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Edited by William G. Boltz
and Michael C. Shapiro

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DIALECTS, DIGLOSSIA, AND DIACHRONIC PHONOLOGY IN EARLY INDO-ARYAN

HANS HENRICH HOCK

University of Illinois at Urbana-Champaign

1. **Introduction.** Most discussions of early Indo-Aryan, and especially Sanskrit, diachronic phonology sooner or later invoke dialectal differences to account for certain changes that are considered to be otherwise difficult, if not impossible, to explain. In Sanskrit the most notorious of these changes is the development of a contrast between dental and retroflex consonants, which will feature prominently in the present discussion. Some of these developments may be attributed to contact with other languages, but will be ignored in the present paper. For recent discussions, see Emeneau 1980, Hock 1975, 1984.

While in many Indo-European languages such dialectological arguments are fairly straightforward, in early Indo-Aryan they are not: First of all, some scholars (such as Mansion 1931 and Renou 1957 [note 80]) would like to deny that the early Sanskrit developments that are often considered dialectal must be attributed to fully differentiated dialects. Secondly, linguists claiming dialectal influence on early Sanskrit do not necessarily agree as to whether we are dealing with geographical or social dialect differences. More commonly, reference is made to social dialect differences, i.e., between a highly standardized and conservative Sanskrit and the more vernacular and innovative Prakrits; e.g., Edgerton's (1930) and Emeneau's (1966) papers on dialects in Old Indo-Aryan. It is convenient to refer to this kind of social differentiation as DIGLOSSIC, thus distinguishing it from geographically defined, DIALECTAL differences, although for early Indo-Aryan the term may not be entirely appropriate. Some scholars, on the other hand, may posit geographical dialect differences instead of, or in addition to, the diglossic ones; e.g., Fortunatov 1881, and Chatterji 1960. Another, partly related argument is that a shift in the geographic basis of Sanskrit accounts for many changes in the history of the language; e.g., Zimmer 1879. Finally, it has been argued that many of the developments claimed to exhibit dialectal or diglossic influence on early Sanskrit should instead be viewed as something like corruptions in the oral transmission of the early Sanskrit texts. These are said to reflect features in the native dialect of the persons

in charge of the oral transmission, features that differ from the early Sanskrit norm and come closer to the later Prakrit norms. See Deshpande 1978 for the most recent discussion.

In this paper I attempt to provide a critical review of these different hypotheses by: (i) determining the extent to which the arguments decided in their favor can be considered established; and (ii) examining whether the phonological changes for which they have been invoked require the assumption of one or another of these views. Moreover, I will investigate to what extent dialectological or diglossic differences can help explain developments for which they have not so far been invoked. In the process I will draw on pertinent textual passages, the evidence of ancient Indian phonetic treatises, the dialect-geographical data provided by the Aśokan inscriptions, as well as the evidence of phonological change within Indo-Aryan, especially Sanskrit.

2. Textual passages. Let me begin with the testimony in early Sanskrit texts that has been invoked as evidence for dialectal differences.

2.1. A famous and often-quoted passage from the Kauṣītaki-Brāhmaṇa appears to establish that "northern [or northwestern] speech" was considered especially prestigious and correct; see numbers (1) and (2) below. Taken by themselves, these statements might not be considered particularly enlightening. In conjunction with other evidence they can be interpreted as indicating that the Sanskrit of this area was especially conservative. Thus it has been noted that the northwestern versions of the Mahābhārata and the Pāṇcatantra are considerably more conservative than the more eastern and southern versions; and that the northwestern dialects and languages of Middle and Modern Indo-Aryan preserve features of Old Indo-Aryan more faithfully than their more eastern or southern counterparts. For a good summary, see Renou 1956: 10, 103.

(1) *tasmād udīcyāṃ dīśi prajñātatarā vāg udyata (|)
udañca u eva yanti vācam śikṣitum (|) yo vā tata āgac-
chati tasya vā śuśrūṣante. . . eṣa hi vāco dik prajñātā*

'In the northern region, speech is spoken particularly distinct(ly). People go to the north to learn speech. Or if someone comes from there, they like to hear/learn from him. For this is known as the region of speech.'
(Kauṣītaki Brāhmaṇa 7.6)

(2) *údīcīm evá dīśam (|) pathyāyā svastyā prājānamś (|)
tasmād átrottaráhi vāg vadati kurupañcālatrá (|) vāg ghy*

èṣā nidānena

'Through Pathyā Svasti they recognized the northern quarter/region. Therefore there speech speaks northwards/better, among the Kuru-Pañcālas. For she is really speech.' (Śatapatha-Brāhmaṇa 3.2.3.15)

2.2. This description of "northern" speech has been contrasted with the speech of the easterners, as it is said to be characterized in the passages cited in (3) and (4). Cf. especially Chatterji 1960.

(3) *té'surā āttavacaso he'lávo he'láva iti vādantaḥ pārababhūvuh* (|) *tátrainām ápi vācam ūduḥ* (|) *upajijñāsyāñ* (|) *sá mléchas* (|) *tásmān ná brāhmaṇó mleched* (|) *asuryā haiṣā vāg*

'The asuras, deprived of (proper) speech, saying *he'lavo he'lavaḥ* [instead of the correct *he'rayo he'rayaḥ*] were defeated. At that time they spoke that speech, (which was) unintelligible. That is a barbarism. Therefore a brahmin should not speak like a barbarian. That speech is of the asuras.' (Śatapatha-Brāhmaṇa 3.2.1.23-4)

(4) *aduruktavākyāñ duruktam āhur...adīkṣitā dīkṣitavācam vadanti*

'Speech which is not difficult they consider difficult ...even though they are not consecrated, they speak the language of the consecrated' (Pañcaviñśa- Brāhmaṇa 17.9)

Again, these citations require interpretation and supporting evidence to become intelligible:

In the passage cited in (3), one of the asuras' mistakes lay in pronouncing an *l* where they should have used *r*. This use of *l* is characteristic of eastern or "Magadhan" speech in later Indo-Aryan. Moreover, there is independent evidence that this *l*-variety of Indo-Aryan, as well as the people from Magadha held a relatively low prestige. Thus the word *kalma-*, an *l*-variety of *karma-* 'action, deed', has the negative meaning 'ill-begotten deed'. The word *pumścalī* 'whore (who runs after men)', which is derived from *pum(an)s-* 'man' and the root *car-/cal-* 'move, run', significantly is attested only with *l*. (For further discussion and references, see Hock and Pandharipande 1976: 127.) And the *vidūṣaka*, the fool of Sanskrit drama, who although being a brahmin, cannot converse in Sanskrit, speaks a (stage) variety of Magadhi. In addition there is further textual

evidence in early Sanskrit which supports an equation of the asuras with the easterners and a view of Magadhans as being associated with inferior people; cf. (5) and (6). Interestingly, the latter passage contains a variant of the word *pumścalī*.

(5) *tásmād yā daivyaḥ prajāś cātuḥsraktini tāḥ śma-
sānāni kurvaté 'tha yā āsuryāḥ prācyās tvad yé tvat
parimaṇḍalāni té*

'Therefore those people who are godly make their burial grounds four-cornered, but those who are of the asuras, either the easterners or whoever, (make them) round.' (Śatapatha-Brāhmaṇa 13.8.1.5)

(6) *māgadhān ca pumścalūn ca dakṣiṇe vedyante
mīthunīkārāyanti*

'They make a Magadhan and a whore copulate to the south of the altar' (Jaiminīya-Brāhmaṇa 2.404)

The dialectological interpretation of the passage in (3), thus, can be considered fairly well established.

The situation is less certain for the passage cited in (4): It comes from a description of the "vrātya" rite and appears to indicate that the vrātyas did not speak proper Sanskrit. In fact, Chatterji interprets the term "difficult speech" to refer to the complex consonant clusters of Sanskrit which in the Prakrits are simplified (such as in example (7)). Underlying Chatterji's interpretation is the assumption that the vrātyas were easterners and that eastern speech exhibited the Prakritic process of cluster simplification at a much earlier time than did the more western varieties of Old Indo-Aryan.

(7) Skt. *sapta* > MIAr. *satta* 'seven'

Given these assumptions, the passage appears to provide excellent and even more concrete evidence for early dialectal differentiation. However, Chatterji's interpretation lacks cogency for several reasons: First, the identity (social, geographical, or ethnical) of the vrātyas is still a matter of controversy. Secondly, and more specifically relevant, a fuller version of the passage in (4) is as in (4') below. While the exact significance of the additional textual material is not entirely clear, it suggests that the complete passage may not so much refer to linguistic features of the vrātyas' speech, as to certain ritually incorrect actions and to the function of speech in that context. This interpretation is reflected in the gloss of (4'). It is further supported by the parallel passage of the Jaiminīya-Brāhmaṇa, given in (8), which states that the vrātyas use speech for ritually impure purposes.

(4') *garagiro vā ete ye brahmādyam̄ janyam annam adanty* (|) *aduruktavākyaṃ duruktam āhur* (|) *adaṇḍyam̄ daṇḍena ghnantaś caranty* (|) *adīkṣitā dīkṣitavācam̄ vadanti*

'They who eat foreign food (?) as brahmin food are eaters of poison. Speech that is not badly spoken they consider badly spoken. They go around punishing/keep punishing who is not to be punished. Even though they are not consecrated, they (dare to) speak the language of the consecrated' (Pañcaviṃśa-Brāhmaṇa 17.9)

(8) *vācā hy avratam amedhyaṃ vadanti*

'By means of speech they speak something not in accordance with religious duties, something ritually impure' (Jaiminīya-Brāhmaṇa 2.222)

2.3. The passage in (4) thus must be considered of dubious relevance, and we are left with two very general statements to the effect that northern (or northwestern) speech is purer or more conservative, and a passage suggesting that the use of *l*-forms, an eastern or Magadhan feature, is considered barbaric. The textual evidence for geographical dialect differentiation thus is quite meager.

On the other hand, given the contexts in which the passages in (1), (2), and (3) are embedded, as well as the general tradition to which they belong, the social element of "purity" vs. "corruption" appears to be much more relevant than geographical considerations. Note that even the passages in (4/4') and (8) can be considered to be concerned with linguistic—and ritual—purity. In fact, the concern for linguistic and ritual purity can be traced back as far as Rig-Vedic times; cf. Hock and Pandharipande 1976 with references. Given this background, then, the problem of barbaric speech addressed in (3) may be considered at least as much one of diglossia (between a conservative standard and a vernacular standard) as one of dialectal differentiation.

3. The evidence of the phonetic treatises. More concrete evidence for some kind of dialectal diversification can perhaps be gleaned from the phonetic treatises that were developed to assure proper recitation of the Vedic texts, namely the Prātiśākhya.¹

¹ For modern summaries and interpretations of these texts, see Whitney 1862, 1863, Varma 1929, Allen 1953, and Mishra 1972. The last-mentioned

In the following, I will limit myself to a discussion of what is important for the subsequent discussion. Note from the outset, however, that here too we need to resort to a fair amount of interpretation in order to understand the import of the statements made in these treatises.

First of all, it is important to keep in mind that except for the Pāṇinīya-Śikṣā, these treatises attempt to describe (or prescribe) the correct pronunciation for particular branches (śākhās) of the Veda. To the extent that they offer varying accounts for particular segments, these variations therefore refer to differences in the recitation of different Vedic traditions or SCHOOLS. They do not necessarily refer to geographical differences, although it is possible that the starting point for the different traditions of recitation lay in geographically distinct variants of Sanskrit. Still, whether the variations are attributed to geographical dialects, to geographically based differences between Vedic schools, or to some other factors, there is no reason against accepting them as genuine phonetic differences across different varieties of Sanskrit.

3.1. There is a considerable amount of variation or disagreement between the different Prātiśākhyaś as far as the phonetic characterization of the dentals, *r*, and the retroflex consonants is concerned. The different characterizations are summarized in Table I, which also gives a key to the abbreviations used in this section.

The description in VP, AP, and TP of the retroflex consonants as being articulated with the tongue curled back is interesting mainly for its fine phonetic observation. There is no compelling reason for assuming a different articulation for the domains in the other Vedic branches or for the language described by the Pāṇinīya-Śikṣā.

For the dentals, however, there is an interesting difference: While most of the Prātiśākhyaś, as well as the Pāṇinīya-Śikṣā, describe them as articulated against the teeth, two texts (RP and TP) characterize them as being produced at the root of the teeth (*dantamūla*), suggesting a slightly more retracted pronunciation. Variation of this sort is entirely credible and has parallels in the varying pronunciation of "retroflex" stops as alveolars or strongly retracted segments in different varieties of Modern Hindi-Urdu. (The alveolar articulation seems to be especially favored by Muslims).

of these books, in its first part, extensively repeats Varma 1929 (generally without attribution); the second part appears to contain more original material.

	RP	VP	AP	TP	RT	PS
Retroflex domal	domal	domal	domal	domal	domal	domal
		with tongue curled back	with tongue curled back	with tongue curled back		
Dental	tooth-root	dental	dental	tooth-root	dental	dental
r	tooth-root/ alveolar	tooth-root	tooth-root	behind teeth	dental/ tooth-root	domal
l	tooth-root	dental	dental	tooth-root behind teeth	tooth-root	dental
r	velar	velar	partly [r]	alveolar	velar	domal
	partly [r]	[^a r ^a]				
l	velar	dental	partly [l]	alveolar		dental

(Abbreviations: RP = Rik-Prāṭisākhya; VP = Vājasaneyi-Prāṭisākhya, AP = Atharva-Prāṭisākhya; TP = Taittirīya-Prāṭisākhya; RT = Rik-Tantra; PŚ = Pāṇinīya-Sikṣā. The term “domal” translates the Sanskrit *murdhanya*- ‘located at the dome or roof of the mouth’.)

Table I: Dentals and retroflexes in phonetic treatises

3.2. Also for the liquids *r* and *l*, we find varying descriptions. The general pattern is as follows: *l* almost invariably is described in the same way as are the dental stops, and it is almost always characterized as more dental than *r*. (The only exception is TP.) And *r* is usually described in the Prātiśākhya as farther back than the dental stops, but not as far back as the retroflex stops. RP and RT, to be sure, offer this postdental articulation only as an option. However, given that an *r* is difficult, if not impossible to articulate against the teeth (or even against the base of the teeth), one suspects that what is offered as an option actually is the phonetically more accurate account.

An apical postdental articulation, i.e., farther back than the normal articulation for the dentals (whether that is fully dental or "tooth-root") is further suggested by the fact that, like postdental retroflex *ṣ*, *r* has triggered a change of *n* to *ṇ* under certain conditions; cf. the formulation and examples in (9). The synchronic alternations left behind by this *n*-retroflexion had to be accounted for by Pāṇini's grammar. And it is no doubt in this synchronic phonological context that the generalization that postdental/alveolar *r* and postdental/retroflex *ṣ*—both apical—trigger *n*-retroflexion was captured by labeling both segments as retroflex (or "dental"). This PHONOLOGICAL, rather than phonetic, characterization then must be considered to have entered the Pāṇiniya-Śikṣā, the phonetic treatise of the Pāṇinians. (See also Hock 1979, 1984, To Appear.)

Some scholars, such as Varma (1929: 53), to be sure, prefer to see in the retroflex characterization of *r* further evidence for dialectal diversification. But this interpretation is unnecessary and dubious as well, given that no attested varieties of Indo-Aryan offer any direct phonetic evidence for a retroflex articulation of *r*.

$$(9) \quad n > \mathfrak{n} / \left\{ \begin{array}{c} r \\ \mathfrak{s} \end{array} \right\} (V) \left(\left\{ \begin{array}{c} C, +grave \\ y, v, h \end{array} \right\} \right) (V) \text{ — ...}$$

<i>varna-</i>	> <i>varṇa-</i>	'color, variety, etc.'
<i>viṣṇu-</i>	> <i>viṣṇu-</i>	'Vishnu'
<i>krpāna-</i>	> <i>krpāṇa-</i>	'lamenting'
<i>coṣkūyamāna-</i>	> <i>coṣkūyamāṇa-</i>	'tearing'

3.3. Summarizing our findings up to this point as in Table II, we can see that there are two varieties of Vedic recitation whose relationship to each other is such that the dentals of one variety are articulated roughly in the same position as the postdental *r* of the other variety. As a consequence, the cut-off point between dental and postdental (indicated by ||) differs

between the two traditions. Assuming that these differences rest on some kind of genuine dialectal distinction in Vedic Sanskrit (whatever the original geographical or social basis), we can draw on them in our later discussion to propose a possible new explanation for certain phonological developments which have again and again intrigued historical linguists and led them to postulate a large variety of different explanations.

	<u>Dental</u>	<u>Tooth-root</u>	<u>Alveolar</u>	<u>Domal</u>
RP/TP		"dentals'	r	"retroflexes"
Others	"dentals'	r		"retroflexes"

Table II: Places of articulation for dentals, retroflexes, and [r] in Vedic recitation (Summary)

3.4. What is more problematic is the interpretation of the statements concerning syllabic *r* and *l*. The fact that certain Prāṭisākhya refer to one of both of them as velar has given rise to a number of different interpretations; cf. e.g., the discussion in Whitney 1862, 1868, Varma 1929, Allen 1953, Mishra 1972. I believe Cardona (personal communication, 1980) is correct in resolving the issue by arguing that "velar" here refers to the fact that, at least in some traditions of Vedic recitation, these segments were pronounced as in (10a); cf. e.g., the characterization of syllabic *r* in VP, as well as the fact that in Avestan, a closely related ancient Iranian language, the counterparts of those segments are commonly written as in (10b). (Avestan lacks forms with *l*.)

Support for this analysis may be seen in the fact that in the grammars of post-Vedic Sanskrit, [a] is classified as a velar. For the Prāṭisākhya, to be sure, there is the difficulty that *a* seems to be classified as glottal (together with *h* [ɦ] and visarga [h]), rather than velar. Still, given that one of the treatises that classify syllabic *r* as a velar also characterizes it as mixed with *a* and that the other (as well as AP) makes a statement eminently compatible with that description, the analysis in (10a) appears to be preferable to such alternatives as postulating for certain branches of the Veda a velar—or rather, uvular—syllabic *R* and a velarized syllabic *l*. For while the change of alveolar *r* to uvular *R* is not at all uncommon in the world's languages, I know of no case in which it has been confined to syllabic *r*. Similarly, the change of dental or "clear" *l* to velarized or "dark" *l̥* is quite common, but again, I am not aware of it ever being restricted to syllabic *l*. Moreover, the fact that syllabic *r* serves just as much as a trigger for *n*-retroflexion as non-syllabic *r* (cf. the third example in (9)) would be accounted for more easily by assuming that its *r*-element has the

same apical and postdental articulation as non-syllabic *r*. This issue is taken up in greater detail in Hock 1987. (The fact that syllabic *r* triggers *n*-retroflexion is of course responsible for its classification as retroflex in the Pāṇinīya-Śikṣā.)

- (10) (a) VP [^ar^a], [a^la]
 (b) Avestan [ʔr^ʔ]

3.5. Two further observations of the ancient Indian phonetic treatises will be important for our discussion. One concerns the articulation of intervocalic voiced retroflex stops; the other addresses the issue of "gemination."

3.6. The Rik-Prātiśākhya, following the established text of the Rig-Veda and the Brāhmaṇas belonging to it, teaches that the voiced retroflex stops are articulated as retroflex laterals *ḷ*, *ḷh* in intervocalic position. This pronunciation receives support from a commentary on AP and an optional rule of the VP, to the extent that for intervocalic *ḍ*, *ḍh* one must avoid "heavy contact," that instead they are to be articulated with a "gentle effort."

3.7. All the Prātiśākhyas agree on prescribing gemination of consonants in certain contexts. And as Varma (1929, Chapters 2 and 5) has pointed out, examples of such gemination are found in certain manuscripts; cf., e.g., (11).

- (11) (a) yukktāḥ = yuktāḥ 'yoked ones'
 (b) dakṣāyāḥ = dakṣāyāḥ 'of the active one'
 (c) addya = adya 'today'
 (d) puttra- = putra- 'son'
 (e) ghanasppati- = ghanaspati- [read *vanaspati*- 'tree?']
 (f) asmmīn = asmin 'in that one'
 (g) dīrgha- = dīrgha- 'long'

What the Prātiśākhyas do not entirely agree on are the specific contexts in which gemination takes place. Thus, AP prescribes it for final consonants, but none of the other Prātiśākhyas adhere to this view. AP, VP, and TP exclude gemination before homorganic consonants; RP has no such restriction. And so on. What remains are some general tendencies. The most widely accepted case of gemination is that of consonants before or after *r*. But even here, AP, TP, and Pāṇini agree on ruling out gemination of sibilants after *r*, and RP proscribes any sibilant gemination.

3.8. These geminations are of interest to linguists working of the historical phonology of early Indo-Aryan in so far as they have been claimed to be

the antecedents of Prakrit developments of the type illustrated in (7). (This example is repeated here for convenience.)

(7) Skt. *sapta* > MIAr. *satta* 'seven'

While according to a traditional view, espoused for instance by Mayrhofer (1951) and Hock (1986a), changes of this sort are to be attributed to large-scale assimilations, Varma (1929) and following him, Murray (1982) have argued that they reflect earlier geminated clusters, as in (12). This view requires the assumption that the triggering environment dropped out in Prakrit, presumably through cluster simplification.²

(12)	Original	Geminated	Prakrit
(b)	<i>dakṣa-</i>	<i>dakkṣa-</i>	<i>dakkha-</i>
(c)	<i>adya</i>	<i>addyā</i>	<i>ajja</i>
(d)	<i>putra-</i>	<i>puttrā-</i>	<i>putta-</i>
(e)	<i>ghanaspati-</i>	<i>ghanasppati-</i>	<i>ghanapphati</i>
(f)	<i>asmin</i>	<i>asmmīn</i>	<i>ammi</i>
(g)	<i>dīrgha-</i>	<i>dīrggha-</i>	<i>diggha-</i>

While certainly attractive, this "geminatory" explanation of the Prakrit developments of Old Indo-Aryan clusters suffers from a number of weaknesses.

One is the appearance of aspiration in the Prakrit outcomes of (12b) and (e). Murray (1982: note 13) admits that the development on these examples is "problematic," but the solution that he proposes is rather opaque. One of the processes it seems to require is a regular, but unmotivated metathesis of the sibilant with the following (geminated) stop for examples like (12e).

I have argued elsewhere (1985), that the development in (12e) should be considered in conjunction with the USUAL Prakrit development of clusters of the type (12f), a development which is not as indicated in example (12f) but rather as in (12'f). What we find here is that *s* has

² The data in (12) are subcategorized by environment in the same manner as (11), with (b)–(d) covering stop before a consonant that is a trigger for gemination, and (e)–(f) giving stops after such triggers. The data have been rearranged so as to give a clearer picture of the putative historical developments. Moreover, the account has been simplified by giving stems, rather than longer inflected forms. In a few cases, Prakrit equivalents are given that are not directly documented but that would have the indicated shape if they were attested. (Note that (11a) has no counterpart in (12) since its behavior is quite different; cf. (12'a–a''') below.)

gone to *h*, which like inherited *h* has metathesized with the nasal. Note that unlike Murray's scenario, this metathesis is motivated—as a means of eliminating post-vocalic, syllable-final *h*. (Cf. Hock 1985.)

Given the precedent of the nasals, it is then possible to argue for the development in (12'e), involving a similarly motivated metathesis. (For clarity's sake, aspiration and segmental *h* are here distinguished as [h̥] vs. [h].) The only difference between (12'f) and (12'e) is that since Indo-Aryan has stop aspirates of independent origin and does not tolerate clusters of stop plus *h*, the segment *h* fuses with a preceding stop into an aspirate. Gemination of the aspirate, then, compensatorily preserves the quantity of the earlier cluster. (In (12'f), on the other hand, such a development does not take place, since there are no independent aspirated nasals. The *h* of such Prakrit forms is solidly segmental.)

Forms of the type (12b) seem to require weakening of sibilant to *h* AFTER stop, i.e., a mirror image of the weakening in (12'e). From that point onward, however, the development would be entirely parallel to the post-metathesis changes in (12'e). See the formulation in (12'b). While such post-consonantal weakening is not as common as syllable-final weakening, it can be found elsewhere. Compare e.g., Italian **dopplo* > *doppio* [doppjo] 'double'.

Further problems result from the fact that the gemination of stop before stop in (11a) would predict the Prakrit outcome in (12'a). What we find instead is the development in (12'a'). Varma, fully aware of this difficulty, postulated the developments in (12'a''). However, his account involves a complex scenario of syllable-final weakening, followed by assimilation—IN ADDITION to gemination.

Now, syllable-final weakening is a well-established phenomenon in Sanskrit, vouched for by the Prāṭisākhya, where it is referred to as *abhinidhāna*. (Where necessary, weakened segments are indicated by a following [.] in the examples below.) But the Prāṭisākhya—and universal principles—tell us that in (12'a''), the syllabification must be as in (12'a'''). It is difficult to see how in this configuration, syllable-final *k* could assimilate to anything but the following syllable-initial *k*. The outcome, then, should still be an incorrect *yukka**. Under these circumstances, the traditional assimilation approach, probably preceded by a certain amount of syllable-final weakening, would appear to be much more straightforward.

(12') (a)	<i>yukta</i>	>	<i>yukkta</i>	>	<i>yukka</i> *	
(a')	<i>yukta</i>			>	<i>yutta</i>	
(a'')	<i>yukta</i>	>	<i>yuk.kta</i>	>	<i>yutta</i>	> <i>yutta</i>
(a''')	<i>yuk \$ ta</i>	>	<i>yuk.\$kta</i>	>	<i>yuk \$ kta</i>	> <i>yukka</i> *

- (b) *dakṣa-* > *dakha-* > *dakk^ha-*
 (e) *g^hanahpati* > *g^hanaphati-* > *g^hanapp^hati-* > *g^hanapp^hati-*
 (f) *asmin* > *ahmi(n)* > *amhi*
 cf. *brāhmaṇa-* > *bamhaṇa-* 'brahmin'

Supporting evidence for the traditional assimilation approach comes from developments like the ones in (13). The various outcomes of *ātman-* 'soul, self' can be best accounted for as reflecting the intermediate stage in the second column, with partial assimilation of *m* to the preceding voiceless oral stop *t*. (Varma was able to account for some of these outcomes, in terms of the notion *yama* employed in the Prātiśākhya. However, for *atpa-/appa-* his account would run into the same difficulties as his explanation for *yutta-* in (12'a'').)

- (13) *ātman-* > *atpa(n)-* (Aśoka) > *atta-* (Aśoka and later IA)
appa- (later Indo-Aryan)

3.9. If the arguments just presented are correct, then Sanskrit gemination and the geminates of Prakrit cannot be considered directly related. However, this does not rule out an INDIRECT relationship: In Hock 1976 I have presented cross-linguistic arguments for a relationship between syllable-final weakening, "resyllabication," and gemination. For syllable-final weakening, cf. (12'a'') above and the Spanish example in (14) below. Examples of resyllabication, a process in which a syllable-final consonant is shifted into the onset of the next syllable, are given in (15). (Thus, in (15a), the RP form exhibits resyllabication vis-à-vis the TP form.) I will forgo repeating the fairly complex arguments of Hock 1976. Suffice it to state that I proposed to see in gemination a compromise between the two different patterns of syllabication that are found in (15). Compare the formulation in (16).

- (14) Span. [at \$ las] > [at^h \$ las] > [aθ \$ las] > [aδ \$ las] > [a∅ \$ las] 'atlas'

- | (15) | "Normal" Skt. | TP | RP |
|------|-------------------|-------------------|------------------------------|
| (a) | <i>yuk \$ ta-</i> | <i>yuk \$ ta-</i> | <i>yu \$ kta</i> |
| (b) | <i>dak \$ ṣa-</i> | | <i>da \$ kṣa da \$ kṣa</i> |
| (c) | <i>rat \$ na-</i> | <i>rat \$ na-</i> | <i>ra \$ tna-</i> |
| (d) | <i>put \$ ra-</i> | | <i>pu \$ tra- pu \$ tra-</i> |
| (e) | <i>ad \$ ya</i> | | <i>a \$ dya a \$ dya.</i> |

- (16) *yuk \$ ta-* X *yu \$ kta-* = *yuk \$ kta-*
put \$ ra- X *pu \$ tra-* = *put \$ tra-*
 etc.

What is important in the present context is that the Prātiśākhya provide evidence for all three of these related phenomena: *Abhinidhāna*

4.3. More cogent phonological evidence for dialectal diversification may perhaps be seen in the fact that, as noted in 3.6 above, the Rig-Veda and the Brāhmaṇas belonging to it exhibit the development of intervocalic voiced retroflex stops into retroflex laterals. (The same phenomenon is found in some of the branches of the White Yajur-Veda and of the Sāma-Veda.) In this development, then, some of Vedic Sanskrit seems to agree closely with the Prakrits which likewise exhibit lateral outcomes. Cf., e.g., the examples in (19).³ Notice however that in weakening intervocalic voiced retroflex stops to laterals, the Rig-Vedic tradition is not affiliated with any particular geographical dialect, but with the Prakrits as a whole. This raises the possibility that a different, "diglossic" interpretation may be required. This alternative possibility will be discussed further below. What complicates matters is that a similar weakening of intervocalic voiced retroflex stops has been observed for other branches of the Veda. In fact, Whitney (1862: 359) surmises that it is "altogether probable" that in these branches, too, "the resulting sound is... of the nature of an *l*."

(19) "Normal Sanskrit" Rig-Veda (etc.) Pali/Prakrit		
<i>nīḍa-</i>	<i>nīḷa-</i>	<i>nīḷa/nīḷa-</i> 'abode'
<i>gūḍha-</i>	<i>gūḷha-</i>	<i>gūḷha/gulha-</i> 'hidden'

4.4. Fairly uncontroversial evidence for dialectal difference is found in the fact that in the Rig-Veda, forms like the one in (20) have a long syllabic \bar{r} , where elsewhere the r is short.⁴ An explanation for this dialectal diversity has been suggested in Hock 1986b: The length of the Rig-Vedic \bar{r} resulted from compensatory lengthening, a process that also changed earlier *i*, *u* into \bar{i} , \bar{u} ; cf. (21a). Now, while in the Rig-Vedic dialect, compensatory lengthening applied without restrictions, in the dialects that formed the basis of the non-Rig-Vedic traditions it appears to have been restricted to those segments that had counterparts with independently established length. Such counterparts were found for the *i*- and *u*-vowels; cf. (21b). On the other hand, there is a good reason for assuming that at the relevant

³ For the Pali reflexes, cf. Mayrhofer 1951: 49 with 33; for the later Prakrits, see Pischel 1900: 162, 168-70. In the later Prakrits, lateral outcomes appear to be rare for the aspirate.

⁴ The writing with short r in the extant text of the Rig-Veda no doubt reflects the practice of the later language which does not lengthen r . The evidence of the meter shows that in the language of the Rig-Veda, the segment that is written r was in fact long in these forms.

point in time, syllabic *r* lacked such a counterpart.⁵

(20) Pre-Skt.	Rig-Veda	Elsewhere	
* <i>mṛṣda</i>	<i>mṛda</i>	<i>mṛ̥da</i>	'be gracious (to us)'
* <i>dṛṣḍha-</i>	<i>dṛḍha-</i>	<i>dṛ̥ḍha-</i>	'firm'
(21) (a) * <i>nīṣda-</i>	>	<i>nīḍa-</i>	'abode'
* <i>gūṣḍha-</i>	>	<i>gūḍha-</i>	'hidden'
(b) * <i>pīto-</i>	>	<i>pīta-</i>	'drunk'
* <i>bhūto-</i>	>	<i>bhūta-</i>	'been'

It is generally agreed that the Rig-Veda originated in the extreme north-west of India. It is therefore possible that the compensatory lengthening of *r* was a dialectal feature of that area. Corroborative evidence for dialectal differences between northwestern Sanskrit and the Sanskrit of the central area, the "MADHYADEŚA," may be found at a later period, in the area of syntax: As noted in Hock 1981, the later Vedic (as well as post-Vedic) Sanskrit conventions for causee marking differ considerably from what we find in the northwestern language of Pāṇini. Similarly, Deshpande (1983) has argued that certain embedded structures postulated in Pāṇini's grammar and absent from madhyadeśa texts do appear in Sanskrit documents from the northwest.

4.5. A feature of more controversial interpretation is the distribution of *l*- vs. *r*- forms in Vedic: In the earliest, Rig-Vedic layer of the language, Proto-Indo-European (PIE) **r* and **l* usually are both reflected as *r*; cf. (22a). Forms with *l*, such as the ones in (22b), are exceedingly rare. Moreover, they tend to occur more commonly in the notoriously late portions of the Rig-Veda, especially in book 10; cf., e.g., *lohita-* 'red'. However, beginning with late Rig-Vedic, we find a steady increase in *l*- forms. Often these replace, or coexist with, earlier *r*- forms whatever their source; cf. e.g. the data in (23a). The incidence of *l* appears to be especially high in words that have no known Indo-European etymology, including words that are probable borrowings from one of the pre-Indo-Aryan languages; cf. (23b/c).⁶ The later the text, the higher the incidence of *l*. The extent of this increase can be seen from the fact that (i) in the latest parts of the

⁵ The *r̥* found in the accusative and genitive plural of *r*- stems appears to be a fairly late development, built on the analogy of parallel forms in the *i*- and *u*- stems. Cf. Hock 1974b with references.

⁶ On the question of early borrowings from pre-Indo-Aryan languages see Hock 1975, 1984, and the literature cited there.

Rig-Veda, *l* is eight times more common than in the oldest parts, and (ii) the ratio between *l* and other segments is 17 : 5000 for the entire Vedic language vs. 52 : 5000 in post-Vedic; cf. Wackernagel 1896: 215-6.

- | | | | | |
|------|--------------------------------------------|---------------------|--------------------------------------------|--------------------------|
| (22) | PIE * <i>r</i> | | PIE * <i>l</i> | |
| | (a) * <i>rewdh-</i> > <i>rohitá-</i> 'red' | | * <i>klew/klu-</i> > <i>śro/śru</i> 'hear' | |
| | (b) * <i>rewdh-</i> > <i>lohitá-</i> 'red' | | * <i>klow-ko-</i> > <i>ślo-kā-</i> 'fame' | |
| (23) | (a) PIE * <i>r</i> : early RV | <i>rohitá-</i> | late RV | <i>lohitá-</i> 'red' |
| | RV | <i>riś-</i> | AV | <i>liś-</i> 'tear up' |
| | RV | <i>kṣar-</i> 'flow' | ŚB | <i>kṣāláyati</i> 'rinse' |
| | PIE * <i>l</i> : early RV | <i>rabh-</i> | late RV | <i>labh-</i> 'seize' |
| | RV | <i>cáрати-</i> | AV | <i>cáлати-</i> 'moves' |
| | RV | <i>rih-</i> | JB | <i>lih-</i> 'lick' |
| | PIE * <i>r</i> or * <i>l</i> (?): | | | |
| | RV | <i>pāmsura-</i> | SV | <i>pāmsula-</i> 'dusty' |
| | cf. also RV | <i>miśra-</i> | beside RV | <i>-miśla-</i> 'mixed' |
| | (b) Uncertain origin: | | | |
| | RV | <i>mruc-</i> | AV | <i>mluc-</i> 'go down' |
| | (c) Borrowing: | | | |
| | RV | <i>lāṅgala-</i> | | 'plough' |

(Abbreviations: AV= Atharva Veda, JB= Jaiminīya-Brāhmaṇa, RV= Rig-Veda, ŚB= Śatapatha-Brāhmaṇa, SV= Sāma-Veda.—In the last two examples of (a), the suffix could be either **lo-* or **ro-*).

4.6. A variety of different explanations have been proposed for the increase of *l*- forms in early Sanskrit. A common view is that they belong to a more "popular" layer of Sanskrit that contrasts with a "hieratic" *r*- dialect. According to some, it is this popular variety of Sanskrit that served as a vehicle for borrowings of the type (20c). Compare for instance Ammer 1948, Bloch 1934, Renou 1956, Thieme 1955, Wackernagel 1926.

4.7. According to a second view, the *l*- forms (other than the type (23c)) are the result of dialect borrowing. Note that this view is not necessarily mutually exclusive with the preceding one. For instance, Thieme (1955) relates "popular" Rig-Vedic *l* to the asuras' regional and non-standard *he* 'lavo *he* 'lavah in example (3). What is attractive about this correlation between social and regional dialects is that it makes it possible to establish very plausible correlations between several otherwise seemingly unrelated phenomena. These are as follows:

The first is the dialectal distribution of *r*- and *l*-forms, in Indo-Aryan and in the larger, Indo-Iranian family to which Indo-Aryan belongs: In early Iranian, Indo-European **r* and **l* had completely merged into *r*. On the other extreme, in the eastern Aśokan inscriptions from Magadha, as well as in the stage-Magadhi of Sanskrit drama, the contrast between **r* and **l* (to the extent that the segments have not been lost) is neutralized in favor of *l*. This dialectal setting helps explain the fact that the Rig-Vedic dialect, being closest to Iranian, normally shows *r* for both **r* and **l*. Moreover, it provides a good motivation for the increase of *l*-forms in the later language: As noted for instance by Zimmer (1879: 38-9), the historical increase in *l*-forms appears to go hand in hand with a shift of the linguistic and literary core area of Sanskrit from the extreme northwest to the central area of madhyadeśa. This shift moves the core area closer to the eastern *l*-dialects and thus permits the introduction of a larger number of borrowings from those dialects.

Secondly, the fact that the pure *l*-dialects, even after this shift, still lie outside the core area of Sanskrit, helps explain the sociolinguistic connotations of the *l*-forms in Sanskrit. On one hand, this scenario would predict that from the puristic point of view, *l*-forms would be considered corruptions. (Recall that in Sanskrit drama, the vidūṣaka, an ignorant brahmin, speaks a variety of Magadhi, an eastern form of Prakrit.) This attitude would account for the negative connotations of some of the *l*-forms. On the other hand, the scenario is consonant with the fact that *l*-forms are characteristic of the "popular" language, if by "popular" we mean "vernacular." What we need to assume is that the speakers of "popular" Sanskrit were less averse to dialect borrowing than those of the more conservative and puristic, "hieratic" variety of the language.

4.8. While few, if any, linguists would take issue with the view that in early Indo-Iranian, the western, Iranian, dialects had completely neutralized the PIE contrast between **r* and **l* in favor of *r*, and the eastern Indo-Aryan, Magadhan, dialects had neutralized it in favor of *l*, there is some disagreement as to whether there may have been a third, Indo-Aryan, dialect which retained the contrast between **r* and **l*. And this difference turns out to be of crucial importance for the evaluation of certain claims concerning the diachronic phonology of early Indo-Aryan retroflexion. (See 7.1 below.)

Linguists who argue in favor of such a third dialect claim that in early Rig-Vedic (and/or later), *l*-forms more commonly are found for words with PIE **l* than with **r*. While forms with *l* for *r* do occur in the Rig-Veda (cf. the examples in (22) and (23)), they are said to be limited to

“labial”⁷ environment; cf., e.g., (22a), as well as (24).⁸ That is, their *l* is attributed to a special, conditioned development. The implicit assumption is that *l*-forms reflecting PIE **l* cannot be explained by such a special phonological conditioning. As a consequence, then, they must be attributed to borrowing from a dialect that retained the original contrast between **r* and **l*. Compare for instance Fortunatov 1881, 1900, Wackernagel 1896: 217, Arnold 1893, 1897: 259. See also 7.1 below.

(24) PIE **r*:

<i>kruś-</i> ‘shout’	:	<i>klośa-</i> ‘a shout’
<i>rup-</i> ‘rip off’	:	<i>lopāśa-</i> ‘jackal’
<i>jalgul-</i> ‘swallow’	:	<i>jargur-</i> ‘swallow’
<i>upala-</i> ‘upper grinding stone’	:	<i>upari-</i> ‘above’
<i>vala-</i> ‘cave’	:	<i>var/vr-</i> ‘enclose’

4.9. In an important, but largely ignored paper, Bartholomae (1896) has demonstrated that the argument for a third dialect area with retention of the contrast between *r* and *l* is dubious. For as he noted, a large number of the Rig-Vedic words with supposedly retained *l* likewise show that segment in “labial” environment; cf., e.g., the examples in (25), as well as in (22). In fact, whether in labial or in non-labial environment (for which see some of the examples in (23)), no appreciable difference seems to exist between the number of *l*-forms reflecting PIE **l* and those which go back to **r*.

(25) PIE **l*:

<i>ruc-</i> ‘shine’	:	<i>loka-</i> ‘world’
<i>pru-</i> ‘spring’	:	<i>plu-</i> ‘flow’
<i>puru-</i> ‘much’	:	<i>pulu-</i> ‘much’
<i>rabh-</i> ‘seize’	:	<i>labh-</i> ‘seize’

⁷ Note than just as in the works of the Sanskrit grammarians and phoneticians, the term “labial” here includes both rounded vowels and labial consonants. Moreover, the cited examples suggest that these “labials” do not have to occur directly next to the liquid.

⁸ The etymologies in this example, as well as in (24), may not always be self-evident. Some of them nevertheless are quite sound. For instance, the semantic specialization by which **lou-ko-* comes to mean ‘world’ has parallels in Lat. *lūcus* ‘grove’, Lith. *laukas* ‘field’, Eng. *lea* ‘meadow’. The starting point seems to have been something like ‘clearing in the forest’, hence ‘grove’, ‘meadow’, ‘field’, or ‘area fit for habitation, (inhabitable) world’.

The evidence of early Indo-Aryan, then, does not support the assumption of a dialect in which the PIE contrast between **r* and **l* was retained. Rather, it appears that ALL of Indo-Iranian neutralized the contrast. For even though the large central area, between the extreme west and the extreme east, offers both *r* and *l*, each of the two segments may indiscriminately reflect either **r* or **l*. That is, here too, the PIE contrast is in effect neutralized. Under these circumstances, and given the absence of any direct evidence in its favor, the assumption of a dialect area that retained the PIE contrast between **r* and **l* would seem to be a gross violation of Occam's Razor. (See also Edgerton 1946: 17-19, Hock & Pandharipande 1976: 125-6.)

The Sanskrit coexistence of *r* and *l*, combined with the predominance of *r* and with the increase of *l*-forms as the core area of Sanskrit shifts more to the east, then, is more plausibly attributed to dialect borrowing from the eastern *l*-dialects into a western *r*-dialect area.

4.10. There is, to be sure, a possible alternative interpretation of the Vedic evidence. But like the borrowing analysis, it does not require setting up a dialect which retained the contrast between **r* and **l*.

In Hock 1979 I have shown that the gradual elimination in Vedic Sanskrit of morphophonemic retroflexion processes across word boundary proceeded via variable rules. And in Hock 1980 I have demonstrated that a Vedic change of *iy* to *y* before vowel was eliminated through a variable rule. This independent evidence for variable processes in Vedic Sanskrit strengthens an argument that I first presented in Hock & Pandharipande 1976 (note 10): We need to start again with the assumption that the contrast between **r* and **l* was at first neutralized to **r* in ALL of Indo-Iranian. Now, recall that in the Rig-Veda, PIE **r* and **l* appeared as *l* mainly in "labial" environments. Against this background, it is possible to speculate that the change of **r* to **l* began as a variable rule of COMMON Indo-Aryan, initially triggered by "labial" environments. While the process evidently was completed in the eastern Middle Indo-Aryan dialects, in the central area—and especially in the northwestern dialects—it appears to have been aborted in mid-stream, presumable due to the sociolinguistically negative value which tended to be attached to the *l*-variants in this dialect area.

5. Evidence from Middle Indo-Aryan: A number of the phonological developments that differentiate Prakrit or Middle Indo-Aryan from Sanskrit have already been mentioned. These include the pervasive reshaping of

consonant clusters (cf. (7) and (12')); the neutralization of the contrast between **r* and **l* in the eastern, Magadhi, dialects; and the intervocalic weakening of the voiced retroflex stops *ḍ* and *ḍh* to lateral *l* and *lh*.

5.1. Associated with this latter development is a pervasive tendency to weaken all non-geminate intervocalic stops.⁹ Cf. the examples in (26). While weakening is the norm for the classical Prakrits, the early Middle Indo-Aryan of Pali and of the Aśokan inscriptions shows the development much more sparingly. Nevertheless, even here we may find occasional examples of weakened intervocalic stops, especially for the voiced aspirates, where Sanskrit preserves the unweakened pronunciation. Compare the Pali examples in (27), where the items in (a) exhibit weakening, while those in (b) represent the more common, unchanged outcomes. Examples of the type (23a) are often interpreted as dialectal borrowings or "Prakritisms"; cf., e.g., Mayrhofer 1951. However, they may just as well be considered early results of a variable process of intervocalic weakening, a change in progress that was to be successfully completed in most of the "classical" Prakrits.

(26)	Sanskrit	Prakrit	
	<i>mukha-</i>	<i>muha-</i>	'face, head'
	<i>megha-</i>	<i>meha-</i>	'cloud'
	<i>āgata-</i>	<i>āgada-, āyaya-, āaa-</i>	'arrived'
(27)	Sanskrit	Pali	
(a)	<i>laghu-</i>	<i>lahu-</i>	'light'
	<i>-ebhiḥ</i>	<i>-ehi</i>	(Instr. pl. ending)
	<i>prṣata-</i>	<i>pasada-</i>	'spotted antelope'
	<i>khādita-</i>	<i>khāyita-</i>	'eaten'
(b)	<i>khādita-</i>	<i>khādita-</i>	'eaten'
	<i>tathāgata-</i>	<i>tathāgata-</i>	(epithet of the Buddha)
	<i>labhati</i>	<i>labhati</i>	'obtains'
	<i>sīdati</i>	<i>sīdati</i>	'sits (down)'

5.2. A development more or less parallel to the intervocalic weakening of non-geminate oral stops is the tendency for medial dental *ṛ* to change into a

⁹ Geminate generally persist in Middle Indo-Aryan, although short vowel + geminate may interchange with long vowel + single segment—in either direction. For a recent discussion of this non-weakening development, see Hock 1986a: 161 and 1986b. Genuine, weakening, in the form of degemination with compensatory lengthening, is found only in early Modern Indo-Aryan; cf. Miranda 1984 and Hock 1986b.

segment that is written as retroflex η ; cf., e.g., (28a). Schwarzschild (1973) has argued that in certain varieties of Middle Indo-Aryan, this change was part of a neutralization between dental n and retroflex η , such that the dental appeared word-initially, the retroflex medially in non-geminates, while medial geminates varied in their transcription between retroflex and dental. Concerning the interpretation of the medial non-geminate retroflex nasal, it is possible to go beyond Schwarzschild: Given the fact that in modern Sanskrit, medial retroflex η is pronounced as a retracted nasalized flap [ɾ̄], it is possible to speculate that the retroflex transcription of medial non-geminate apical nasal in Middle Indo-Aryan dialects likewise referred to a retracted nasalized FLAP [ɾ̄], that is, that the transcription with retroflex nasal indicated intervocalic weakening.¹⁰

What is important for the present argument is Schwartzschild's claim that in the early Prakrits this development is characteristic of the north-western Aśokan inscriptions (as well as of the extremely northwestern Niyā-Prakrit), while the eastern Aśokan dialects do not exhibit the change.

This claim must be qualified to some extent. For in the northwestern Aśokan inscriptions, n -forms of this type are quite rare, the normal representation being n . (In fact, after an incomplete but fairly extensive cross-check of Bloch's (1950) edition of the Rock inscriptions, I have come up only with the two examples in (28a).) However, it is possible that many of the n -spellings reflect the influence of the eastern model from which the northwestern inscriptions may have been translated. Independent evidence for this assumption can be seen in the fate of original retroflex η : The eastern dialects regularly show dental [n] for this segment, while the northwestern inscriptions generally retain η ; cf. (28b). In a fairly large number of cases, however, they offer the "eastern" n instead; cf. (28c). (For other "easternisms," cf. Bloch 1951: 47.) If this explanation is correct, then the lower frequency of η for words with original dental n could be accounted for by the assumption that the change from n to η was still in progress, with many instances of n not yet affected.

5.3. A development shared by all of Middle Indo-Aryan is the replacement of syllabic r by vowels or combinations of non-syllabic r + vowel. Compare

¹⁰ This interpretation may perhaps be supported by the fact that Modern Indo-Aryan provides evidence for the weakening also of non-geminate [m]; cf. Skt. *kamala-* vs. dial. Hindi [kāḷal] 'lotus'. An intermediate stage probably was [kaḷal-]. Cf. Hamp 1974, Hock 1986b: 82. (The present speculation has been anticipated in Bloch 1919: § 81, but with focus mainly on Marathi.)

(28)	Sanskrit	Northwest Aśokan	East Aśokan	
(a)	<i>devānām</i>	<i>devaṇa/devana(ṁ)</i>	<i>devānaṁ</i>	'of the gods'
	<i>āṇṛṇyam</i>	<i>aṇaṇiyam/anaṇiyam</i>	<i>anaṇiyam</i>	'unindebtedness'
(b)	<i>brāhmaṇa-</i>	<i>bramaṇa-</i>	<i>bābhana-</i>	'brahmin'
	<i>śramaṇa-</i>	<i>śramaṇa-</i>	<i>samana-</i>	'monks'
	<i>prāṇa-</i>	<i>praṇa-</i>	<i>pāna-</i>	'animate being'
(c)	<i>agreṇa</i>	<i>agrena</i>	<i>aggena</i>	'initial (Instr.)'
	<i>ākāreṇa</i>	<i>akarena</i>	<i>ākālena</i>	'appearance (Instr.)'

the examples in (29) which come from the north-central area. Linguists subscribing to the neogrammarian doctrine of the regularity of sound change would obviously like to attribute these quite diverse developments to originally different environmental or dialectal conditions. But the nature of the evidence has so far defied any attempt at such an explanation that would account for all of Middle Indo-Aryan. At best it is possible to point to certain tendencies, such as outcomes with *u* next to labials. Compare, e.g., (29a). However, as the alternative form of this item, as well (29b–c) show, other outcomes are possible even in labial environment. And yet further variations are found in other environments. (Berger (1955), to be sure, has argued that it is possible to posit regular developments for Pali, if proper allowance is made for analogy and carry-overs from the original, eastern speech of the Buddha. Perhaps his approach is correct for Pali. However, the number of special assumptions and developments required to account for apparent exceptions appears extremely large. Moreover, the situation in the other Middle Indo-Aryan dialects is not accounted for.)

(29)	Sanskrit	Middle Indo-Aryan	
(a)	<i>vṛddhi-</i>	<i>vaḍḍhi-/vuḍḍhi-</i>	'growth'
(b)	<i>mṛta-</i>	<i>maṭa-</i>	'dead'
(c)	<i>mṛga-</i>	<i>miga-</i>	'antelope'
(d)	<i>kṛta-</i>	<i>kaṭa-/kiṭa-</i>	'done'

5.4. The final phonological feature on Middle Indo-Aryan to be examined is the fate of the Old Indo-Aryan/Sanskrit configurations of (i) vowel + *r* + dental stop and (ii) syllabic *r* + dental stop. As (29a, b, d) illustrate, a common outcome presents retroflex stops where Sanskrit had dentals. However, beside or instead of such forms with retroflex we may find words with dentals; cf., e.g., (30).

- (30) Sanskrit Middle Indo-Aryan
- | | | | | |
|-----|----------------|---------------|-----------------|-----------|
| (a) | <i>kṛta-</i> | <i>kata-</i> | : <i>kaṭa-</i> | 'done' |
| (b) | <i>kīrtti-</i> | <i>kitti-</i> | : <i>kīṭṭi-</i> | 'fame' |
| (c) | <i>artha-</i> | <i>attha-</i> | : <i>aṭṭha-</i> | 'purpose' |

As for the dialectal distribution of these forms in early Middle Indo-Aryan, a wide-spread view holds that retroflexion is a dialectal, eastern, development; cf., e.g., Bloch 1919: 117, Chatterji 1926: 44-6, 1960: 61-2, and the discussion and references in Deshpande 1978: 244-5. In 1934, Bloch stated the matter somewhat differently, claiming that the dental outcome seems more common in the southwest; cf. also Deshpande (ibid.).

In a number of publications, one or another of these statements of the dialectal distribution of retroflex and dental outcomes has served as the basis for arguments concerning the relationship between the Prakrits and Sanskrit; cf. e.g. Chatterji and Deshpande. However, given the fact that the core area of Sanskrit at an early time was in the northwest, and later in the central area of madhyadeśa, statements concerning the eastern and the southwestern dialects of Middle Indo-Aryan may not be the most relevant for an investigation of early Sanskrit. Fortunately, the Aśokan inscriptions provide evidence for the northwest and north-central areas as well. And as it turns out, the dialect map which we can distill from the inscriptions is less clear cut than Bloch's combined statements might suggest. Rather, we find that both the northwest and north-central areas exhibit a considerable MIXTURE of retroflex and dental outcomes. Interestingly, the northwest shows a stronger preference for retroflex outcomes than the north-central inscriptions. In the latter area, retroflex regularly appears for syllabic *r* + single dental, but dentals seem to be preferred in other environments. compare the summary in Table III which is based on the evidence of the major Rock inscriptions.¹¹

6. The question of Prakritisms and diglossia in Vedic. After this rather extensive survey of Vedic and Middle Indo-Aryan evidence, we can more meaningfully explore the question of whether it is legitimate to postulate an influx of Prakritic elements into Vedic Sanskrit. An allied question concerns the nature of the relationship between Prakrit and Sanskrit during

¹¹ Note that in the northwestern dialects, we may frequently find orthographic clusters of dental or retroflex stop + *r*. It is not entirely clear whether these should be read as an alternative method of transcribing retroflex stops, or whether they should be interpreted as genuine clusters. Representations of this type are given in square brackets.

Sanskrit	Southwest	Northwest	North-Central	East
<i>vart-</i>	<i>tt</i>	<i>ṭ(t)</i>	<i>ṭṭ/tt</i>	<i>tt</i>
<i>kartavya-</i>	<i>tt</i>	<i>ṭ</i>	<i>ṭṭ</i>	<i>ṭṭ</i>
<i>(-)artha-</i>	<i>tth</i>	<i>ṭh (th) [thr]</i>	<i>ṭṭh/tth</i>	<i>ṭṭh</i>
<i>vardh/vṛddh-</i>	<i>ḍḍh/ddh</i>	<i>dh/dh [dhr]</i>	<i>ḍḍh/ddh</i>	<i>ḍḍh</i>
<i>kīrti-</i>	<i>tt</i>	<i>ṭ [tr]</i>	<i>tt</i>	<i>ṭṭ</i>
<i>(-)vṛtti</i>		<i>ṭ</i>	<i>tt</i>	
<i>vṛtta-</i>	<i>tt</i>	<i>ṭ(t)</i>	<i>tt</i>	<i>tt</i>
<i>vṛddha-</i>	<i>ḍḍh</i>	<i>dh (dh)</i>	<i>ddh</i>	<i>ḍḍh</i>
<i>kṛta-</i>	<i>t</i>	<i>ṭ [tr]</i>	<i>ṭ</i>	<i>ṭ</i>
<i>bhṛta-</i>	<i>t</i>	<i>ṭ</i>	<i>ṭ</i>	<i>ṭ</i>
<i>*sṛta-(?)</i>	<i>ṭ</i>	<i>ṭ</i>	<i>ṭ</i>	<i>ṭ</i>
<i>-sṛta-</i>	<i>t</i>	<i>ṭ</i>	<i>ṭ</i>	
<i>mṛta-</i>		<i>ṭ</i>	<i>ṭ</i>	

(Notes: "Southwest" = inscriptions mainly from Girnar; one example from Sopara; "Northwest" = Shahbazgarhi and Mansehra; "North-Central" = Kalsi; "East" = mainly Dhauli, supplemented by Jaugada.—*ḍḍh/ddh* etc. = "retroflex and dental are both common"; *ṭh (th)* = "retroflex is more common than dental." For [thr] or [ṭhr] see note 11. Blanks indicate that no relevant attestation was found for the area in question.)

Table III: Middle Indo-Aryan reflexes of Sanskrit dental +[r/r]

the Vedic period. Was it comparable to the heavily polarized relationship that we find in Classical Sanskrit (cf. Hock and Pandharipande 1976, Hock 1986: 429–32)? That is, was it diglossic in the sense of Ferguson 1959? Or was it more similar to, say, the relationship between standard and vernacular in modern American English?

As noted in the introduction, some scholars have denied that the early Sanskrit developments which are often considered dialectal must be attributed to fully differentiated dialects. Rather, they would advocate considering them something like forerunners of later Middle Indo-Aryan changes; cf. Mansion 1931, Renou 1956. The notion of Vedic dialects is in effect rejected also by Deshpande (1978) who argues that many of the claimed Vedic Prakritisms, as well as the contrast between dental and retroflex which is generally acknowledged to go back to the earliest Vedic period, are to be attributed to something like corruptions in the oral transmission of the early Sanskrit texts. These are said to reflect features in the native dialect of the persons in charge of recitation, features that

differ from the early Sanskrit norm and come closer to the later Prakrit norms.¹²

On the other side there is a tradition, going back as far as Pott (1833), according to which certain developments are indubitably—or at least, most likely—to be attributed to Prakrit evidence. (Other early advocates of such a scenario are Benfey 1859 and Weber 1851.) A minority of scholars (such as for instance Tedesco 1947) has carried this approach to the extreme, tending to posit Prakrit origin for almost anything that is not explainable by straight-line developments from PIE or Proto-Indo-Iranian.

To avoid getting bogged down in what sometimes probably are unresolved controversies, I will limit my discussion to those phenomena whose interpretation I believe to be reasonably well established.

6.1. Several lexical items that make their appearance in Vedic Sanskrit exhibit features that link them with Middle Indo-Aryan, rather than Sanskrit.

One such innovation, recognized already in Wackernagel 1896: xviii–xix, is the replacement of the Rig-Vedic, inherited present stem of the verb ‘to do’ by a stem that is best explained as derived from the corresponding Middle Indo-Aryan form(s); cf. (31a). The Prakrit forms can be straightforwardly derived from their inherited Sanskrit counterparts via the well-established substitution of *a* or *u* for syllabic *r*. The innovated Sanskrit stems, then, are plausibly accounted for as regularizations, introducing the *r* that is found in other forms of the verb; cf. (31b).¹³

(31) (a)	Inherited stem	Innovated stem	Prakrit stem
	<i>कर्णो-</i>	<i>karo-</i>	(*) <i>kaṇo-</i>
	<i>कर्णु-</i>	<i>kuru-</i>	(*) <i>kuṇu-</i> (cf. <i>kuṇa</i>)
	(b) inf. <i>kar-tum</i> , desiderative <i>ci-kīr-ṣati</i> , etc.		

A second word indicative of Prakrit influence on Vedic Sanskrit is *muhuḥ* ‘suddenly, quickly’. As Bloch (1929) demonstrated, this word can be given a credible etymology if it is considered a borrowing of the Middle Indo-Aryan reflex of Proto-Indo-Iranian **mṛjhu-*; cf. (32). Previously proposed etymologies, on the other hand, leave a lot to be desired; cf. Mayrhofer 1953–61: s.v.

¹² This latter view has been discussed and refuted in Hock 1979. Additional difficulties have been pointed out by Polomé (1963).

¹³ A different interpretation is found in Schmid 1960. A refutation of Schmid’s view is given in Hock & Pandharipande 1976 (note 3).

(32) PIIr.	Avestan	Expected Skt.	Attested Skt.	Expected Pkt.	
	*mṛjhu-	mər ² zu-	*mṛhuḥ-	muhuḥ	muhu-

A third item with Middle Indo-Aryan development of syllabic *r* is the word for 'gambler'. As Wackernagel (1932) has shown, the form is most plausibly explained as the Prakrit equivalent of expected Sanskrit *kṛtavant-* 'who has (or hopes to have) the *kṛta-* or lucky throw'. Compare (33).

(33) Expected Skt.	Attested Skt.	Expected Pkt.
<i>kṛtavant-</i>	<i>kitava-</i>	<i>kitava-/katava-/kiṭava, etc.</i>

Finally, the neuter interrogative pronoun *kim* provides evidence for Prakritic morphological influence; cf. Tedesco 1945. The expected Sanskrit form is *cid* (cf. Avestan *ciṭ*), of which *kad* is an early, pre-Vedic replacement. Both of these forms contain the normal Sanskrit pronominal nominative/accusative singular neuter ending *-d*. The form *kim*, on the other hand, which begins to appear in the Rig-veda and quickly ousts the old *kad* (except in a few marginal uses), contains the usual Middle Indo-Aryan pronoun ending *-m*; cf. (34) and (35). And as (35b) shows, this *m* is an innovation, built on the model of the nouns.

(34)	Proto-IAr.	Expected Skt.	Expected Pkt.	Attested Skt.
	* <i>cid</i>	(<i>cid</i>) <i>kad</i> ¹⁴	<i>kim</i> ¹⁴	<i>kim</i> (<i>kad</i>)
(35) (a)	Proto-IAr	Skt.	MIAr.	
	* <i>tad</i>	<i>tad</i>	<i>taṁ</i>	'that'
	* <i>yad</i>	<i>yad</i>	<i>yaṁ</i>	'which (rel.)'
(b)	Stem		Nom./Acc.neuter	
	Noun	<i>deva-</i> :	<i>deva-ṁ</i>	'god'
	Pronoun	<i>ta-</i> :	X = <i>ta-ṁ</i>	
		<i>ya-</i> :	Y = <i>ya-ṁ</i>	

Two of the forms just discussed, the innovated present stem of 'do' and the new interrogative pronoun *kim*, are of considerable significance for an interpretation of the relationship between Prakrit and Sanskrit during early Vedic times. For while many of the phonetic Prakritisms could perhaps be explained as having arisen as mistakes in the later transmission of the Vedic texts, such an account is inadequate for *kuru-* and *kim*, since it would not be able to account for the chronology of the forms.

14 Note that both Vedic Sanskrit *kad* and Prakrit *kim* are analogical replacements of the original *cid* which serves only in marginal function, as a particle of emphasis, etc.

As is well known, the stem *kuru-* first appears in the notoriously late tenth book of the Rig-Veda. In the Atharva-Veda, the new stem has become more productive than the old one. And by the time of the Brāhmaṇas, the old stem *ḷṛṇu-* survives only in citations from the earlier Vedic texts. The form *kim* follows a similar development, except that the change appears to have begun earlier. Throughout the Rig-Veda it is in competition with inherited *kad-*. In the tenth book *kim* predominates; the later language, by contrast, uses *kim*. This chronology is perfectly compatible with the assumption that the words were borrowed from Prakrit during the Rig-Vedic period and that subsequently they slowly replaced their native Sanskrit counterparts. On the other hand, an approach trying to account for them as mistakes in the later oral transmission of the texts would be unable to explain why, for example, *kuru-* replaces *ḷṛṇu-* in the tenth book of the Rig-Veda, but not earlier, or why it becomes the norm for the Atharva-Veda, etc. Mistakes in recitation should be distributed in a more random fashion.

We can therefore conclude that the forms discussed in this section are in fact borrowings from Prakrit and thus provide evidence for an early Vedic coexistence of a more conservative variety of language—Sanskrit—with more developed varieties—early forms of Prakrit. These Prakrits should, of course, not be conceived of as identical with the later Middle Indo-Aryan dialects, attested in the Aśokan inscriptions or even later. Still, as the evidence discussed has shown, some of the features that separate the later Prakrits from Sanskrit are found as early as in Vedic. These include the replacement of syllabic *r* by vowel and the development of a new, innovated ending for the neuter nominative/accusative singular of the pronouns.

The early Prakrit borrowings are interesting for another, sociolinguistic reason: They suggest that at this early stage of the language, there has not yet been any attempt on the side of Sanskrit to differentiate itself from the Middle Indo-Aryan vernaculars. For borrowings like *kim* are accepted, even though they belong to the basic vocabulary of the language and affect its grammatical structure. At this stage, therefore, the relationship between Prakrit and Sanskrit is not yet polarized or diglossic (in the sense of Ferguson 1959).

6.2. A number of phonological developments that are more or less contemporary with the lexical/morphological changes just discussed likewise are commonly attributed to Prakrit influence or borrowing. These include a wide-spread weakening of voiced aspirates to *h*.

For one segment, pre-Sanskrit **jh* (reflecting PIE **ǵh* or palatalized **ǵ(ʷ)h*), the change is completely regular; cf., e.g., the examples in (36a). Elsewhere, the change is highly sporadic; cf. (36b). What is important is that, as in the case of *kuru-*, forms with *h* often replace earlier forms with aspirated stop within the observable history of Vedic Sanskrit. Compare for instance (36c), where the form with *bh* represents the Rig-Vedic norm, while forms with *h* are rare and generally late in the Rig-Veda; cf., e.g., Debrunner 1957: 139. In post Rig-Vedic, on the other hand, *h*-forms become the norm.

(36)	PIE	(Rig-)Vedic	
(a)	<i>*ǵhew/ǵhu</i>	<i>ho-/hu-</i>	'pour libations'
	<i>*ǵʷhen-ti</i>	<i>han-ti</i>	'slays'
(b)	<i>*-medhā</i>	<i>-mahi</i>	(first pl. mid. ending)
	<i>*rewdh/rudh-</i>	<i>rohitā-</i>	'red'
vs.	<i>*rewdh/rudh-</i>	<i>rudhira-</i>	'red'
	<i>*widhewā</i>	<i>vidhavā</i>	'widow'
(c)	<i>*ǵhrebh/ǵhṛbh-</i>	<i>gr̥bhṇāti</i>	
		→ <i>gr̥hṇāti</i>	'seize'

According to Bradke (1886), the change from voiced aspirated stop to *h* must be due to vernacular, Prakritic influence. This view has been widely accepted; cf., e.g., Edgerton 1946, Emeneau 1966. Meillet (1912/13), on the other hand, claims that the change was more or less regular within the northwestern speech that forms the basis of the Rig-Vedic language. However, as the basis of Sanskrit shifted to an area that did not participate in the change, the speakers of that area began to substitute their own voiced aspirates for the *h* of the Rig-Vedic texts. In many words they succeeded, but in some words, and especially in inflectional endings (such as the *mahi-* of (36b)), they failed to do so. Also Meillet's view has found adherents; cf., e.g., Bloch 1919.

Of these two different arguments, Bradke's is clearly superior. For not only do lexical/morphological loans like *kim* provide independent evidence for the possibility of borrowing. We also know that the change of voiced aspirates to *h* is a wide-spread and eventually regular Middle Indo-Aryan development. But perhaps most importantly, the chronological development of forms like the ones in (36c) is compatible with Bradke's analysis, but not with Meillet's scenario. As in the case of the lexical/morphological borrowings, a hypothesis postulating substitutions (of aspirated stops for Rig-Vedic *h*) in the later transmission of the Vedic texts would be unable to account for this chronology.

Note however that given the nature of the Middle Indo-Aryan evidence, an alternative analysis is possible. Under this interpretation, the Vedic development of voiced aspirates to *h* is an early stage in the variable-rule processes which eventually, in the "Classical" Prakrits, converted all intervocalic aspirates to *h*. The fact that, as noted earlier, the change appears to have still been in progress in Pali may be taken as corroborative evidence. Further supporting evidence for such a variable-rule weakening may possibly be seen in the Rig-Vedic (and perhaps more wide-spread) development of intervocalic voiced retroflex stops to retroflex laterals.¹⁵

At present I can think of no strong evidence or arguments to decide between the Prakrit-influence and variable-process accounts. But no matter which of them should turn out to be more accurate, both are consonant with a non-polarized relationship between early Vedic Sanskrit and Prakrit. On the other hand, if the variable-process interpretation is correct, then the fact that later Sanskrit no longer participates in the change, while the Prakrit do, would constitute further evidence for a diglossic polarization at that time.¹⁶

6.3. The fact that the Middle Indo-Aryan weakening of intervocalic voiced aspirates to *h* thus is found also in Vedic Sanskrit lends further support to what I have argued elsewhere (Hock and Pandharipande 1976) to be the best analysis for one of the developments frequently labeled "spontaneous retroflexion." This is the intervocalic change of *n* to *ṇ* outside the environment that conditions regular *n*-retroflexion (for which see example (9) above). Instances of this change appear as early as the Rig-Veda; cf., e.g., (37a). Interestingly, like the weakening of voiced aspirates, this change may occasionally affect new items in post-Rig-Vedic, as in the example under (37b).

¹⁵ Note that this analysis is eminently compatible with Mansion's (1931) and Renou's (1956) argument that the alleged Vedic Prakritisms are something like forerunners of later Middle Indo-Aryan changes. However, for borrowings like *kim* and *kuru*-, such an interpretation would not be appropriate.

¹⁶ Some scholars, notably Wackernagel (1942), find evidence also for the early voicing of medial voiceless stops, as in the river name *vibālī-* (RV 4.30.12) = earlier **vi-pārī-* 'the one whose shores are far apart'. If this interpretation is correct, we would have further evidence for Prakritic borrowing or for an incipient sound change that gets regularized in the Prakrits. For post-Rig-Vedic examples whose interpretation is more certain, see also Edgerton 1930.

(37) (a) Proto-Indo-Iranian Avestan	Rig-Vedic Skt.	
* <i>st(h)ūnā-</i>	<i>stūnā-</i>	<i>sthūṅā</i> 'pillar'
* <i>mani-</i>	<i>-ma^hni-</i>	<i>maṅi-</i> 'necklace'
(b) Rig-Vedic Skt.	Later Skt.	
<i>mānavá-</i>	<i>māṅava</i>	'human; young man'

The issue of "spontaneous retroflexion" has given rise to a plethora of different explanations which have been reviewed in Mayrhofer 1968. Mayrhofer argued that none of these is cogent. Instead, anticipated by Bloch (1934: 57), he claimed that the Rig-Vedic change constitutes the initial stage of the more wide-spread Middle Indo-Aryan development of *n* to *ṅ*. That is, in more "up-to-date" terminology, we are dealing with the early phase of a variable rule. What makes this analysis especially attractive is the fact that as noted earlier (section 5.2), the Prakritic "weakening" of *n* to *ṅ* is characteristic of the northwestern dialects, i.e., of the area closest to the dialectal basis of early Vedic.

Now, as noted in 4.10 above, Hock 1979, 1981 provides independent evidence for variable phonological processes in Vedic Sanskrit. Given that evidence, as well as the suggestive evidence presented in this paper in favor of variable-rule approaches for the Vedic *l*-forms and the weakening of voiced aspirates to *h*, Mayrhofer's proposal is eminently plausible. However, just as in the case of these other Vedic phonological developments, the possibility of Prakritic borrowing cannot be excluded.

6.4. While the developments so far discussed are "convergent" with Middle Indo-Aryan changes, there is some evidence that the diglossic polarization which characterizes the classical language had its beginnings in Vedic. Recall first of all the passage in example (3), where the asuras' dialectal (whether Prakritic or regional Sanskrit) pronunciation of *l* for *r* is considered a barbarism. Secondly, developments of a morphological sort suggest that Sanskrit and Middle Indo-Aryan began to develop in very different directions.

Thus from early Rig-Vedic to the later prose of the Taittirīya Saṁhitā, there is a steady reduction in the morphological variations listed in example (17), reproduced below for convenience. Compare the ratios in (38) which are taken from Debrunner and Wackernagel 1930: 100, 103, 105-6.

On the other hand, although Middle Indo-Aryan was for some of these forms developing in the same direction, traces of the endings *-ā* and *-āsas* are found in Pali (cf. Mayrhofer 1951: 83, 84) and even as late as the "classical" Prakrits (cf. Pischel 1900: 254, 255, 258). Through its much

- (17) (a) *a*-stem Nom./Acc. pl. neut.: - \ddot{a} beside - $\ddot{a}ni$
 (cf. *yugā*: *yugāni* 'yokes')
- (b) *a*-stem Nom. pl. masc.: - $\ddot{a}s$ beside - $\ddot{a}sas$
 (cf. *devās*: *devāsas* 'gods')
- (c) *a*-stem Instr. pl. masc./neut.: -*ebhis* beside -*ais*
 (cf. *devebhis*: *devais* 'with the gods')
- (38)
- | | | | | | | |
|----|------------------|--------------|-----------------|-----------------|----------------|----------------|
| | - $\ddot{a}ni$: | - \ddot{a} | - $\ddot{a}s$: | - $\ddot{a}sas$ | - <i>ais</i> : | - <i>ebhis</i> |
| RV | 2 : | 3 | 2 : | 1 | 666 : | 543 |
| AV | 4 : | 3 | 24 : | 1 | 263 : | 53 |
| TS | | ∅ | | ∅ | | ∅ |

faster elimination of the alternative endings - \ddot{a} and - $\ddot{a}sas$, then, Vedic Sanskrit comes to DIVERGE from Middle Indo-Aryan.

The most striking divergence, however, consists in the fact that for the instrumental plural ending, Sanskrit generalizes -*ais* (except in one pronominal relic, *ebhis*), while all of Middle Indo-Aryan opts for -*ehi(m)*, the Prakrit counterpart of Skt. -*ebhis*. As Meillet (1910) suggested, this highly divergent pattern of generalization can be attributed to an anti-Prakrit attitude on the part of the speakers of Sanskrit. (The issue is developed further in Hock and Pandharipande 1976: 113.)

7. Retroflexion: Dialectology and diglossia. The aspect of Indo-Aryan diachronic phonology which has received the largest number of different explanations no doubt is the issue of retroflexion, both as a regular development and as a sporadic phenomenon, the so-called spontaneous retroflexion. I have treated the general issue, as well as some aspects of spontaneous retroflexion elsewhere; cf. Hock 1974a, 1975, 1979, 1984, as well as Hock 1986a: 77-9. Rather than repeating myself, I will confine my discussion to issues for which dialectological arguments (both geographic and social) are relevant.

7.1. There are a fair number of Vedic examples of the type (39), with retroflex where a cluster of *r* or *l* plus dental stop might be expected. Concerning their interpretation, there are two major views (disregarding attempts to identify some or all of these words as borrowings from non-Indo-Aryan languages). On one side are scholars like Wackernagel 1896: 167-71 (with earlier references) and Bartholomae 1896, who consider these words to be borrowings from Prakrit. On the other side, beginning with Fortunatov 1881, 1900, and continuing to the present day (cf. e.g. Burrow 1972, Hamp 1983), it is claimed that some or all of the forms are to be explained within Sanskrit, by means of a conditioned change whereby the

combination of PIE *l + dental yields a retroflex.¹⁷

(39) Skt. <i>jaṭhara-</i> 'womb'	: Goth. <i>kilpei</i>
<i>pāṇi-</i> '(inside of) hand'	: OEngl. <i>folm</i>
<i>paṭa-</i> 'cloth'	: Goth. <i>faḷpan</i>
<i>hāṭaka-</i> 'gold'	: OEngl. <i>gold</i>

Those who do not accept Fortunatov's Law argue that original *r* + dental also can yield retroflex, as in the examples in (40). Cf., e.g., Bartholomae 1894, 1896, Wackernagel 1896, Meillet 1903.

(40) Skt. <i>nīṇyá-</i> 'intimate, etc.'	: Gk. <i>nértēros</i>
<i>kāṭuka-</i> 'bitter'	: Lith. <i>kartus</i>
<i>vīkaṭa-</i> 'enormous'	: Skt. <i>vi-kṛta-</i> 'changed' Lith. <i>kūr-ti</i>
<i>kāṭá-</i> 'depth'	: Skt. <i>kartá-</i> 'cavity' Lith. <i>kert-ù</i>

Words like *kuru-*, *muhuh-*, and *kitava-* provide independent evidence that Rig-Vedic could borrow Prakritic words which had undergone the replacement of syllabic *r* by vowel. Examples like *vīkaṭa-* : *vīkṛta-* can be taken to follow the same pattern. But while *kitava-* exhibits the Middle Indo-Aryan option with DENTAL after the *r*, *vīkaṭa-* has the RETROFLEX alternative. Recall that this option exists especially in the northwestern Aśokan inscriptions, i.e., in the area closest to the northwestern basis of Rig-Vedic.

In putative words with original vowel + liquid + dental, to be sure, there is the difficulty that (i) we seem to find no early examples with retroflex geminates and (ii) in cases like *pāṇi-*, *hāṭaka-*, and *kāṭa-* there is an unexplained length. However, the coexistence of forms with and without length before the non-geminate retroflex is a problem also for those who advocate a Fortunatov's Law solution. Moreover, in the Prakrit-borrowing approach, the first of these two difficulties can be taken care of quite easily by assuming that the words in question reflect not vowel + liquid + dental, but the "0-grade" form with SYLLABIC liquid + dental. (Thus, *kāṭuka-* 'bitter' would go back to **kṛtu-*, not the *kortu-* suggested by Lithuanian.) And given Middle Indo-Aryan alternations like Pali *nīḍa-* beside *nīla-* 'abode' vs. Skt. *nīda-*, it is at least possible that the length plus single stop in forms like *kāṭa-* is a similar alternant for the short vowel plus geminate (*kaṭṭa-*) expected as the ordinary Prakrit counterpart of Skt. *karta-*.

The most fatal flaw common to Fortunatov's original "law" and to all later attempts to revive it is that they must assume the existence of

¹⁷ For the most recent review of the issue, see Collinge 1985: 41-6.

a Sanskrit dialect that retained the PIE contrast between *r and *l. As noted in section 4.9, this assumption is not supported by any independent evidence. Given the possibility of alternative, Prakritic, explanations for the forms in (39) and (40), as well as the independent evidence for Prakritic developments in early Sanskrit, Fortunatov's Law must therefore be considered highly dubious.

7.2. While many retroflexes that cannot be explained by straight-line developments from PIE can thus be attributed to borrowing from Middle Indo-Aryan or to phonological developments shared with Prakrit, there remains a certain residue of forms with "spontaneous retroflexion" for which such explanations do not seem to work.

A fair number of these can be explained in terms of special, notoriously sporadic developments, such as dissimilation, analogy, and morphological reanalysis.¹⁸ Thus, Thieme (1942) has argued that developments like the ones in (41a) can be accounted for as resulting from the dissimilation of the first of two dental stops. Wackernagel (1896: 172) has suggested that the final *ṭ* in the sacrificial or ritual exclamations *vaṣaṭ*, *śraṣaṭ* of (41b) may be analogical to *vāṭ*, another sacrificial exclamation. Perhaps, however, forms of this type should be explained as exhibiting something akin to tabooistic distortion. For not only does the final consonant exhibit an unexpected development (of retroflex to dental), also the medial retroflex sibilant (for *kṣ or *ś) is difficult to account for. Moreover, as (41c) shows, the Vedic literature offers a number of other examples of "ritualistic" distortion in sacrificial exclamations. These are especially common in the Brāhmaṇas of the Sāma-Veda. And as (41d) illustrates, they may affect not just sacrificial exclamations, but longer passages of ritual text. Finally, Wackernagel (1942) has explained the change in (41e) as resulting from generalization of the retroflex initial that would be expected after the preverb *nis-*.

However, a fairly large residue remains of forms like (41f) which defy any explanation of this sort.

- | | | | | | |
|----------|------|-------------------------|---------------------------------------|---------------|-------------------------|
| (41) (a) | RV | <i>atati</i> | : Class. Skt. | <i>aṭati</i> | 'wanders' |
| | Skt. | <i>patati</i> | : Magadhi | <i>paṭadi</i> | 'falls' |
| (b) | Ved. | <i>vāṣaṭ</i> | < <i>vākṣat</i> < * <i>vaṭṣat</i> (?) | | 'he will bring hither' |
| | | <i>śraṣaṭ</i> | < * <i>śroṣat</i> (?) | | 'he will hear' |
| cf. | | <i>vāṭ</i> , <i>vaṭ</i> | < * <i>vāṭṣ</i> | | 'he has brought hither' |

¹⁸ Hoffman (1961) adds the possibility of onomatopoeic motivations for retroflex consonants.

- (c) cf. *vauṣaṭ* < *váṣaṭ*
vaujhaḥ < *vauṣaṭ*
vauk < *vāk* 'speech' X *vauṣaṭ*
vét < *váṣaṭ* (X (a)vet 'knew'?)

(d) *o yirā yirā cā dākṣāsā iti yad girā girā ca iti brūyād agnir vaiśvānaro yajamānam gired* '(He should say) "o yirā yirā cā dākṣāsāi." If he said "girā girā cā..." Agni Vaiśvānara would swallow the sacrificer.' (Jaiminīya-Brāhmaṇa 1.175-8)

- (e) RV *dī-* : Class. Skt. *dī-* 'fly'
 cf. **nis-dī-* > **nī-dī-*

- (f) RV *naḷá-*, AV *naḍá-* : *nadá-* (1x); cf. Avest. *naḍa-* 'reed'
 Skt. *kuṇṭha-* : NPers. *kund* 'blunt'
piṇḍa- : Arm. *pind* 'lump/compact'

Bailey (1961, 1963) and following him, Burrow (1971) have proposed to see in examples of the type (41e)—as well as in many other instances of "spontaneous reflexion"—a "fission" in "colonial speech" of original dental into dental and retroflex. Bailey (1963) adds that "the cause of the fission may be beyond recovery but possibly contact with other people is suggested" by similar fissions in Ossetic.

Given the evidence of the Prātiśākhya on the pronunciation of the dentals, it may perhaps be possible to give an alternative and more satisfactory account for variations of the type (41e): As noted à-propos table II, the Prātiśākhya suggest that there were two varieties of Vedic Sanskrit, one in which the dentals were pronounced as pure dentals, the others in which they had "tooth-root" articulation. Now, the latter variety's articulation coincided (or nearly coincided) with the pronunciation of postdental/alveolar *r* in the second variety. This raises the possibility of the latter group mistaking the first group's dental stops etc. as POSTDENTAL and therefore RETROFLEX, much as the postdental/alveolar stops of modern English are mistaken as retroflex in Hindi and other South Asian languages.¹⁹

¹⁹ This account is reminiscent of Emeneau's bilingual scenario (1974 = 1980: 198). However, that analysis lacks the specific phonetic motivation postulated in the present account. Moreover, and more importantly, even with that phonetic motivation, one would have to ask why the dialectal Vedic postdental "tooth-root" segments were not rendered as alveolars, given that early Dravidian had a contrast between dental, alveolar, and retroflex stops. In early Indo-Aryan, on the other hand, there was a choice

While clearly speculative, this hypothesis seems to provide a better explanation than the mere label "spontaneous retroflexion," or Bailey and Burrow's unmotivated "colonial fission." In addition, it provides a final illustration of the extent to which the dialectology (both geographic and social) of early Indo-Aryan may be drawn upon to account for developments in diachronic phonology that otherwise are difficult, if not impossible, to explain.

only between dental and retroflex stops. Misassignments of postdentals could only yield retroflex segments.

References

- Allen, W. Sidney. 1953. *Phonetics in Ancient India*. London: Oxford University Press.
- Ammer, Karl. 1948. "Die *l*-Formen im R̥gveda." *Wiener Zeitschrift für die Kunde des Morgenlands* 51: 116-37.
- Arnold, E.V. 1893. "*l* in the Rig-Veda." In *Festgruß an Rudolf von Roth* (Stuttgart: Kohlhammer), pp. 145-46.
- . 1897. "Sketch of the historical grammar of the Rig and Atharva Vedas." *Journal of the American Oriental Society* 18: 203-353.
- Bailey, H.W. 1961. "Arya III." *Bulletin of the School of Oriental and African Studies* (University of London) 24: 470-83.
- . 1963. "Arya IV." *Bulletin of the School of Oriental and African Studies* (University of London) 26: 69-91.
- Bartholomae, Christian. 1894. "Zur *l*-Frage." *Indogermanische Forschungen* 3: 157-97.
- . 1896. "Beiträge zur altindischen Grammatik." *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 50: 674-735.
- Benfey, Theodor. 1859. "*Perna* in *pérnēmi* und sanskritisch *paṇ, paṇi* und verwandtes." *Zeitschrift für vergleichende Sprachforschung* 8: 1-20.
- Berger, Hermann. 1955. *Zwei Probleme der mittelindischen Lautlehre*. München: Kitzinger.
- Bloch, Jules. 1919. *La formation de la langue marathe*. Paris: Champion. (English translation 1970, Delhi: Motilal Banarsidass.)
- . 1929. "Deux adverbes moyen-indiens en védique." In *Donum natalicium Schrijnen* (Nijmegen & Utrecht: Dekker & van de Vegt), pp. 369-70.
- . 1934. *L'indo-aryan du véda aux temps modernes*. Paris: Adrien-Maisonneuve.
- . 1950. *Les inscriptions d'Asoka*. Paris: Les Belles Lettres.
- Bradke, P. von. 1886. "Beiträge zur altindischen Religions- und Sprachgeschichte." *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 40: 655-98.
- Burrow, T. 1955. *The Sanskrit Language*. London: Faber and Faber.
- . 1971. "Spontaneous cerebrals in Sanskrit." *Bulletin of the School of Oriental and African Studies* (University of London) 34: 538-59.
- . 1972. "A reconsideration of Fortunatov's Law." *Bulletin of the School of Oriental and African Studies* (University of London) 35: 531-45.

- Chatterji, Suniti Kumar. 1926. *The Origin and Development of the Bengali Language*. 3 vols. Calcutta: University Press. Reprinted 1970 (London: Allen & Unwin).
- . 1960. *Indo-Aryan and Hindi*. Second edition, Calcutta: Mukhopadhyay.
- Collinge, N.E. 1985. *The Laws of Indo-European*. Amsterdam: Benjamins.
- Debrunner, Albert. 1957. *Nachträge* [to the 1957 reissue of Wackernagel 1896]. Göttingen: Vandenhoeck & Ruprecht.
- , and Jacob Wackernagel. 1930. *Altindische Grammatik*, 3. Göttingen: Vandenhoeck & Ruprecht.
- Deshpande, Madhav M. 1978. "Genesis of Rgvedic Retroflexion: A Historical and Sociolinguistic Investigation." In *Aryan and non-Aryan in India*, ed. by M. M. Deshpande and P. E. Hook (Ann Arbor: The University of Michigan Center for South Asian and Southeast Asian Studies), pp. 235–315.
- . 1983. "Pāṇini as a frontier grammarian." In *Papers from the 19th Regional Meeting of the Chicago Linguistic Society*, pp. 110–116.
- Edgerton, Franklin. 1930. "Dialectic phonetics in the Veda: Evidence from the Vedic variants." In *Studies in Honor of Hermann Collitz*, reprinted 1969 (Freeport, NY: Books for Libraries Press), pp. 25–36.
- . 1946. *Sanskrit Historical Phonology*. New Haven: American Oriental Society.
- Emeneau, Murray B. 1966. "Dialects of Old Indo-Aryan." In *Ancient Indo-European Dialects*, ed. by H. Birnbaum and J. Puhvel (Berkeley: University of California Press), pp. 123–38.
- . 1974. "The Indian linguistic area revisited." *International Journal of Dravidian Linguistics* 3: 92–134.
- . 1980. *Language and Linguistic Area: Essays by Murray B. Emeneau*, selected and introduced by Anwar S. Dil. Stanford: Stanford University Press.
- Ferguson, Charles A. 1959. "Diglossia." *Word* 15: 325–40.
- Fortunatov, Ph. 1881. "L + dental im Altindischen." *Beiträge zur Kunde der indogermanischen Sprachen* 6: 215–20.
- . 1900. "Die indogermanischen liguiden im Altindischen." *Zeitschrift für vergleichende Sprachwissenschaft* 36: 1–37.
- Hamp, Eric P. 1974. "Reassignment of nasality in early Irish." *Papers from the Parasession on Natural Phonology*, Chicago: Linguistic Society, pp. 127–30.

- . 1983. "A revised amendment to Fortunatov's Law." *Indo-Iranian Journal* 25: 275-6.
- Hock, Hans Henrich. 1974a. "Historical change and synchronic structure: The case of the Sanskrit root nouns." In *Toward Tomorrow's Linguistics*, ed. by R.W. Shuy and C.-J. W. N. Bailey (Washington, D.C.: Georgetown University Press), pp. 329-42.
- . 1974b. "On the Indo-Iranian accusative plural of consonant stems." *Journal of the American Oriental Society* 94: 73-95.
- . 1975. "Substratum influence on (Rig-Vedic) Sanskrit?" *Studies in the Linguistic Sciences* 5.2: 76-125.
- . 1976. "Final weakening and related phenomena." *Mid-America Linguistics Conference Papers, 1975*, edited by F. Ingemann (Lawrence: University of Kansas. Department of Linguistics), pp. 215-59.
- . 1979. "Retroflexion Rules in Sanskrit." *South Asian Languages Analysis* 1: 47-62.
- . 1980. "Archaisms, morphophonemic metrics, or variable rules in the Rig-Veda?" *Studies in the Linguistic Sciences* 10.1: 59-69.
- . 1981. "Sanskrit causative syntax: A diachronic study." *Studies in the Linguistic Sciences* 11.2: 9-33.
- . 1984. "(Pre-)Rig-Vedic convergence of Indo-Aryan with Dravidian? Another look at the evidence." *Studies in the Linguistic Sciences* 14.1: 89-108.
- . 1985. "Regular metathesis." *Linguistics* 23: 529-40.
- . 1986a. *Principles of Historical Linguistics*. Berlin: Mouton de Gruyter.
- . 1986b. "Compensatory lengthening: In defense of the concept 'mora'." *Folia Linguistica* 20: 431-60.
- . To Appear. "Syllabic *r* and *l* in early Sanskrit: A critical study of the Prāṭisākhya and Śikṣā." *Phonetic Studies*, 1 (Mysore, India).
- , and Rajeshwari Pandharipande. 1976. "The socio-linguistic position of Sanskrit in pre-Muslim South Asia." *Studies in Language Learning* 1.2: 107-38 (Urbana: University of Illinois).
- Hoffmann, Karl. 1961. Review of the 1957 reissue of Wackernagel 1896. *Zeitschrift der deutschen Morgenländischen Gesellschaft* 110: 175-82.
- Mansion, Joseph. 1931. *Esquisse d'une histoire de la langue sanscrite*. Paris: Geuthner.
- Mayrhofer, Manfred. 1951. *Handbuch des Pali*, 1. Heidelberg: Winter.
- . 1953-61. *Kurzgefaßtes etymologisches Wörterbuch des Altindischen*, vol. 1 and 2. Heidelberg: Winter.

- . 1968. "Über spontanen Zerebralnasal im frühen Indo-Arischen." *Mélanges d'indianisme à la mémoire de Louis Renou* (Paris: Boccard), pp. 509-17.
- Mehendale, M.A. 1969. "Súre duhitá." In *Proceedings of the 26th International Congress of Orientalists* (New Delhi, 1964), 3.1: 105-8. Pune: Bhandarkar Oriental Research Institute.
- Meillet, Antoine. 1903. "Sur l'étymologie de l'adjectif védique *niṇyáh*." In *Album Kern* (Leiden: Brill), pp. 121-2.
- . 1910. Review of A.A. Macdonnell's *Vedic Grammar*. *Journal asiatique* 1910.2: 179-87.
- . 1912-13. "Des consonnes intervocaliques en védique." *Indogermanische Forschungen* 31: 120-5.
- Miranda, Rocky V. 1984. "Temporal compensation and phonetic change: the case of compensatory lengthening in Hindi." In *Papers from the Minnesota Regional Conference on Language and Linguistics* (Minneapolis: University of Minnesota, Department of Linguistics), pp. 91-104.
- Mishra, Vidhata. 1972. *Sanskrit Phonetics*. Varanasi: Chowkhamba Sanskrit Series.
- Murray, Robert W. 1982. "Consonant cluster developments in Pāli." *Folia Linguistica Historica* 3: 163-84.
- Pischel, R. 1900. *Grammatik der Prakrit-Sprachen*. (*Grundriß der Indo-Arischen Philologie und Altertumskunde*, 1: 8.) Straßburg: Trübner.
- Polomé, Edgar. 1983. "Bilingualism and language change as reflected by some of the oldest texts in Indo-European dialects." *NOWELE* 1: 9-30.
- Pott, August Friedrich. 1833. *Etymologische Forschungen auf dem Gebiete der indogermanischen Sprachen*. First edition, vol. 1. Lemgo: Meyer.
- Renou, Louis. 1956. *Histoire de la langue sanskrite*. Lyon: AIC.
- . 1957. "Introduction générale" [to the 1957 reissue of Wackernagel 1896]. Göttingen: Vandenhoeck & Ruprecht.
- Schmid, Wolfgang P. 1960. "Zum Problem *κῆṇoti*—*karoti*." *Indogermanische Forschungen* 65: 235-48.
- Schwarzschild, L.A. 1973. "Initial retroflex consonants in Middle Indo-Aryan." *Journal of the American Oriental Society* 93: 482-7.
- Tedesco, Paul. 1945. "Persian *čiz* and Sanskrit *kím*." *Language* 21: 128-41.
- . 1947. "Sanskrit *mālā*- 'wreath'." *Journal of the American Oriental Society* 67: 85-106.

- Thieme, Paul 1942. "Merkwürdige indische Worte." *Zeitschrift für vergleichende Sprachforschung* 67: 183-96.
- . 1955. Review of Burrow 1955. *Language* 31: 428-88.
- Varma, Siddheshwar. 1929. *Critical Studies in the Phonetic Observations of Indian grammarians*. Reprinted 1961, Delhi: Munshi Ram Manohar Lal.
- Wackernagel, Jakob. 1896. *Altindisch Grammatik*, 1. Göttingen: Vandenhoeck & Ruprecht.
- . 1926. "Kleine Beiträge zur indischen Wortkunde." In *Festgabe H. Jacobi* (Bonn, pp. 1-17). Reprinted in Wackernagel 1953.
- . 1933. "Indoiranica." *Zeitschrift für vergleichende Sprachforschung* 59, 19-30. Reprinted in Wackernagel 1953.
- . 1942. "Indoiranica." *Zeitschrift für vergleichende Sprachforschung* 67: 154-82. Reprinted in Wackernagel 1953.
- . 1953. *Kleine Schriften*, 1. Göttingen: Vandenhoeck & Ruprecht.
- Weber, Albrecht. 1851. "Analyse der in Anquetil du Perron's Uebersetzung enthaltenen Upanishad." *Indische Studien* 2: 1-111.
- Whitney, William Dwight. 1862. "The Atharva-Veda Prātiśākhya..." *Journal of the American Oriental Society* 7: 333-615.
- . 1868. *The Taittirīya-Prātiśākhya*. Reprinted 1973, Delhi: Motilal Banarsidass.
- Zimmer, Heinrich. 1879. *Altindisches Leben*. Berlin: Weidmann.

**THE EMERGENCE OF
THE SYLLABLE TYPES OF STEMS
(C)VCC(V) AND (C)VC(V)
IN INDO-ARYAN AND DRAVIDIAN:
CONSPIRACY OR CONVERGENCE?**

BH. KRISHNAMURTI

University of Hyderabad and Osmania University

1. **Introduction.*** M. B. Emeneau, the proponent as early as 1955 of an Indian "Sprachbund," made the following observation in his paper "The Indian linguistic area" ([1971], 1980: 175):

Other traits have been suggested as belonging to the Indian linguistic area but have not been investigated, usually because data and analysis are not yet under control. Examples are the phonological development of syllabic structure and phoneme distributions that is seen in proceeding from OIA to MIA, with an end result that is sus-

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The following sets of abbreviations are employed in this paper:

Indo-European Languages: A.=Assamese; Av.=Avestan; B.=Bengali; Bhoj.=Bhojpuri; G.=Gujarati; K.=Kashmiri; Ko.=Konkani; Ku.=Kumauni; L.=Lahnda; M.=Marathi; Marw.=Marwari; MIA=Middle Indo-Aryan; Mth.=Maithili; N.=Nepali; NIA=New Indo-Aryan; OIA=Old Indo-Aryan; Or.=Oriya; P.=Panjabi; Pa.=Pali; Pk.=Prakrit; RV=Rig Veda; S.=Sindhi; Si.=Sinhala; Skt.=Sanskrit; W.Pah.=West Pahari.

Dravidian Languages: Br.=Brahui; CDr.=Central Dravidian; Ga.=Gadba; Go.=Gondi; Ka.=Kannada; Ko.=Kota; Koḍ.=Koḍagu (Coorg); Kol.=Kolami; Kur.=Kuruḥ; Ma.=Malayalam; NDr.=North Dravidian; Nk.=Naikri; Nk.(Ch.)=Naiki of Chanda; Oll.=Ollari; PDr.=Proto-Dravidian; Pa.=Parji; SCDr.=South-Central Dravidian; Ta.=Tamil; Te.=Telugu; To.=Toda; Tu.=Tuḷu.