranian
JAOS	Journal of the American Oriental Society
JB	Jaiminiya Brāhmaṇa
Jpn.	Japanese
Kab.	Kabardian
Kan.	Kannada, Canarese
Kartv.	Kartvelian
Kaśm.	Kashmiri
KEWA	Mayrhofer 1986-96
Khot.	Khotanese Saka
KZ	Zeitschrift für Vergleichende Sprachwissenschaft
Lith.	Lithuanian
M	Middle-
Mal.	Malayalam
Mar.	Marathi
Mbh.	Mahābhārata
MIA	Middle Indo-Aryan
Mong.	Mongolian

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

M.P.	Middle Persian
MS	Maitrāyaṇi Saṃhitā
MT	Mother Tongue (Boston)
N	New-
NEC	Northeast Caucasian
Nep.	Nepali
N.P.	New Persian
NIA	New Indo-Aryan
Nur.	Nuristani (Kafiri)
NWC	Northwest Caucasian
O	Old-
O.Avest	Old Avestan
OHG	Old High German
OIA	Old Indo-Aryan
O.P.	Old Persian
Osset.	Ossete
P	Proto-
Panj.	Panjabi
PEC	Proto-East Caucasian
Pkt.	Prakrit
PNC	Proto-North Caucasian
PPerm.	Proto-Permian
PS	Paippalāda Saṃhitā
RV	Ṛgveda Saṃhitā
RVKh	Ṛgveda Khila
Saṃh.	Saṃhitā(s)
Sant.	Santali
ŚB	Śatapatha Brāhmaṇa
ŚS	Śrautasūtra
Skt.	Sanskrit
Sum(er).	Sumerian
Sū.	Sūtra(s)
StII	Studien zur Indologie und Iranistik
Tam.	Tamil
Tel.	Telugu
Tib.	Tibetan
Tib.-Burm.	Tibeto-Burmese
Toch.	Tocharian
TS	Taittirīya Saṃhitā
Up.	Upaniṣad(s)
V.	Vīdevdād
Ved.	Vedic
VS	Vājasaneyi Saṃhitā
Y.	Yasna
Y.Avest.	Young Avestan
Yt.	Yašt
Yen.	Yeneseian
YV	Yajurveda (-Saṃhitā)
ZDMG	Zeitschrift der Deutschen Morgenländischen Gesellschaft

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

BIBLIOGRAPHY

Adams, D.Q. On the History and Significance of Some Tocharian B Agricultural terms. In: Mair 1998 : 372-378

Allchin, F. R. *The Archaeology of Early Historic South Asia. The Emergence of Cities and States*. With Contributions from G. Erdosy, R. A. E. Coningham, D. K. Chakrabarti and B. Allchin. Cambridge: Cambridge University Press 1995

Antilla, R. *Historical and Comparative Linguistics*. Amsterdam/Philadelphia: John Benjamins 1989

Bagchi, P. C. (ed.), *Pre-Aryan and Pre-Dravidian in Sanskrit*. Calcutta : University of Calcutta 1929

Balkan, K. *Kassitenstudien I: Die Sprache der Kassiten*. New Haven: American Oriental Society 1954.

Behr, W. Hic sunt leones. Two ancient Eurasian migratory terms in Chinese revisited. Paper at the 31st International Conference on Sino-Tibetan Languages & Linguistics (Lund, 1-4 Oct. 1998). Preprint, n.d.

Bengtson, J. D. Macro-Caucasian phonology. In: Shevoroshkin, V. (ed.) *Nostratic, Dene-Caucasian, Austric and Amerind*. Bochum: Brockmeyer 1992: 342-352

---, A Comparison of Basque and (North) Caucasian Basic Vocabulary. *MT V*, 1999, 41-57

---, Genetic and Cultural Linguistic Links between Burushaski and the Caucasian Languages and Basque. Paper at the 3rd Harvard Round Table on the Ethnogenesis of Central and South Asia, May 2001

Benveniste, E. *Indo-European language and society*. Coral Gables: University of Miami Press 1973

Berger, H. Die Buruškasi-Lehnwörter in der Zigeunersprache. *IJ 3*, 1959, 17- 43

---, Bericht über sprachliche und volkskundliche Forschungen im Hunzatal. *Anthropos* 55, 1960, 657-664

Blažek, V. The Sino-Tibetan etymology of the Tocharian A *mkow* - B *moko* 'monkey'. *Archív Orientalní* 52, 1984, 390-392

---, The new Dravidian-Afroasiatic Parallels. In: V. Shevoroshkin (ed.). *Nostratic, Sino-Caucasian, Austric and Amerind*. Bochum: Brockmeyer 1992: 150-165

---, Is Indo-European *H₁ek'wo- 'horse' really of Indo-European origin? *Studia Indogermanica Lodziensia* 2, 1998, 21-31

---, Elam: a bridge between Ancient Near East and Dravidian India? In: Blench, R. and M. Spriggs 1999, 48-77

---, Elam: A Bridge between the Ancient Near East and Dravidian India? *Mother Tongue VII*, 2002a, 123-143

---, Elamo-Arica, *JIES* 30, 2002b, 215-241

---, Hic erant leones. Indo-Iranian "lion" et alii. (preprint, nd. np.)

---, and C. Boisson, The Diffusion of Agricultural Terms from Mesopotamia. *Archív Orientalní* 60, 1992, 16-37

Blench R. and M. Spriggs, *Archaeology and Language I. Theoretical and methodological orientations*.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

London/New York : Routledge 1997

---, *Archaeology and Language II. Correlating archaeological and linguistic hypotheses*. London/New York :
Routledge 1998

---, *Archaeology and language IV. Language change and cultural transformation*. London/New York :
Routledge 1999

Bondaruk, G.P, ĩ.M. Murzaev, V.A. Nikonov, V.V. Tsybul'ski (eds.). *Toponimika Vostoka. Novye
Issledovaniia*. Moskva: Nauka 1964

Brereton, J. P. 1981. *The Rgvedic Ādityas*. New Haven.

Bucherer-Dietschli, P. & C. Jentsch. *Afghanistan. Ländermonographie, bearbeitet von der
Arbeitsgemeinschaft Afghanistan*. Liestal : Stiftung Bibliotheca Afghanica. 1986.

Burrow, T. and M. B. Emeneau, *A Dravidian Etymological Dictionary*. Second Edition. Oxford: Clarendon
Press 1984 (DEDR)

C. Carpelan et al., *Early contacts between Uralic and Indo-European*, Helsinki, 2001 [Memoires de la
Societie Finno-Ougrienne 242]

Carpelan, C. and A. Parpola. Emergence, Contacts and dispersal of Proto-Indo-European, Proto-Uralic
and Proto-Aryan in archaeological perspective. In: Carpelan et al. 2001: 55-150

Chlenova, N. Archaeological materials of the Iranians of pre-Scythian times and the Indo-Iranians.
Sovetskaia Arkheologiia, 1, 1984, 88-103

Colarusso, J. Languages of the Dead. In V. Mair 1998: 431- 447

Clauson, G. The Foreign Elements in early Turkish. *Researches in Altaic Languages*, L. Ligety (ed.)
Budapest: Akadémiai Kiadó 1975

Dani, A. H. and V. M. Masson (eds.), *History of civilisations of Central Asia*, Vol. I. *The dawn of
civilisation: earliest times to 700 BCE*. Paris: Unesco Publishing 1992

Dodykhudoev, R. Kh. *Pamirskaiia mikrotoponimiia: issledovanie i materialy*. Dushanbe : Irfon 1975.

Dodykhudoeva, L. R. The problem of East-Iranian loan words in Tajik language, (conf. paper) 2000

Dul'zon, A.P. Ket toponyms of Western Siberia. *Uchenye Zapiski, Tomskii Gosudarstvennyi Pedagogicheskii
Universitet* 18, Tomsk 1959: 91-111

---, Drevnie toponimi yuzhnoi Sibiri indoevropskogo proiskhodzheniia. In: Bondaruk et al., 1964,
14-17

---, Ketskie imena i prozvishcha. In: Murzaev et al., 1980: 5-9

ĩdel'man, D. I. *Osnovnye voprosy lingvisticheskoi geografii. Na materiale indoiranskikh iazykov*. Moskva:
Nauka 1968

---, K substratnomu neslediiu tsentral'noaziatskogo iazykovogo soiuzu. *Voprosy iazykoznaniiia*, 5, 1980,
21-32

---, Geograficheskie nazvaniia Pamira. *Strany i narody Vostoka*. Vyp. 16. Pamir. Moskva 1975

Eichler, E., G. Hilty, H. Löffler, H. Stegler, L. Zgusta (eds.). *Namenforschung. Name Studies. Les nomes
propres. Ein internationales Handbuch zur Onomastik. An International Handbook of Onomastics. Manuel*

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

international d'onomastique. Vol. 1. Berlin: de Gruyter 1995

Eilers, W. *Geographische Namensgebung in und um Iran. Ein Überblick in Beispielen*. Bayerische Akademie der Wissenschaften, Phil.-Hist. Klasse Sitzungsberichte, Jg. 1982, Heft 5. München 1982.

---, *Iranische Ortsnamenstudien*. Sitzungsberichte der Österreichischen Akademie der Wissenschaften, Phil.-Hist. Klasse 465. Wien 1987.

EJVS 9: see Houben, J., et al. [Soma Workshop, Leiden 1999]

Elizarenkova, T. *Language and style of the Vedic Ṛṣis*, Albany : SUNI 1995.

Erdosy, G. (ed.). *The Indo-Aryans of Ancient South Asia*. (Indian Philology and South Asian Studies, 1). Berlin/New York : de Gruyter 1995

---, Language, ethnicity and migration in protohistoric Margiana. In: Gubaev, A., G. Kosholenko, M. Tosi. *The archaeological map of the Murghab delta. Preliminary Report 1990-1995*. Rome, ISAIO 1998: 141-147

Falk, H. The purpose of Ṛgvedic ritual. In: M. Witzel (ed.) *Inside the texts, Beyond the Texts. New Approaches to the Study of the Vedas*. Cambridge 1997, 67-88.

Francfort, H.-P. *Fouilles de Shortughai: recherches sur l'Asie centrale protohistorique*, par Henri-Paul Francfort avec des contributions de Ch. Boisset [et al.]. [Mémoires de la Mission archéologique française en Asie centrale] Paris: Mission archéologique française en Asie centrale: de Boccard 1989.

---, *Nomades et sédentaires en Asie centrale: rapports de l'archéologie et de l'ethnologie : actes du colloque franco-soviétique, Alma Ata (Kazakhstan), 17-26 octobre 1987, textes réunis par H.-P. Francfort*. Paris: Editions du Centre national de la recherche scientifique, diffusion: Presses du CNRS 1990.

---, The Central Asian dimension of the symbolic system in Bactria and Margiana. *Antiquity* 68, 1994, 406-418

--- et E. M. Kuz'mina. Du nouveau dans la chronologie de l'Asie Centrale du Chalcolithique à l'Age du Fer. *Rapport du Groupe de travail 'Asie'*. Actes du colloque "C14 Archéologie", Paris 1998: 467-469

---, Compte rendu: V. H. Mair, 1991. In: *BEFEO* 86, 1999, 449-458

---, The Archaeology of Protohistoric Central Asia. In Carpelan et al. 2001: 151-168

Gamkrelidze, V. T. and V.V. Ivanov. Pervye Indoevropeitsy v istorii: predki Tokhar v drevnei Perednei Azii. *Vestnik Drevnei Istorii*, 1989, 14-39 [Engl. Summary: "The first Indo-Europeans in history: ancestors of the Tokharians in ancient Near East", p. 38-39]

Gelb, I.J. Makkan and Meluhha in Early Mesopotamian Sources, *Revue d'Assyriologie* 64, 1970, 1-7 = F.R. Allchin and D. Chakrabarti, *A Source-book of Indian Archaeology*, Vol. II Settlements, Technology and Trade. Delhi: Munshiram 1997, 59- 596

Gryunberg, A.L. Zametki po toponimii afghanskogo Badakhshana. In: Murzaev 1980, 165- 169

Gulieva, L.G. O nazvaniikh reki Kuban. In: Murzaev et al., 1960, 135-139

Hänsel, B., S. Zimmer et al. (eds.) *Die Indogermanen und das Pferd. [Akten des Internationalen interdisziplinären Kolloquiums. Freie Universität Berlin, 1.-3. Juli 1992, Bernfried Schlerath zum 70. Geburtstag gewidmet]*. Budapest 1995

Hamp, E. Whose were the Tocharians? In: V. Mair 1998: 307-346

Harris, D. R. (ed.). *The Origins and Spread of Agriculture and Pastoralism in Eurasia*. London: UCL Press

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

1996

---, and C. Gosden, 1996, The beginnings of agriculture in western Central Asia. In: Harris 1996: 370-389.

Harmatta, J. The emergence of the Indo-Iranians: The Indo-Iranian languages. In: Dani, A.H. and V. M. Masson, *History of civilizations of Central Asia. Volume I. The dawn of civilization: earliest times to 700 B.C.* Paris: Unesco Publishing 1992, 357-378

Henning, W. The first Indo-Europeans in history. In: Ulmen, G.L. (ed.) *Society and History. Essays in Honour of Karl August Wittvogel.* The Hague-Paris-New York: Mouton 1978: 215-230

Hiebert, F. T. South Asia from a Central Asian perspective. In: G. Erdosy 1995, 192-212

---, Central Asians on the Iranian Plateau: A Model for Indo-Iranian Expansionism, in V. Mair 1998, 148-161

---, The recently discovered Bronze Age inscription (2300 BC) from Anau, Central Asia. Paper at: *Third Harvard Round Table on the Ethnogenesis of South and Central Asia*, May 12-14, 2001
(<http://www.fas.harvard.edu/~sanskrit/RoundTableSchedule.html>)

---, and C.C. Lamberg-Karlovsky Central Asia and the Indo-Iranian borderlands. *Iran* 1992, 1-15

Hinüber, O.v. Indische Namen in Zentralasien bis 1000 n.Chr. In: Eichler, E. et al. 1995: 657-665

Hintze, A. The Migrations of the Indo-Aryans and the Iranian Sound-Change $s > h$. W. Meid (ed.) *Akten der Fachtagung der Indogermanischen Gesellschaft in Innsbruck* 1996. Innsbruck 1998

Hock, H.H. Out of India? The linguistic evidence. In: J. Bronkhorst & M. Deshpande, *Aryan and Non-Aryan in South Asia. Evidence, Interpretation and Ideology.* Harvard Oriental Series. Opera Minora, vol. 3. Cambridge 1999, 1-18

Hoffmann, K. *Aufsätze zur Indoiranistik.* (ed. S. Glauch, R. Plath, S. Ziegler, vol. 3). Wiesbaden 1992

Horn, P. *Grundriss der neupersischen Etymologie.* Strassburg: Trübner 1893

Houben, J.E.M. (ed.) *EJVS* 9: 1. The Soma-Haoma problem: Introductory overview and observations on the discussion (J.E.M. Houben); 2. Report of the Workshop (J.E.M. Houben); 3. Report concerning the contents of a ceramic vessel found in the 'white room' of the Gonur Temenos, Merv Oasis, Turkmenistan (C.C. Bakels); 4. Margiana and Soma-Haoma (Victor I. Sarianidi); 5. Soma and Ecstasy in the Rgveda (G. Thompson). [Proceedings of a Workshop on the Soma-Haoma problem organized by the Research school CNWS, Leiden University, 3-4 July 1999] *Electronic Journal of Vedic Studies* 9, 2203. <http://users.primushost.com/~india/ejvs/>

Huld, M. E. The linguistic typology of the old European substrata in North Central Europe, *JIES* 18, 1990, 389-411.

Humbach, H. Historisch-geographische Notizen zum 6. Buch der Geographie des Ptolemaios. *Jahrbuch des Römisch-Germanischen Zentralmuseums*, 19, Mainz 1972, 89-98.

---, A Western Approach to Zarathustra. *Journal of the K. R. Cama Oriental Institute* 51, 1984, 15-31

---, The Gāthās of Zarathustra and the Other Old Avestan Texts. by H. Humbach in collaboration with J. Elfenbein and P. O. Skjærvø. Part I. Heidelberg 1991

---, and Susanne Ziegler. *Ptolemy, geography, book 6: Middle East, Central and North Asia, China.* Wiesbaden: Reichert, 1998

Illich-Svitych, V. M. *Opyt sravneniia nostraticheskikh iazykov.* II, Moskva: Nauka 1976

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Ivanov, V.V. Tocharian and Ugrian. *Studia Linguistica Diachronica et Synchronica*. Berlin-New York-Amsterdam 1985: 411-419

Janhunen, J. The Horse in East Asia: Reviewing the Linguistic Evidence. In: Mair 1998: 415-430
---, Uralic and Ural-Altai, in Carpelan et al. 2001, 207-220
Jettmar, K. *Die Religionen des Hindukusch*. Stuttgart: Kohlhammer 1975

Joki, A.J. *Uralier und Indogermanen. Die älteren Berührungen zwischen den uralischen und indogermanischen Sprachen*. Helsinki 1973

Katz, H. *Studien zu den älteren indoiranischen Lehnwörtern in den uralischen Sprachen*. Habilschrift München 1985
---, *Fremd und Eigen : Untersuchungen zu Grammatik und Wortschatz des Uralischen und des Indogermanischen: in memoriam Hartmut Katz*. Wien: Praesens, 2001.

Kenoyer, J. M. Interaction systems, specialised crafts and culture change: The Indus Valley Tradition and the Indo-Gangetic Tradition in South Asia. G. Erdosy (ed.) *The Indo-Aryans of Ancient South Asia*. Berlin/New York: de Gruyter 1995, p. 213-257
---, *Ancient Cities of the Indus Valley Civilization*. Oxford: Oxford University Press/American Institute of Pakistan Studies 1998

Khasanov, Kh. Kh. Istoriko-toponimicheskaja skhema Srednei Azii. In : Murzaev et al., 1960, 156-160

A. L. Khromov, Izuchenie geograficheskikh nazbanii Tadjikistana v SSSR i za rubezhom. *Izvestiia otdeleniia obshchestvennykh nauk AN Tadjikskoi SSR*. No. 2 (36) Duzhanbe 1959
---, Sogdiiskaia toponimiiia verkhov'ev Zeravshana. In: Murzaev et al., 1960, 87-98;
---, Nekotorye osobennosti formirovaniia toponimii Srednei Azii v IX-XIII vv. In: Murzaev 1980: 132-139

Kibrik, A. E. and S.V. Kodzasov. *Sopostavitel'noe izuchenie dagestanskikh iazykov: imia, fonetika*. Moskva: Izdatel'stvo Moskovskogo universiteta 1990.

Klein, J. On Verbal Accentuation in the Rigveda. In: Witzel 1997: 139-166

Koivulehto, J. The earliest contacts between Indo-European and Uralic speakers. In: C. Carpelan et al., 2001, 235-263

Krause, Wolfgang. Zur Frage nach dem nichtindogermanischen Substrat des Tocharischen. *KZ* 69, 1948, 187-203

Kuiper, F.B. J. *Proto-Munda words in Sanskrit*. Amsterdam: Noord-Hollandsche Uitgevers Maatschappij 1948
---, Rigvedic loan-words. In: O. Spies (ed.) *Studia Indologica. Festschrift für Willibald Kirfel zur Vollendung seines 70. Lebensjahres*. Bonn: Orientalisches Seminar 1955.
---, *On Zarathustra's Language*. Amsterdam: Noord-Hollandsche Uitgeversmaatschappij 1979
---, *Aryans in the Rigveda*. Amsterdam-Atlanta 1991.

Kuz'mina, E. E. Contacts between Finno-Ugric and Indo-Iranian Speakers. In: Carpelan et al., 2001: 289-300

Lamberg-Karlovsky, C.C. Language and Archaeology. The Indo-Iranians. *Current Anthropology* 43,

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

2002, 63-88

Landsberger, B. Einige unerkant gebliebene oder verkannte Nomina des Akkadischen. *Die Welt des Orients* 3, 1954, 246-267

Lin, Meicun. The earliest Tocharian Loan-words in Ancient Chinese. In Mair, 1998: 476-482

Linder, Th. Griechische (incl. mykenische) Ortsnamen. In: Eichler et al. 1995: 690- 705

Lubotsky, A. Tocharian Loan Words in Old Chinese: Chariots, Chariot Gear, and Town Building. In: Mair 1998: 379-390

--, Indo-Iranian Substratum. In: C. Carpelan et al. 2001, 301-317

Mair V. (ed.) *The Bronze Age And Early Iron Age Peoples of Eastern Central Asia*, ed. by Victor Mair. 2 vols. = *JIES Monograph 26*, Washington/Philadelphia: The Institute for the Study of Man / The University of Pennsylvania Museum Publications 1998

---, Notes on the Anau Inscription. *Sino-Platonic Papers*, 112, July 2001

---, (ed.) *Contact and Exchange in the Ancient World.* [Proceedings of a conference held at Philadelphia on May 5-6, 2001.] Honolulu: University of Hawaii Press (forthc.)

Mallory, J.P. A European Perspective on Indo-Europeans in Asia. In: Mair 1998: 175-201

---, Uralics and Indo-Europeans: Problems of Time and Space. In: Carpelan et. al. 2001: 345- 365

Masson, V. M. The environment. In: Dani 1992, 29-44

Mayrhofer, M. *Kurzgefasstes etymologisches Wörterbuch des Altindischen*. Heidelberg 1956-1976. (KEWA)

---, *Etmologisches Wörterbuch des Altindoarischen*. Heidelberg 1986-96 (EWA)

---, *Ausgewählte kleine Schriften* (S. Deger-Jalkotzy u. R. Schmitt, eds.): Wiesbaden: Reichert 1979

McAlpin, D.W. *Proto-Elamian-Dravidian: the evidence and its implications*. *Transactions of the American Philosophical Society*, 71, Philadelphia 1981

---, et al. Comment on David W. McAlpin's 'Elamite and Dravidian: Further Evidence of Relationship.' [With discussion by M.B. Emeneau, W.H. Jacobsen, F.B.J. Kuiper, H.H.Paper, E. Reiner, R. Stopa, F. Vallat, R.W. Wescott, and a reply by McAlpin]. *Current Anthropology* 16, 1975, 105-115

Meadow, R. *The equids of Mehrgarh, Sibri and Pirak: An Osteological Evidence for the Introduction of the Horse to South Asia*. Paper presented at the Seventh Conference of South Asian Archaeology, Brussels, 4-8 July 1983.

---, The origins and spread of agriculture and pastoralism in northwestern South Asia. In: Harris 1996: 390-412.

---, *The Review of Archaeology. The Transition to Agriculture in the Old World*, 19, 1998, (Special Issue ed. by Ofer Bar-Yosef), 12-21

Misra, S.S. *The Aryan problem, a linguistic approach*. New Delhi: Munshiram Manoharlal, 1992

---, *The date of the Rigveda and the Aryan migration: fresh linguistic evidence*. Pune: University of Pune 1999.

Morgenstierne, G. *An Etymological Vocabulary of Pashto*. Oslo: J. Dybwad 1927

---, *Irano-Dardica*. Wiesbaden: Harrassowitz 1973

Murzaev, ĭ.M. Tsentral'noasiatskie toponimicheskie miniatiury. In: Bandaruk 1964, 3- 13

---, B.A. Nikonov, V.V. Tsybul'ski (eds.). *Toponimika vostoka. Issledovaniia i materialy*. Moskva : Nauka 1969

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

---, *Onomastika vostoka*. [Sbornik statei, Ordena Trudovogo Krasnogo Znameni Institut Vostokovedeniia, Institut etnografii]. Moskva : Nauka 1980.

Nichols, J. The epicentre of the Indo-European linguistic spread. In: Blench, R. and M. Spriggs 1997, 122-148

---, The Eurasian spread zone and the Indo-European dispersal. In: Blench, R. and M. Spriggs 1998, 220-266

Nyberg, H. The problem of the Aryans and the Soma: The botanical evidence. In: Erdosy 1995: 382-406

Pakhalina, T.N. O proistoskhozhdennii toponimov Ishkashim, Yazguliam i Vakhan. In: *Iranskoe Iazykoznanie*. Moskva 1976

Parkes, P. Livestock symbolism and pastoral ideology among the Kafirs of the Hindu Kush. *Man* (N.S.) 22, 1987, 637-660

Parpola, A. The problem of the Aryans and the Soma: Textual-linguistic and archaeological evidence. In: Erdosy 1995: 351-381

Pinault, G.-J. Notes d'onomastique koutchéenne. *Tocharian and Indo-European Studies* I, 1987, 77-97

---, Tocharian Languages and Pre-Buddhist Culture. In : Mair 1998: 358-378

---, Tokh. B *k_ucaññe*, A *k_uciñ* et Skt. *tokharika*, *IJJ* 45, 2002, 311-345

---, Further links between the Indo-Iranian substratum and the BMAC language. Paper given at the 12th World Sanskrit Conference, Helsinki, 14-18 July 2003.

Pinnow, H.-J., Zu den altindischen Gewässernamen. *Beiträge zur Namensforschung* 4, 1953, 217-234; 5, 1954, 1-19.

---, *Versuch einer historischen Lautlehre der Kharia-Sprache*, Wiesbaden 1959

Polomé, E. C. The non-Indo-European component of the Germanic lexicon. In: *o-o-per-ro-si. Festschrift für Ernst Risch*, ed. A. Etter, Berlin: Mouton de Gruyter 1986: 661-672

---, The Indo-Europeanization of northern Europe: the linguistic evidence. *Journal of Indo-European Studies* 18, 1990, 331-338.

Possehl, G. Meluhha. in : J. Reade (ed.) *The Indian Ocean in Antiquity*. London: Kegan Paul Intl. 1996: 133-208

---, The Transformation of the Indus Civilization. *Journal of World Prehistory* 11, 1997, 425-72

--- and P. Gullapalli. The Early Iron Age in South Asia. In: V. Pigott (ed.), *The Archaeometallurgy of the Asian Old World*. Philadelphia: The University Museum 1999: 153-175

Postelov, E.M. Gidronimicheskie arealy tsentraloi Azii. In: Murzaev 1980, 118-123

Pulleyblank, E.G., The Consonantal System of Old Chinese, *Asia Major* 9, 1962, 58-144, 206-255

---, Chinese and Indo-Europeans. *JRAS* 1966: 9-39

---, Why Tocharians? *JIES* 23, 1995, 415-430

Rau, W. A Note on the Donkey and the Mule in early Vedic literature. *Adyar Library Bulletin* 44-45, 1980-81, 179-189

Raulwing, P. *Horse, Chariots and Indo-Europeans. Foundations and Methods of Charioty Research from the Viewpoint of Comparative Indo-European Linguistics*. Budapest : Archaeolingua [Series Minor 13] 2000

Rédei, K. *Zu den indogermanisch-uralischen Sprachkontakten*. Sitzungsberichte der Österreichischen

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

- Akademie der Wissenschaften, Philosophisch-Historische Klasse, 468 Band. Wien 1986
---, Die ältesten indogermanischen Lehnwörter der uralischen Sprachen, in: D. Sinor (ed.) *The Uralic Languages: Description, History and Foreign influences*. Leiden: Brill 1988: 638-664
- Reinhart, J. Die tocharischen Entlehnungen im Altaischen und die Chronologie der tocharischen Lautgesetze. In: *Tocharische Akten der Fachtagung der Indogermanischen Gesellschaft*. Berlin 1990 : 73-92
- Róna-Tas, A. *Tibeto-Mongolica*. The Hague: Mouton 1966
---, Tocharische Elemente in den altaischen Sprachen. *Schriften zur Geschichte und Kultur des alten Orients. Protokollband der XII Tagung der Permanent International Altaistic Conference* (1969). Berlin 1974: 499-504
---, On the earliest Samoyed-Turkish contacts. *Congressus Quintus Internationalis Fenno-Ugristarum. 3. Dissertationes symposiorum linguisticorum*. Turku, 1980: 377-385
---, Altaic and Indo-European: Marginal Remarks on the Book of Gamkrelidze and Ivanov. *Acta Orientalia Academiae Scientiarum Hungaricae* 42, 1988, 391-404.
- Ronca, I. *Ostiran und Zentralasien bei Ptolemaios*. Diss., Mainz 1968.
---, *Geographie* 6,9-21. *Ostiran und Zentralasien. Griechischer Text neu hrsg. und ins Deutsche übertragen von Italo Ronca, mit der lateinischen Übersetzung des Jacobus Angelus, einer neuen englischen Übersetzung und textkritischen Noten*. Rom, IsMEO, 1971.
- Rozenfel'd. A.Z. *Materialy po ètnografii i toponimike Vancha*. *Izvestiia VGO*. 85: 4, 1953
---, Zаметki po gidronomii iugo-vostochnogo Tadjhikistana. In: Bondaruk et al., 1964: 175-182
---, Tadjhikskaia toponimii Badakhshana. (Gorno-Badakhshanskaia oblast' Tadjhikskoi SSR). In: Murzaev 1980: 156-164
- Sapir, E. Tibetan influences on Tocharian. Mandelstam, D.G. (ed.) *Selected writings of E. Sapir in language, culture, and personality*. Los Angeles 1951, 273-284
- Sarianidi, V. I. *Drevneishii Merv. [In' gradymy Merv. The oldest Merv]*. Moskva: Izdatel'skaia firma "Kruk" 1992
---, Food-producing and other neolithic communities in Khorasan and Transoxania: Eastern Iran, Soviet Central Asia and Afghanistan. In: Dani 1992: 109-126
---, *Margiana and Protozoroastrism*. Translated from Russian by Inna Sarianidi. Athens : Kapon Editions 1998a.
---, *Myths of Ancient Bactria and Margiana on its Seals and Amulets*. Moscow 1998b
- Savina, V. I. O tipakh slovoobrazovaniia toponimov Irana. In: Bondaruk 1964 : 149-174
---, ðtnonimy v toponimii Irana. In: Murzaev (ed.). *Onomastika Vostoka*. Moscow 1980: 140-155.
- Schmid, W.P. Alteuropäische Gewässernamen in: Eichler et al. 1995: 756-762
- Schmitt, R. Iranische Namen. In: Eichler et al. 1995: 678- 690
- Shafer, R. *Ethnogeography of Ancient India*, Wiesbaden 1954
- Sherratt, A. Patterns of Growth: Nodes and Networks in the Ancient World. In: V. Mair (ed., forthc.)
- Shishlina, N.I. and F.T. Hiebert. The Steppe and the Sown: Interaction between Bronze Age Eurasian Nomads and Agriculturalists. In: Mair 1998: 222-237
- Skjǫrvø, P.O. The Avesta as a source for the early history of the Iranians. In: G. Erdosy (ed.), *The Indo-*

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Aryans of Ancient South Asia, (Indian Philology and South Asian Studies 1), Berlin/New York: de Gruyter 1995, 155-173.

Staal, J. F. How a psychoactive substance becomes a ritual: the case of Soma. *Social Research* 68, 2001, 745-778

Starostin, S.A. Praeniseiskaia rekonstruktsiia i vneshnie sviazi eniseiskikh iazykov. *Ketskii sbornik: antropologiia, etnografiia, mifologiia, lingvistika*. Leningrad: Nauka 1982: 144-237
---, *Rekonstruktsiia drevnekitaiskoi fonologicheskoi sistemy*. Moskva: Nauka 1989.

Steinkeller, P. The question of Marḥaši: A Contribution to the Historical Geography of Iran in the Third Millennium B.C. *Zeitschrift für Assyriologie und Vorderasiatische Archäologie* 72, 1982, 237-65
---, *Marḥasi*. In: *Reallexikon der Assyriologie und Vorderasiatischen Archäologie*, Berlin: De Gruyter 1989: 381-2

Southworth, F. Lexical evidence for early contacts between Indo-Aryan and Dravidian. In: M. Deshpande and P.E. Hook (eds.). *Aryan and Non-Aryan in India*. Ann Arbor: Center for South and Southeast Asian Studies, University of Michigan 1979, 191-233
---, Ancient economic plants of South Asia: linguistic archaeology and early agriculture. In: *Languages and Cultures. Studies in Honor of Edgar C. Polomé*. M.A. Jazayery and W. Winter (eds.), Berlin/New York : Mouton de Gruyter 1988, 659-668

Szemerényi, O. Structuralism and substratum. Indo-Europeans and Aryans in the Ancient Near East, *Lingua* 13, 1964, 1-29.
---, *Four Old Iranian Ethnic Names: Scythian - Skudra - Sogdian - Saka*. Sitzungsberichte der Österreichischen Akademie der Wissenschaften, 386, Bd. 9, 1980

Thieme, P. *Kleine Schriften*. K. L. Janert (ed.). 2 vols. Wiesbaden. 2nd ed. Wiesbaden 1984.
---, *Kleine Schriften 1970-1987*. R. Söhnen (ed.). Stuttgart. 1991

Thompson, G. The relationship between Vedic and Avestan: the provenance of Soma, amshu, and its relation to the BMAC? Paper at: *Third Harvard Round Table on the Ethnogenesis of South and Central Asia*, May 12-14, 2001
(<http://www.fas.harvard.edu/~sanskrit/RoundTableSchedule.html>)
---, Soma and Ecstasy in the Rgveda. In: Houben, J.E.M. (ed.) *EJVS* 9 (2003).
<http://users.primushost.com/~india/ejvs>

Tikkanen, B. *The Sanskrit Gerund. A Synchronic, Diachronic and Typological Analysis*. Helsinki 1987
---, On Burushaski and other ancient substrata in northwest South Asia. *Studia Orientalia* (Helsinki), 64, 1988, 303-325
---, Archaeological-linguistic correlations in the formation of retroflex typologies and correlating areal features in South Asia. In: Blench and Spriggs 1999: 138-148

Tuite, K. Evidence for Prehistoric Links between the Caucasus and Central Asia: The Case of the Burushos. In: V. Mair 1998: 448-475

Turner, R. L. *A comparative Dictionary of the Indo-Aryan Languages*. London 1966 (CDIAL)

Vaijda, E. J. The Kets and their language, *Mother Tongue* IV, 4-16

Vallat, F. *Suse et Elam*. Paris : Boccard 1980
---, *Éléments de géographie élamite (résumé)* *PO* 11, 1985, 49-54

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

---, *Les noms géographiques des sources suso-élamites*. Wiesbaden: Reichert 1993

Vamberi, H. Die geographische Nomenklatur Zentralasiens. *Petermanns Mitteilungen*, 37. Gotha 1891.

Vasil'kov, Ya. V. and N.V. Gurov. Strana Aratta po drevnim pis'mennym istochnikam. *Vestnik Vostochnogo Instituta/Acta Institutionis Orientalis* (Sankt Peterburg) 1, 1995, 12-66

Vennemann, Th. Linguistic reconstruction in the context of European prehistory. *Transactions of the Philological Society* 92 (1994) 215-284

---, Basken, Semiten, Indogermanen: Urheimatfragen in linguistischer und anthropologischer Sicht. In: W. Meid (ed.), *Sprache und Kultur der Indogermanen: Akten der X. Fachtagung der Indogermanischen Gesellschaft, Innsbruck, 22.-28. September 1996*. Innsbruck: Institut für Sprachwissenschaft, 1998: 119--138

--- and A. Bammesberger, *Germania Semitica*. Heidelberg 2001

Voigt, W. *Die Wertung des Tieres in der zarathustrischen Religion*. München: Reinhardt 1937

Wells, R.S. et al. The Eurasian Heartland: A continental perspective on Y-chromosome diversity. *Proceedings of the National Academy of Sciences USA* 98, 2001, 10244-10249
<http://www.pnas.org/content/vol98/issue18/index.shtml>
pdf: <http://www.pnas.org/cgi/reprint/98/18/10244>

Werner, H. Reconstructing Proto-Yeneseian, *MT IV*, 1998: 20

Wirth, G. Arrian. *Der Alexanderzug: Indische Geschichte : griechisch und deutsch / Arrian*; herausgegeben und übersetzt von Gerhard Wirth und Oskar von Hinüber. München : Artemis Verlag 1985.

Witzel, M. Jungavestisch *apāxəδra-* im System der avestischen Himmelsrichtungsbezeichnungen. *Münchener Studien zur Sprachwissenschaft* 30, 1972, pp. 163-191

---, Early Eastern Iran and the Atharvaveda. *Persica* 9, 1980, 86-128

---, Sur le chemin du ciel. *Bulletin des Etudes indiennes*, 2, 1984, 213-279

---, Tracing the Vedic dialects. Colette Caillat (ed.), *Dialectes dans les littératures indo-aryennes*. Paris 1989, p. 97-264

---, Meaningful ritual. Structure, development and interpretation of the Tantric Agnihotra ritual of Nepal. In: *Ritual, State and History in South Asia. Essays in honour of J.C. Heesterman*, ed. A.W. van den Hoek, D.H.A. Kolff, M.S. Oort, Leiden 1992, 774-827

---, Early Indian history: Linguistic and textual parameters In: *The Indo-Aryans of Ancient South Asia*. G. Erdosy (ed.), (Indian Philology and South Asian Studies, A. Wezler and M. Witzel, eds.), vol. 1, Berlin/New York: de Gruyter 1995, 85-125, and: Ṛgvedic history: poets, chieftains and politics, pp. 307-354.

---, The Development of the Vedic Canon and its Schools: The Social and Political Milieu. (Materials on Vedic Śākhās 8). In: M. Witzel (ed.). *Inside the Texts, Beyond the Texts. New Approaches to the Study of the Vedas*. Harvard Oriental Series. Opera Minora, vol. 2. Cambridge 1997a, 257-345

---, Introduction, In: F.B.J. Kuiper, *Selected Writings on Indian Linguistics and Philology*, ed. by A. Lubotsky, M.S. Oort, M. Witzel, Amsterdam- Atlanta: Rodopi 1997b, pp. ix-xxvi

---, Substrate Languages in Old Indo-Aryan (Rgvedic, Middle and Late Vedic), *EJVS* Vol. 5:1 1999a, 1-67 (<http://www1.shore.net/~india/ejvs> = <http://users.primushost.com/~india/ejvs>)

---, Early Sources for South Asian Substrate Languages. *Mother Tongue* (extra number), 1999b: 1-70

---, Aryan and non-Aryan Names in Vedic India. Data for the linguistic situation, c. 1900-500 B.C. in : J. Bronkhorst & M. Deshpande (eds.), *Aryans and Non-Non-Aryans, Evidence, Interpretation and Ideology*. Cambridge (Harvard Oriental Series, Opera Minora 3). 1999c, 337-404

---, The Home of the Aryans. *Anusantatyai. Festschrift für Johanna Narten zum 70. Geburtstag*, ed. A.

EXTRACT, reprinted with permission of the editor, V. Mair, from:
Michael Witzel, "Linguistic Evidence for Cultural Exchange in Prehistoric Western Central Asia,"
Sino-Platonic Papers, 129 (December, 2003)

Hintze & E. Tichy. (*Münchener Studien zur Sprachwissenschaft, Beihefte NF 19*) Dettelbach: J.H. Röhl 2000a, 283-338

---, A first link between the R̥gvedic Panjab and Mesopotamia: *śimbala/śalmali*, and *GIŠgišimmar?* In: Karttunen, K. and P. Koskikallio (eds.) *Vidyārṇavavandanam. Essays in Honour of Asko Parpola*. 2000b [*Studia Orientalia*, published by the Finnish Or. Soc. 94]: 497-508

---, Die sprachliche Situation Nordindiens in vedischer Zeit. *Indoarisch, Iranisch, und die Indogermanistik, Arbeitstagung der Indogermanischen Gesellschaft 1997 in Erlangen*; hg. B. Forssman & Robert Plath. Wiesbaden: L. Reichert 2000c, 543-579

---, Autochthonous Aryans? The Evidence from Old Indian and Iranian Texts. *EJVS* 7-3 May 25, 2001a. <http://users.primushost.com/~india/ejvs/>

---, Comparison and Reconstruction : Language and Mythology. *MT VI*, 2001b: 45- 62

---, forthc. a = Early linguistic data and the Indus civilization. In: J. Kenoyer (ed.) *Proceedings of the conference on the Indus civilization*, Madison 1998.

---, forthc. b. The R̥gvedic Religious System and its Central Asian and Hindukush Antecedents. In: *The Vedas: Texts, Language and Ritual (Proceedings of the Third International Vedic Workshop, Leiden 2002)*. Edited by A. Griffiths & J.E.M. Houben. [Groningen Oriental Studies XIX] Groningen: Egbert Forsten. [2004]

Zide, A. and Zide, N. Proto-Munda cultural vocabulary: evidence for early agriculture. In: Ph. N. Jenner et al., *Proceedings of the First International Austroasiatic Conference*. Honolulu: University of Hawaii Press 1976, 1295-1334