

ARYAN AND NON-ARYAN IN SOUTH ASIA:

 Evidence, Interpretation
and Ideology

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be wished out of existence. Therefore, to be truly helpful scholars need to join in an effort of informed reconstruction, and not be content with an act of deconstruction under the illusion that criticism of texts can make things in the real world go away. The conference "Aryan and Non-Aryan in South Asia: evidence, interpretations, ideologies" invited participation in that effort.

The outcome of the conference is presented in the following pages. The contributions fall into several groups. There are those which deal with the presumed migration of Aryans into South Asia. In this category belong the contributions by N.J. Allen, H.H. Hock, S.F. Ratnagar, J.G. Schaffer & D.A. Lichtenstein, G.L. Windfuhr, and M. Witzel, who discuss the linguistic, literary and archaeological evidence. One recurrent theme is the biased manner in which earlier research interpreted the evidence, presenting a simple picture of historical events which must have been a great deal more complex. Other contributions present an assessment of current and past debates. E.F. Bryant evaluates the arguments of those who reject the Aryan immigration theory altogether, and T.R. Trautmann studies the way in which nineteenth century British scholarship viewed India and the Aryan invasion theory. The remaining articles deal with the opposition between Aryan and Non-Aryan in post-Vedic India, from the centuries preceding the common era right into the present century (J. Bronkhorst, S.L. Caldwell, M. Deshpande, L. Gómez, A. Parpola, Pashaura Singh).

Some papers presented at the conference were not available for inclusion in the present volume. They are: "Some notes on Burushaski" by J.C. Catford, "Who creates language as an identity symbol? An Indian case study" by Jayakumar Manickam, and "Dravidian place-names in Mahārāṣṭra" by Franklin C. Southworth. It is hoped that they will be published independently. The first paper by H.H. Hock, on the other hand, was written after the conference at the special request of the organizers.

Thomas R. Trautmann has been particularly active in helping to make arrangements for the conference. Special thanks are due to him. Thanks are also due to various institutions that provided support for the conference: the International Institute, the Dean of Rackham Graduate School, the Office of the Vice-President for Research, and the Center for South and Southeast Asian Studies, all at the University of Michigan; and the Faculty of Letters and the Département Interfacultaire d'Histoire et de Sciences des Religions at the University of Lausanne.

Out of India? The linguistic evidence

Introduction

As is well known, Hindu nationalist publications, including FEURSTEIN, KAK & FRAWLEY 1995, FRAWLEY 1994, and RAJARAM 1995, as well as most of the papers in DEO & KAMATH 1993,¹ reject the traditional hypothesis of an āryan migration to India and instead consider both āryas and dāsas/dasyus to be indigenous to India.

To be credible, such a claim must not only be defensible on archeological and textual grounds, it also must be shown to be compatible with the purely linguistic evidence which links Indo-Aryan genetically with the other Indo-Iranian and Indo-European languages outside of India. Many publications (including FRAWLEY 1994) try to belittle the value of this linguistic evidence, claiming that it consists of just a few lexical similarities and therefore is far from probative; others simply ignore the problem.

The evidence for genetic relationship between the Indo-European languages, however, is so massive that the relationship can only be rejected at the cost of denying the possibility of establishing any linguistic relationships, beyond the mundane connections between dialects of the same language or relationships in close-knit families such as Indo-Aryan.

The claim that the āryas are indigenous to India can therefore be reconciled with the relationship of Indo-Aryan to the rest of Indo-European only under one of two hypotheses: Either the other Indo-European languages are descended from the earliest Indo-Aryan, identical or at least close to Vedic Sanskrit, or Proto-Indo-European (PIE), the ancestor of all the Indo-European languages, was spoken in India and (the speakers of) all the Indo-European languages other than Sanskrit/Indo-Aryan migrated out of India. For convenience, let us call the first alternative the "Sanskrit-origin" hypothesis, and the second one, the "PIE-in-India" hypothesis.

In either case, we would have to assume that the speakers of the other ancient, non-Indo-Aryan members of the Indo-European language family moved out of India.

While apparently distancing himself from the political goals of the Hindutva movement, Satya Swarup MISRA presents a monograph-length argument in favor of the "Sanskrit-origin" hypothesis (MISRA 1992) which would seem to provide formidable support for the "Out-of-India" claims of Hindu nationalists. Given that MISRA has credentials as an Indo-Europeanist

1. Exceptions are the papers by MEHENDALE and MUKHERJEE.

(see especially MISRA 1968) and that he provides arguments that are explicit and show a certain degree of linguistic sophistication, his claims cannot simply be dismissed but must be subjected to critical evaluation. This is the major thrust of the present paper. Toward the end I briefly consider the much more complex issue of the "PIE-in-India" hypothesis.

As I show, the "Sanskrit-origin" hypothesis runs into insurmountable difficulties, due to the irreversible nature of relevant linguistic changes, difficulties whose magnitude is not fully appreciated by MISRA. While the likelihood of the "PIE-in-India" hypothesis cannot be assessed on the basis of similar robust evidence, I demonstrate that the hypothesis runs into severe difficulties as regards plausibility and simplicity.

The "Sanskrit-origin" hypothesis of S. S. MISRA

MISRA supports his Sanskrit-origin hypothesis by several types of arguments. Partly these arguments involve alleged contacts between Sanskrit and other languages; partly they are based on a somewhat idiosyncratic perspective on the nature of linguistic change; and partly they consist of an elaborate reinterpretation of the linguistic evidence that, since the end of the 19th century, has been taken to indicate that Sanskrit (and Indo-Iranian in general) has undergone changes whose irreversible nature makes it impossible to identify Sanskrit with the Proto-Indo-European ancestor language.

One set of arguments centers around the evidence for the presence of the Indo-Iranian "Mitanni" in the Near East by 1500 B.C.² Based on the shape of the numeral 'one', *aika-* (see Skt. *eka-* 'one'), this variety of Indo-Iranian is commonly considered to be specifically Indo-Aryan, since the extant Iranian languages have reflexes of a different form, **aiwa-*.³

2. Although the term "Mitanni" originally refers to a kingdom of the non-Indo-European Hurrians, it is convenient to use the term to refer to the Indo-Iranian or Indo-Aryan overlords of that kingdom. COWGILL 1986 provides a convenient summary of the situation, together with references to earlier literature.
3. As far as I can see, this is the only piece of evidence which comes close to establishing that the language was Indo-Aryan, rather than Indo-Iranian.

The absence of specifically Iranian developments, such as **s > h*, in words such as ^{DNGIR.MES} *našatiyanna* 'Nāsatyas', can be explained by assuming that the documents come from a period prior to these changes in Iranian, just as *wašanašaya* 'of the chariot', appears to reflect a stage prior to the change of pre-Indo-Aryan voiced aspirate **(d)ʰ > h*, assuming that the word corresponds to Skt. *vāhanasya* (see MAYRHOFER 1986, s.v. *vah-*). (Without stating so openly, MISRA tries to avoid the problem posed by *wašanašaya* by identifying *wašana-* as Skt. *vasana-* and glossing it as 'stadium'; but this interpretation cannot be reconciled with the meanings of Skt. *vasana-* or of the root(s) from which the word can be derived.)

Similarly, the appearance of names of deities which are absent in the later Iranian pantheon (such as *Varuṇa* in the form ^{DNGIR.MES} *arunašil/uruwanašil*) may be attributed to the fact that the documents belong to a time prior to the "Zoroastrian revolution" which eliminated (or demoted) many of the old, common Indo-Aryan Gods.

Accepting this identification, MISRA argues that the Mitanni form of Indo-Aryan must be later than Vedic Sanskrit and must have been imported to the Near East from India. According to MISRA, the period at which Vedic Sanskrit was spoken must therefore be assumed to have been about 5000 B.C., much earlier than the usually assumed time of about 1500 B.C. and also much earlier than any other Indo-European language.

MISRA's argument that the language of the Mitanni is later than Vedic Sanskrit rests on the fact that the Mitanni numeral for 'seven' is *šatta*, a form which looks much more like Prakrit *satta* than like (Vedic) Sanskrit *sapta*, and which therefore may suggest that this language is at the relatively late chronological stage of Middle Indo-Aryan. However, as shown already by FRIEDRICH (1940), the Mitanni form *šatta* may owe its *tt* to *šinta*/*šitta*, the word for 'seven' in the non-Indo-European Hurrian language of the subjects of the Mitanni. There is thus no compelling reason for considering the Mitanni word for 'seven' a Prakritism, and MISRA's linguistic argument for placing Vedic Sanskrit around 5000 B.C. evaporates.

MISRA, to be sure, sees additional support for his claim in a paper by BRENTJES (1981) which finds archeological evidence for diffusion of peacock motifs from India to the Near East. However, even if BRENTJES's interpretation of the evidence should be correct, the archeological record does not seem to permit us to state with confidence how the peacock motifs reached the Near East, whether they were brought by Indo-Aryans, by speakers of other languages of India, or through diffusion via intermediate populations of unknown linguistic affiliation.

MISRA finds further linguistic support for his very early chronology of Vedic Sanskrit and for a migration out of India in the claim that "Uralic" [read: Finno-Ugric] has many borrowings from Indo-Aryan and that these borrowings go back to about 5000 B.C.

MISRA's discussion does not make it possible to discern on what grounds he claims that the borrowings go back to about 5000 B.C. Moreover, he fails to indicate clearly the criteria which in his view determine whether given borrowings are Indo-Aryan, Iranian, or Proto-Indo-Iranian. In fact, statements such as 'Only when forms cannot be explained as a form from Old Indo-Aryan, we should go for the reconstructed Indo-Iranian stage' suggest

Notice that the language of the Near Eastern variety of Indo-Iranian appears to predate the earliest attested stages of both Indo-Aryan (which has changed (*d*)*ḡh* to *h*) and Iranian (with *s* > *h*). This fact, in my opinion, renders the evidence of **aika*- 'one' less probative; for we cannot be certain about the distribution of words for 'one' at that early stage of Indo-Iranian and thus cannot exclude the possibility that the later distribution of IAr. **aika*- vs. Ir. **aiwa*- results from secondary, divergent developments, and that both forms existed in Proto-Indo-Iranian, with perhaps some degree of incipient differentiation in terms of dialect and/or semantics. Support for this alternative view comes from the fact that **aiwa*- is perhaps not limited to Iranian but has also an Indo-Aryan reflex, in the form of Skt. *evā* 'indeed' (see MAYRHOFER 1986-, s.v. *evā*).

that his interpretations are biased toward Sanskrit (or "Old Indo-Aryan"), a fact which raises serious questions about his methodology.

Most important, however, even if the words in question were of Indo-Aryan, rather than Iranian or Indo-Iranian origin, they would at best indicate that there was contact between some Indo-Aryan speakers and (some) Finno-Ugric speakers outside India. They do not prove migration of Indo-Aryans out of India, for the traditional view that the contact took place prior to migration into India is equally possible, and so is the view that the Indo-Aryans in question were the ancestors of the Mitanni, whatever their chronological, geographic, and genetic relationship to Indian Indo-Aryan may have been (see MALLORY 1989: 42 for a summary of various possible perspectives on this issue, but see also note 3 above). In fact, yet another possibility exists: Rather than resulting from direct contact, the borrowings may have diffused into Finno-Ugric through intermediaries, much as Skt. *śarkara* and *khaṇḍa* have spread to English (*sugar* and *candy*) and other European languages through the mediacy of Persian and Arabic.

Can Vedic Sanskrit be identified with Proto-Indo-European?

Most important for present purposes is MISRA's attempt to demonstrate that Vedic Sanskrit (or "Old Indo-Aryan") is identical to Proto-Indo-European and that late-19th-century arguments to the contrary are mistaken and biased against Sanskrit.

To understand and evaluate MISRA's arguments on this count, it is helpful to start with a brief summary of the evidence which, to the minds of Indo-Europeanists, establishes beyond doubt that Sanskrit/Indo-Iranian is a daughter language of Proto-Indo-European, and not identical to the proto-language.

As is well known, in the early days of comparative Indo-European linguistics, Sanskrit was considered the most archaic of the Indo-European languages and closest to Proto-Indo-European, or even virtually identical to it. As a consequence, linguists postulated an Indo-European sound system which, like Sanskrit, had three basic vowels, *i*, *a*, *u*, and the richer vowel systems of other languages, especially of Greek and Latin (with *i*, *e*, *a*, *o*, *u*), were considered to result from linguistic innovations. It was only toward the end of the 19th century that a different perspective began to prevail; and this new perspective was consonant with the neogrammarian hypothesis that sound change is regular.

The new perspective has often been referred to as the "Law of the Palatals" and the evidence on which it was based is as follows. (For a more detailed discussion with references see COLLINGE 1985: 133-142.)

First, the correspondence of Sanskrit (and general Indo-Iranian) *a*-vowels to Latin and Greek *e*-, *a*-, and *o*-vowels cannot be explained by means of a regular sound change that "split" the *a* of Sanskrit/Indo-Iranian into the *e*, *a*, *o* of the other languages. The only type of regular sound change which

can explain the relationship is one through which the *e*, *a*, *o* of the other languages, and of Proto-Indo-European, “merged” into Indo-Iranian *a*; see [1] and the illustrating examples in [2].⁴

$$[1] \quad \left\{ \begin{array}{c} \text{ē} \\ \text{ā} \\ \text{ō} \end{array} \right\} > \text{ā}$$

- [2] a. **dekṃ* > *daśa* ‘10’ (Gk. *déka*)
 **es-ti* > *as-ti* ‘is’ (Gk. *estī*)
 b. **aǵ-e-ti* > *aj-a-ti* ‘drives’ (Gk. *ágō*)
 c. **oktō(w)* > *aṣṭau* ‘eight’ (Gk. *oktō*)

This type of change, however, is irreversible – we can derive the vowels of Sanskrit from those of PIE, but not vice versa. Thus, while it is possible to state that, say, every PIE *e* will correspond to an Indo-Iranian *a* (as in [2a]), it would be impossible to state under what conditions the *a*-vowels of Indo-Iranian would correspond to an *e* in the other Indo-European languages [2a], or to an *a* [2b], or to an *o* [2c]. In this sense the situation is similar to the relation between Sanskrit and Prakrit, where Skt. *tt*, *pt*, *kt* merge into *tt*, and Skt. *ś* and *s* merge into *s*; see [3]. Here, too, the changes involved are irreversible – we can derive Prakrit from Sanskrit but not vice versa.

[3] Skt. <i>satta-</i>	Pkt. <i>satta-</i>	‘having sat’
<i>sakta-</i>	<i>satta-</i>	‘followed’
<i>śakta-</i>	<i>satta-</i>	‘able’
<i>śapta-</i>	<i>satta-</i>	‘cursed’

Second, this “merger” interacted with another Indo-Iranian sound change, which palatalized PIE velars and labiovelars, see [4]. (Note that PIE velars and labiovelars merged into plain velars in the prehistory of Indo-Iranian.)

$$[4] \quad \left. \begin{array}{l} *k^w, g^w, g^wh \\ *k, g, gh \end{array} \right\} *k, g, gh > *č, ĵ, ĵh \text{ (before } y \text{ and “front” vowels)}$$

Significantly, palatalization is a process which is naturally triggered by *y* and the front vowels *i* and *e*, while vowels such as *a* and especially *o* do not natu-

4. The fact that the “richer” PIE vowel system (with *e* : *a* : *o*) may itself be speculatively derived from an earlier more restricted system with only one vowel (*e* or *a*, depending on the extent of one’s speculation; see e.g. HOCK 1986/1991 with references) is immaterial for present purposes. Even if these speculations should be on the right track, the comparative Indo-European evidence and the evidence of Indo-Iranian palatalization (see below) establish beyond a doubt that the (late) PIE system underlying Indo-Iranian must have had the richer system of *e* : *a* : *o*.
5. An alternative to the more common form *sanna-*.

rally trigger the change. As a consequence, the fact that the first occurrence of *g^w in example [5a] below has the palatalized outcome *j*, but not the second occurrence (where we find non-palatalized *g* instead) can be given a natural explanation only under the assumption that the first *g^w was originally followed by a front vowel (*e*), while the second one was followed by non-front *o*.⁶ By contrast, if we were to start with the uniform *a*-vocalism of Indo-Iranian, it would be impossible to state any phonetic conditions for the different outcomes, since both palatalized and non-palatalized outcomes occur before *a*-vowels (see [5a] and especially [5b] where both *j* and *g* are followed by Sanskrit short *a*).

- | | | | |
|--------|--------------------------|--|--------------------|
| [5] a. | Proto-Indo-European | * g ^w e-g ^w om-e | 'he, she, it went' |
| | Velar-Labiovelar merger: | * ge-gom-e | |
| | Palatalization: | * ĵe-gom-e | |
| | Vowel merger: | ja-gām-a ⁷ | |
| b. | Proto-Indo-European | * g ^w e-g ^w om-tAe | 'you went (2 sg.)' |
| | Velar-Labiovelar merger: | * ge-gom-tha | |
| | Palatalization: | * ĵe-gom-tha | |
| | Vowel merger: | ja-gan-tha | |

Palatalization, thus, provides significant additional support for the view that Proto-Indo-European had a vowel system with *e*-, *a*-, and *o*-vowels, and that the Sanskrit/Indo-Iranian system with only *a*-vowels must be secondary.

As a consequence, since the end of the 19th century Indo-Europeanists have considered it established beyond doubt that the Sanskrit/Indo-Iranian vowel system must be derived from a "richer" PIE vowel system by the irreversible change in [1], that Sanskrit/Indo-Iranian must therefore be a daughter language of Proto-Indo-European, just like Greek, Latin, and the other Indo-European languages, and that Sanskrit thus cannot possibly be the ancestor of the other Indo-European languages.

MISRA presents a cumulative argument against this view which, to his mind, settles the issue in favor of considering Vedic Sanskrit, or "Old Indo-Aryan", to be the Indo-European ancestor language and of claiming that the (speakers of the) other Indo-European languages migrated out of India.

Part of the argument consists in an attempt to show on linguistic

6. In fact, the evidence of Greek shows that in structures of this type (the so-called reduplicated perfect) the first syllable regularly had an *e*-vowel, and the second an *o*-vowel.
7. The long *ā* of this form is attributable to lengthening by "Brugmann's Law" in open syllable (on which see COLLINGE 1985: 13-21). Note that the two relevant changes, palatalization and merger, had to take place in the order given in [5]. If the changes had taken place in the opposite order, the correct Sanskrit outcome would fail to materialize, since the trigger for palatalization no longer exists by the time palatalization can apply; see [5'].

- | | | | |
|------|---------------------|--|--------|
| [5'] | Proto-Indo-European | * g ^w e-g ^w om-e | 'went' |
| | Merger: | * ga-gām-a | |
| | Palatalization: | ga-gām-a (unchanged) | |

grounds that all other Indo-European languages must be younger than Vedic/Old Indo-Aryan. Underlying this approach is the idiosyncratic notion that if a given language exhibits the results of changes which are found in Prakrit/Middle Indo-Aryan, but not in Sanskrit, then the language must be chronologically at the same level as Prakrit, and therefore younger than Old Indo-Aryan. Thus, MISRA argues that 'Iranian is to some extent like an early MIA' because '(c)onjuncts were assimilated often in Iranian, *sm* > *hm* > *m*, Av *mahi* = Sanskrit *smasi* < Ir. *smasi*' (p. 42). Similarly, he claims that Ancient Greek is at the stage of Prakrit, because 'Greek like MIA drops the final vowel sometimes in vowel *sandhi*, e.g., Gk *stémma't'ekhōn* for *stémmata ekhōn* in Homer's *Iliad*, canto I, compare MIA *gainda* for *gaa inda* (= Sanskrit *gaja* + *indra*)' (90).

MISRA's approach is idiosyncratic first of all because of its implicit assumption that all languages evolve according to the same pattern of development. This assumption clearly is contrary to the insights provided by some 200 years of historical linguistic research and can easily be falsified (see below).

The approach also is idiosyncratic from the empirical perspective. MISRA selectively cites examples in other Indo-European languages with changes which are absent in Vedic but have Prakrit counterparts. He fails to cite examples where the innovation is clearly found in Vedic, not in the other Indo-European languages that he examines. For instance, both Avestan and Greek retain final consonant groups much more faithfully than does Sanskrit, which loses all but the leftmost consonant in the group; see example [6].

[6]	PIE	Avestan.	Greek	(Vedic) Sanskrit	
	*wōk ^w -s	vāx-š	óp-s ⁸	vāk-ø	'speech, voice'

Moreover, while Iranian differs from Vedic Sanskrit by changing *s* to *h* in certain contexts, it manages to preserve the distinction between the PIE palatals and the (labio-)velars that were secondarily palatalized by the change in [4] above. Indo-Aryan, by contrast, loses the distinction in the voiced and voiced aspirated stops; see the examples in [7]. And Nuristani even preserves the stop articulation of the original voiceless palatals, where both Indo-Aryan and Avestan show sibilants instead; see [8]. (On the other hand, the examples also show that Sanskrit preserves the distinction between voiced and voiced aspirated stops, while Iranian and Nuristani lose that distinction.)

[7]	Palatals	Secondarily palatalized (labio-)velars
PIE	*k̑, ġ, ġh	*k ^(w) , g ^(w) , g ^(w) h
PIIr.	*č, ĵ, ĵh	*č, ĵ, ĵh
Skt.	ś, j, h	c, j, h
Avest.	s, z, z	c, j, j

[8] PIE	*deḱm̥	'10'
PIIr.	*daća	
Skt.	daśa	
Avest.	dasa	
Nurist.	duč	

Beside showing that there is no "lock-step" pattern of linguistic change which holds for all languages, these examples also demonstrate that Sanskrit is as liable to undergo change as the other Indo-European languages. MISRA's attempt to show that Sanskrit is systematically more archaic than all other early Indo-European languages, therefore, is not supported by the evidence.

A second line of argument consists in MISRA's casting aspersions on scholars who do not consider (Vedic) Sanskrit to be the ancestor of the other Indo-European languages. Compare the following quote:

The discovery of Sanskrit opened the door of a new discipline [of comparative Indo-European linguistics]. But the ungrateful nature was working in some of the scholars to make immediate efforts to show that the importance of Sanskrit is cowed down ...

JESPERSEN and several others who in their heart of hearts were rather envious of the importance of Sanskrit in Indo-European comparative grammar were happy at the discovery of the law of palatalization which proved that Greek *a, e, o* represents Indo-European original *a, e, o* and Sanskrit *a* which was formerly considered to be the original Indo-European *a* and source for Gk *a, e, o* was in fact itself a product of the merger of Indo-European *a, e, o* into *a*. (88)

MISRA then proceeds to try to cast doubt on the validity of the law of palatals, by claiming that

... there are many exceptions to palatalization ..., e.g., Sanskrit *hataḥ*, Av *jato* < Indo-European *gʷh₂ntos* which has no palatal vowel and the palatalization in such cases has been explained as generalization from forms like Sanskrit *hanti*, Av *janti*. Similarly, there are exceptions in other languages. With a reconsideration of the whole situation it may be said that the exceptions which are also too many might be pointing out the fact that this law was hastily formed to satisfy the anti-Sanskrit inferiority feeling of some scholars. (88)

MISRA is certainly correct in noting that forms like Skt. *hata-* exhibit the outcome of a palatalized labiovelar in a context where we would not expect palatalization. He is also correct in stating that such "exceptional" forms are normally explained as the result of analogical changes which extend the outcome of palatalization to new contexts. However, he is wrong in claiming that therefore the law of palatalization is suspect. As has been known since the 1870s, the time of the neogrammarians, analogy is a potent counterforce to sound change and can affect all languages, at all times. In fact, comparative Indo-Iranian furnishes evidence of the type [9] below, where Vedic Sanskrit analogically eliminates alternations created by palatalization (by extending to the nominative the palatalized *j* of oblique cases such as the instrumental), while Gatha-Avestan still preserves the original alternation (between unpalatalized *g* in the nominative and palatalized *j* in the instrumental).

[9]	PIE	PII _r .	Gath.Avest.	Vedic Sanskrit	
Nom. sg.	*awgos	*awgas	aogō	ojas	'strength'
Instr. sg.	*awge ^s eE	*awjasā	aojanhā	ojasā	

Most significant, whatever the difficulties in detail, Sanskrit and all of Indo-Iranian offer clear evidence of palatalization. The traditional account in terms of the sound change in [4] followed by analogical extensions provides a satisfactory explanation for this fact and is compatible with the empirical evidence. MISRA's approach, by contrast, fails to provide an explanation, either for the forms that exhibit palatalization or for the forms that don't. Under the circumstances, there is no justification for rejecting the "law of palatals" – or for denying or ignoring the fact that, as noted earlier, this sound change requires a prehistoric contrast between the front vowel *e* and the non-front vowels *a* and *o*.

MISRA's major effort is directed at discrediting the traditional view that the Indo-Iranian *a*-vowels resulted from a merger of an earlier PIE triad of *e*-, *a*-, and *o*-vowels. To this end he first makes the following claim:

If we take the number of languages, most of the languages (Sanskrit, Av, OP, Luwian, Palaic, Hieroglyphic Hittite) show *a*. Many languages (the Germanic, the Baltic and Hittite) show *a*, *e*, Slavonic *o*, *e* and a few (Hellenic, Italic) need the reconstruction of *a*, *e*, *o*. One question has never been solved. Why should *a*, *e*, *o* become *a* in Sanskrit? ... In Balto-Slavic there are so many similarities. But Baltic shows *a* < Indo-European *a*, *o* and Slavic shows *o* < Indo-European *a*, *o*. It is easier to explain if both would be derived from Proto-Indo-European *a* only. There are many such problems which need detailed discussion and this is not the proper place for the same. Therefore, law of palatalization should in no way be used as a triumph [sic] card to show that Sanskrit has lost its importance ... (89)

While the linguistic facts alluded to are generally correct,⁹ MISRA's interpretation does not agree with well-established principles and practices of comparative reconstruction. What is important is not the number of languages which exhibit a given phenomenon, but the question whether a particular reconstruction can explain the range of phenomena found in the various languages.

Reconstructing PIE *e*-, *a*-, *o*-vowels makes it possible to account for the vowel correspondences of the Indo-European languages by means of straightforward – and regular – sound changes; moreover, it explains other phenomena which are indirectly linked to the vowel system, such as the Indo-Iranian palatalization (see [4] and [5] above). The fact that many languages or groups of languages have simplified the system through one type of merger or another should be of no consequence. (For instance, the merger of Skt. *tt*, *pt*, *kt* into Pkt. *tt* does not invalidate the well-established fact that Sanskrit had a contrast between *tt*, *pt*, and *kt*.) On the other hand, if we start with a single vowel *a*, then it is not possible to account for the Indo-European correspondences by means of regular sound changes; moreover, such an approach fails to explain phenomena such as the Indo-Iranian process of palatalization.

9. But after velar, *e* (and possibly *ē* as well) merged with *i* in Luwian, not with *a*; see MELCHERT 1985: notes 19, 33, and 36.

Now, MISRA claims to actually have evidence that supports the view that non-Indo-Iranian *e*, *a*, *o* can be accounted for by regular sound changes. This evidence consists in the fact 'that the Gypsy [Romany] dialects of Europe change Indo-Aryan *a* to *e* specially in open syllables. Other Gypsy dialects retain Indo-Aryan *a* as *a*.' (79) In a few words we even find the change of *a* to *o*. Some supporting examples cited by MISRA are given in [10].

[10] a. *a* unchanged in (originally) checked syllable and in monosyllabics:

Skt. aṅguṣṭha- 'finger'	:	Eur. Rom.	aṅguṣṭ
gharma- 'heat'	:		kham 'sun'
na 'not'	:		na

b. *a* > *e* in (originally) open syllable:

Skt. khara- 'donkey'	:	Eur. Rom.	kher
jana- 'person'	:		jeno
daśa 'ten'	:		des

c. *a* > *o*:

Skt. śmaśru- 'beard'	:	Eur. Rom.	šoša 'mustache'
śaśa- 'hare'	:		sosoi

MISRA further points out that European Romany changes the voiced aspirates of Sanskrit into voiceless aspirates, as in the second item under [10a], and he sees in this change a parallel to the fact that 'other historical Indo-European languages' likewise have voiceless aspirates (81). MISRA here evidently is thinking of Greek (cf. Skt. *bhar-* 'carry' : Gk. *pher-*).

On the basis of the combined evidence of the Romany split of Skt. *a* into *e*, *a*, and *o*, and of the Romany devoicing of the voiced aspirates of Sanskrit, MISRA reaches the following conclusion:

Thus, this leads to the assumption that the Gypsy languages show a repetition of the linguistic change, which occurred in a remote history of Indo-European, when the original groups, speakers of various historical languages, left their original homeland (India) and travelled to Europe etc. (82)

Now, as MISRA, admits, examples with *a* > *o* are rare. It is therefore difficult to determine the conditions under which the change took place and, more important, whether we are dealing with a sound change or with some kind of low-level analogical changes.

By contrast, the evidence for the change of *a* > *e* in open syllables (except in monosyllabic words), and for the retention of *a* in other contexts appears to be robust enough to suggest regular sound change. This evidence, therefore, may appear to provide strong support for MISRA's position, and against the traditional view that reconstructing PIE just with *a*-vowels (rather than *e*-, *a*-, *o*-vowels) makes it impossible to provide a regular sound change explanation for the Indo-European vowel correspondences.

However, interesting as the European Romany development may be, it fails to provide a parallel that would justify returning to the view that Vedic Sanskrit is (virtually) identical to Proto-Indo-European.

First, in the case of European Romany it is possible to identify the phonetic condition under which *a* changed to *e* (open syllables in words of more than one syllable); the change therefore is regular. By contrast, the triple contrast *e : a : o* of languages such as Greek and Latin cannot be derived from an original *a*-vocalism by regular sound changes; for it is simply not possible to identify phonetic contexts in which an original *a* would have changed into *e*, *a*, or *o*. For instance, both Skt. *daśa* '10' with *a* in open syllable and *asti* 'is' with *a* in checked syllable correspond to Greek words with *e*, *déka* and *esti* (see [2a] above).

Second, and even more significant, Indo-Iranian palatalization can only be explained if we reconstruct an earlier stage with contrasting *e*- and *a*- or *o*-vowels. As noted earlier, it is this evidence which provides crucial support for reconstructing Proto-Indo-European with a triple contrast *e : a : o* and for assuming that the corresponding single *a*-vocalism of Indo-Iranian results from the merger in [1]. MISRA's attempt to argue for an alternative interpretation falters especially because of his failure to provide a satisfactory explanation of palatalization.

It may be worth noting that there are numerous other arguments that can be raised against MISRA's identification of Vedic Sanskrit or Old Indo-Aryan with Proto-Indo-European. Consider for instance the discussion of examples [6]-[9] above, where in each case even the earliest Sanskrit can be shown to have innovated, rather than having preserved the original Proto-Indo-European or even Proto-Indo-Iranian forms.

These arguments, however, would only provide further support for the conclusion that can be reached merely by critically examining MISRA's arguments: Vedic Sanskrit cannot be identified with Proto-Indo-European.

Rather, Vedic Sanskrit is a daughter language of Proto-Indo-European (and of the intervening Proto-Indo-Iranian), on a par with the other (early) Indo-European languages. Just like these other languages it may preserve highly archaic aspects of the proto-language and simultaneously exhibit highly innovative changes. While MISRA deplors that Sanskrit is no longer considered most archaic and (virtually) identical with Proto-Indo-European, linguists can learn as much from its innovative changes as they can from its archaic aspects.

How cogent is an alternative "PIE-in-India" hypothesis?

A priori, there is a possible alternative to MISRA's failed attempt to identify Vedic Sanskrit with Proto-Indo-European and in so doing to establish that the Indo-Aryans did not migrate to India from the outside. This alternative would consist in claiming that Proto-Indo-European – as usually reconstructed and thus distinct from Vedic Sanskrit – was originally spoken in India, that the speakers of Indo-Aryan remained in India, and that the speakers of all other Indo-European languages migrated out of India. (Something close to this hypothesis is mooted in FEUERSTEIN, KAK & FRAWLEY 1995: 155, but without supporting arguments.)

The hypothesis might be considered to be supported by the fact that Indo-Europeanists have not been able to agree on an area that might be identified as the original home of Proto-Indo-European.^{10,11} A priori it might well be argued that given this lack of agreement, any area is as good a candidate for being the original home as any other – so why not India?

Moreover, the outward migration of the Romany is not the only known instance of speakers of Indo-Aryan languages moving north and out of India. As noted in HOCK 1996 (with references), both Gandhari Prakrit (in medieval Khotan and farther east), and Parya (in modern Uzbekistan) have been transplanted out of India through migration; and Dumaki (close to present-day Shina) has moved to the outer northwestern edge of South Asia. In principle, then, there would be even more precedent for outward migration than argued for by MISRA (who only considered Romany).

The “PIE-in-India” hypothesis is not as easily refuted as the “Sanskrit-origin” hypothesis, since it is not based on “hard-core” linguistic evidence, such as sound changes, which can be subjected to critical and definitive analysis. Its cogency can be assessed only in terms of circumstantial arguments, especially arguments based on plausibility and simplicity.

Right at the outset, however, it should be noted that the two preceding arguments in favor of “PIE in India” are not sufficient to prove the hypothesis – at best, they merely suggest that there are no obstacles to the hypothesis.

In fact, however, the “PIE-in-India” hypothesis encounters severe difficulties.

One of these concerns the “equine argument” – the issue of the domesticated horse and, even more important, the cultural and religious significance of the horse in early Indo-European society, as well as its connection with the two-wheeled battle chariot. To be sure, there has been some controversy over whether the introduction of domesticated horses (and of horse-drawn battle chariots) preceded or followed the separation of the Anatolians from the rest of the Indo-Europeans (see HOCK & JOSEPH 1996: 514–515 with discussion and references¹²). However, this controversy is irrelevant for present purposes, since Vedic Sanskrit and all of Indo-Iranian belong to the Indo-European languages with clear evidence for the domesticated horse, as well as for the horse-drawn two-wheeled battle chariot.

While disagreeing on minor details, those familiar with Indo-European linguistic paleontology and with the archeological evidence in Eurasia agree that the use of the domesticated horse spread out of the steppes of the Ukraine, and so did the horse-drawn two-wheeled battle chariot, as

10. For a recent discussion with references to literature see HOCK & JOSEPH 1996: 516–523.

11. MISRA, in fact, employs this argument in favor of his “Sanskrit-original” hypothesis (p. 100).

12. On rereading MELCHERT 1985 I am now even more convinced than before that Anatolian offers no cogent evidence against the assumption that the introduction of domesticated horses preceded the separation of the Anatolians.

well as the great significance of the horse in early Indo-European culture and religion. Indo-Europeanists and specialists in general Eurasian archeology are therefore convinced, too, that these features spread into India along with the migration of Indo-Aryan speakers. (See for instance RATNAGAR's and PARPOLA's contributions to this volume.)

Those who advocate the "Out-of-India" view try to counter this perspective by claiming that there is evidence for horses in Harappan India and even earlier. For instance, MISRA argues that '... the evidence of horse in the form of terracotta figures or equine bones have proved that there is a greater possibility for considering the Indus Valley civilization to be Aryan' (58).

The question whether the archeological evidence supports the view that domesticated horses were a feature of the Harappan civilization is still being debated; see the summary of arguments in CHENGAPPA 1998. Significantly, however, to my knowledge no archeological evidence from Harappan India has been presented that would indicate anything comparable to the cultural and religious significance of the horse or the important role of the horse-drawn two-wheeled battle chariot which can be observed in the traditions of the early Indo-European peoples, including the Vedic āryas.

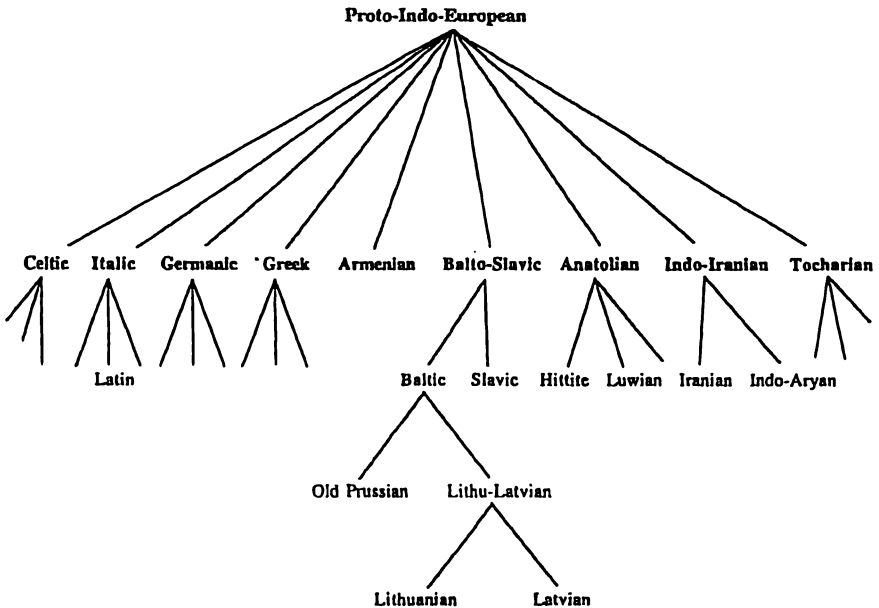
On balance, then, the "equine" evidence at this point is more compatible with migration into India than with outward migration.

There are also certain linguistic problems with the claim that the non-Indo-Aryan Indo-Europeans moved out of India. To support this claim it would be necessary to establish a scenario of migrations that would account for the dialectological relationships between the early Indo-European languages. As is well-known, these relationships cannot be fully accounted for in terms of a family tree diagram along the lines of Figure 1, with different sub-families and sub-sub-families neatly differentiated from the other (sub-) sub-families by features that can only be explained in terms of periods of exclusively shared common linguistic history. Rather, there are both chronological and geographical factors which make such a tree diagram unrealistic.

First some chronological issues: As has been known for a long time, a large amount of linguistic evidence indicates that the Anatolian languages (Hittite, Luwian, etc.) separated earliest from the rest of the Indo-European languages. Further, recent arguments make it highly plausible that the Tocharian languages were next in line to separate (see WINTER 1997).

As is also well known, the early Indo-European languages exhibit linguistic alignments which cannot be captured by a tree diagram, but which require a dialectological approach that maps out a set of intersecting "isoglosses" which define areas with shared features, along the lines of Figure 2. While there may be disagreements on some of the details, Indo-Europeanists agree that these relationships reflect a stage at which the different Indo-European languages were still just dialects of the ancestral language and as such interacted with each other in the same way as the dialects of modern languages. See for instance HOCK 1986/1991: 450-455 for discussion and references.

Figure 1: A tree-diagram view of Indo-European



The features that define the different isoglosses in Figure 2 can be briefly summarized as follows. (For more details on many of these features see HOCK 1986/1991: 450-455.)

A group of dialects, including Greek, Armenian, and Indo-Iranian share the feature of the “preterital augment”, as in Gk. *é-pher-e* : Skt. *a-bhar-a-t* ‘he, she, it carried’.

A different group of dialects, consisting of Germanic, Baltic, and Slavic shares at least two innovations. One of these consists in the fact that the *bh* of the “*bh*-cases” of (most of) the other Indo-European languages (as in Skt. *mati-bhis* ‘with thoughts’) has been replaced by *m* (as in Old Church Slavic *gostĭ-mi* ‘with guests’).¹³ The second feature is the merger of PIE *a* and *o* (to *o* in Slavic, *a* in Baltic and Germanic), as in Goth. *akrs* ‘field’, *ahtau* ‘eight’ from PIE **aǵros*, **oktō(u)*.

The same group of dialects also has merged the genitive and ablative cases into a single “genitive” case. But within the group, Germanic and Old Prussian agree on generalizing the old genitive form (as in Goth. *wulfis* ‘of a wolf’ < **włkʷe-s(y)o* [genitive]), while Lithu-Latvian and Slavic favor the old Ablative (as in Lith. *vilko* ‘of a wolf’ < *włkʷe-Ad* [ablative]).¹⁴

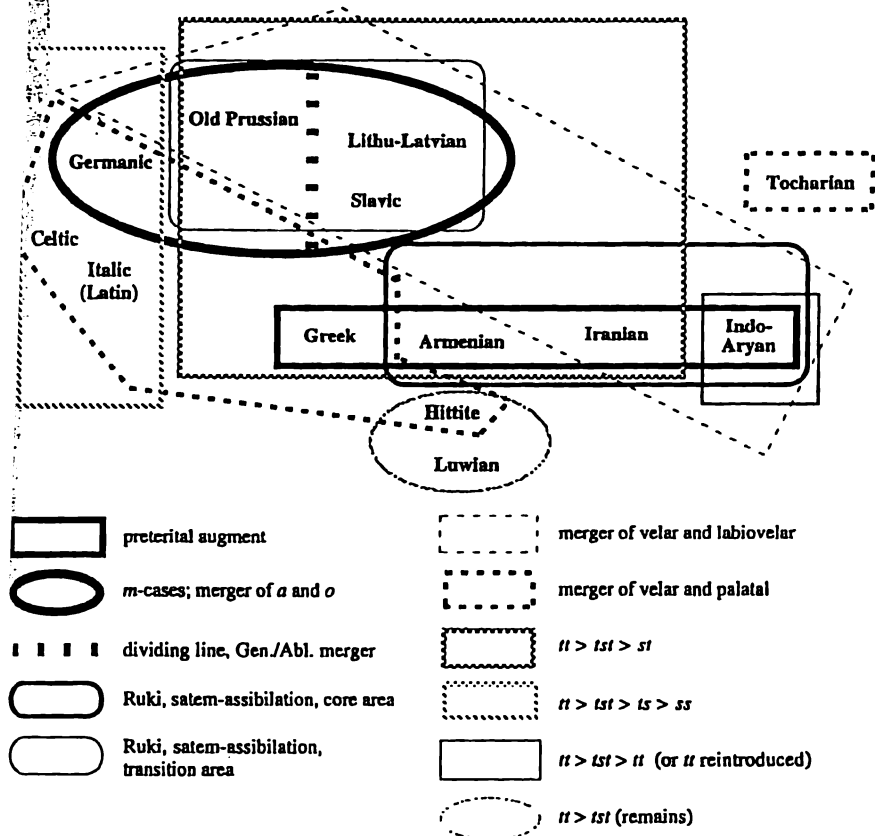
A major phonological development is the “satem-assibilation”, a change of PIE palatals to assibilated stops which themselves may become sibilants (see [8] above for some examples). The core area for this change

13. See also the discussion in HOCK 1986/1991: 585-586, 590-591.

14. For some complications in Slavic see HOCK 1986/1991: 454.

cludes Indo-Iranian and Armenian, while Baltic and Slavic form a transition into which the change has diffused only incompletely. Roughly the same distribution is found for another change, whereby *s* changed to *š* etc. after "tiki", a group of sounds which includes *r*, *u*, *k*, and *i* (as in PIE **dwis-* > *wiš-* > Skt. *dviṣ-* 'hate').

Figure 2: A dialectological view of Indo-European



Other dialectal areas are defined by the fate of the three "velar" (or "tectal") series of Indo-European. In many of the "satem" languages the labiovelars merge with the plain velars (see [4] and [5] above); a few of these languages however, including Armenian, seem to have retained some distinctions. In other languages, including Hittite (but not Luwian), Greek, Italic, Celtic, and Germanic, as well as Tocharian, the velars and palatals merge instead.

Finally, there is a set of isoglosses regarding the fate of PIE **tt* which changed to **tst* even in Proto-Indo-European times. In some languages (Germanic, Celtic, Italic) the ultimate outcome is *ss*; in others (Baltic, Slavic, Greek, Armenian, Iranian) it is *st*; in Indo-Aryan it is *tt*, either by regular

sound change or through some kind of analogical reintroduction;¹⁵ and in Anatolian (or at least in Hittite) it remains as *tst*.

What is interesting, and significant for present purposes, is the close correspondence between the dialectological arrangement in Figure 2 (based on the evidence of shared innovations) and the actual geographical arrangement of the Indo-European languages in their earliest attested stages. (One possible exception is Tocharian, for which it is difficult to find uncontroversial evidence for dialectal affiliation; see also RINGE 1991.¹⁶) True, the dialectological arrangement is relative and could a priori be turned around or flipped in many different directions. However, the relative positions of the dialects can be mapped straightforwardly into the actual geographical arrangement if we assume that there have been no major realignments and that the relative positions were generally maintained as the languages fanned out over larger territory. Any other original arrangement of the dialect map of Proto-Indo-European would require the assumption of a major realignment in later times, which curiously would leave the relative position of the dialects unchanged. A hypothesis which would postulate such an alternative scenario would have to be justified by compelling empirical evidence; but such evidence does not seem to exist at this point.

If the relationship between the Indo-European languages were of the kind modeled in Figure 1, the hypothesis of a migration of the non-Indo-Aryan languages out of India would be relatively easy to maintain. All we would have to assume is that the different sub-families of Indo-European moved out, one after the other, in whatever order may be suggested by other evidence (such as the noted archaism of Anatolian and Tocharian).

Even under this perspective, however, it would be considerably simpler to envisage only one migration into India (of Indo-Aryan) than a whole series of migrations out of India (of all the other languages). Moreover, the archeological lack of evidence for inward migration often cited by proponents of the "Out-of-India" hypothesis would have to be balanced with the lack of archeological evidence for the presumably much more massive and prolonged outward migration required under this hypothesis.

The complex dialectological relationships modeled in Figure 2 significantly increase these difficulties and make an inward migration by far the simpler and more plausible scenario.

To be able to account for these dialectological relationships, the "Out-of-India" approach would have to assume, first, that these relationships reflect a stage of dialectal diversity in a Proto-Indo-European ancestor language located **within India**.

While this assumption is not in itself improbable, it has consequences which, to put it mildly, border on the improbable and certainly would violate basic principles of simplicity. What would have to be assumed is that the

15. See MAYRHOFER 1985: 110-111 vs. SZEMERÉNYI 1989: 109.

16. SCHMIDT's arguments (1997) for a close prehistoric affiliation of Celtic to the satem-languages require a fuller critical examination.

various Indo-European languages moved out of India in such a manner that they maintained their relative position to each other during and after the migration. However, given the bottle-neck nature of the route(s) out of India, it would be immensely difficult to do so. Rather, one would expect either sequential movement of different groups, with loss of dialectological alignment, or merger and amalgamation of the groups, with loss of dialectal distinctiveness. Alternatively, one would have to assume that after moving out of India, the non-Indo-Aryan speakers of Indo-European languages realigned in a pattern that was substantially the same as their dialectological alignment prior to migration – a scenario which at best is unnecessarily complex and, at worst, unbelievable.

The "PIE-in-India" hypothesis thus runs into severe difficulties as regards plausibility and simplicity.

By contrast, there is no problem if we accept the view that Proto-Indo-European was spoken somewhere within a vast area 'from East Central Europe to Eastern Russia' (HOCK & JOSEPH 1996: 523). As suggested earlier, all we need to assume is that the Indo-European languages by and large maintained their relative positions to each other as they fanned out from the homeland.

In that case, however, the speakers of Indo-Aryan must have migrated out of an original Eurasian homeland and into India.

Conclusions

Neither the "Sanskrit-origin" variant nor the "PIE-in-India" variant, thus, turns out to provide credible support for the "Out-of-India" hypothesis. Rather, the linguistic evidence still favors the prevailing Indo-Europeanist perspective that the speakers of Indo-Aryan migrated into India.

It is important to note that this conclusion holds in spite of the fact that the controversy over the precise position of the Indo-European homeland within the 'vast area from East central Europe to Eastern Russia' has not been settled and may, in fact, never be settled. Moreover, it holds in spite of the fact that archeologists have not been able to find any skeletal evidence for Indo-Aryan migration into India. On this latter count, note that there is similar lack of skeletal evidence for later, historically attested migrations into India, or for outmigrations from India (whether historically verified, as in the case of Romany, or merely postulated, as under the "Out-of-India" view). Perhaps future archeological work will make it possible to narrow the gap between the linguistic and the skeletal (and cultural) evidence, but perhaps this, too, is an issue which may never be settled.

yô asyādhyakṣaḥ parāme vyòman-t-só aṅgá veda yádi vā na véda
(RV 10.129.7cd)

'Who is the overseer of this (world) in highest heaven, he knows – unless he does not know.'

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