# 6. ETYMOLOGY AND DEVELOPMENT OF THE GERUND

Despite certain unsettled morphological problems as to details, it is quite generally accepted that the Old Indo-Aryan gerunds originate as petrified oblique cases of (defective) verbal nouns (cf. 1.5.B-). As such they are thought to have independent parallels in the form of (mainly) accusative and instrumental infinitives, supines and/or verbal adverbs in Iranian and other Indo-European languages. But due to their early morphosyntactic recategorization and paradigmatic isolation they cannot normally be formed by any synchronically productive derivational and inflectional processes. This accounts for why the Indian grammarians derived the gerunds by primary suffixes directly from the root (1.5.A) and why the formation of the gerunds has been subject to analogical influence from other non-finite verb-forms (mainly the past participle in **-tá-/-ná-** and the various infinitives).[1]

## 6.1. STEM FORMATIVES OF THE GERUNDS

The non-past gerund is the adverbial (originally perhaps cognate) accusative of a radically accented, strengthened and mostly compounded thematic deverbal action noun, showing the canonical form: preverb/noun/adverb+ $^{guṇa/vṛddhi}\sqrt{}$**-a-m** (cf. 2.1; 1.5.K).

The allomorphs of the past gerund have been much more difficult to explain. A basic problem is that there seems to be no unity as to either stem formative or case inflection for the two complementary types of formation (viz **-tv...** vs. **-(t)y...**). In fact, even the free variants **-tvâ**, **-tví**(***nam**) and **-tvâya** are apparently of diverse origin. But since a clue to the etymology of these forms must lie in this very suppletion with the obviously older and somewhat more transparent allomorphs in **-(t)yā/-(t)ya**, it might be worth while examining the latter type of formation first. The basic reason for assuming the latter type of formation to be more ancient than the **tv**-forms is that it has a formal cognate within the Old Iranian infinitival system, viz the less productive and functionally more archaic Avestan instrumental infinitive in **-yā** (> Khotanese Saka gerunds in **-i**).

---

[1] Whereas the past gerund has been influenced mainly by the past participle (cf. 2.1), the non-past gerund has been affected by the infinitive in **-am** (= the accusative of a zero-grade root noun), as seen in its sporadic tendency to palatalize a final velar, e.g. **utsárg-a-m/utsárj-a-m** (cf. Renou 1935, p. 381f. fn. 1).

## 6.1.A. THE ALLOMORPHS IN *-(T)YĀ/-(T)YA*

The derivational suffix underlying the compound gerund in ´-(t)**yā**/´-(t)**ya** has most successfully been identified with that of thematic neuter action (and agent) nouns in -(t)**ya**- < *-(t)**io**-, which ultimately descend from athematic root nouns, cf. (+)**dṛ́ś-ya**- 'view; to be seen' (< **dṛś-í**- 'sight') < (+)**dṛ́ś**- 'view; seeing'; **prati+í-t-ya**- 'attack; to be trusted' (< **práti+i-t-i**- 'approach') < ***prati+í-t**- 'going towards', cf. **artha+í-t**- 'going to the aim' (cf. Neisser 1906, p. 308ff.; Brugmann 1906 = Grundriss² II:1, p. 186; Brugmann 1911 = Grundriss² II:2, p. 189 § 188 Anm.; Debrunner 1954 = Ai. Gr. II:2, p. 778 § 633; p. 788 § 641; p. 804 § 649b; p. 824 § 662).

The gerundial forms and action nouns in question are compounded and have mostly the reduced accented grade of the root with an automatic '**t**-increment' ('**āgama**') after a short root vowel, conforming in this respect with agent root nouns and mostly also the gerundives in -(t)**ya**- (Debrunner 1954 = Ai. Gr. II:2, pp. 24-47). Compare also e.g. **vṛtra+há-tya/ā**- 'slaying of Vṛtra' (and **vṛtra+hán**- 'slayer of Vṛtra'), cf. **vi+há-tya/ā** 'having slain'; **vṛtra+tū́r-ya**- 'overcoming of Vṛtra', cf. **vi+tū́r-yā** 'having penetrated'; **mantra+śrú-tya-m** 'listening to advice' (RV 10.134.7 = 688), cf. **upa+śrú-tya** 'having overheard', etc.

External support for this etymological connection is provided by Avestan compounded instrumental infinitives in **-yā** < **-ya**- (6.4.B) and Latin and Old Irish weak compounded action nouns in ***-io**- (e.g. Latin **+i-tíu-m**, cf. Vedic **+í-tyā**; Lat. **au+spic-íu-m** vs. **specimen**; Old Irish **frecre**, (t)**acre**, **fócre** < ***+gair-io-n** vs. **gairm** < ***gar-s-mn** : **gairid** 'calls'; Hamp 1976, p. 10; 1986, p. 105f).

But the correspondence between these formations is not complete: The action (and especially agent) nouns in -(t)**ya**- may have the full grade of the root when the gerund has the reduced grade (e.g. **deva+yáj-ya**- 'sacrifice to the gods', but **+ij-yā-/+ij-ya** 'having sacrificed'). The semivowel of the suffix appears as vocalic after **-ā**- in the nominal and gerundival but not in the gerundial forms: **+déya**- (= ***dā-ia**-) vs. **+dâ-ya** (cf. Neisser 1906, p. 308ff.; Debrunner 1954 = Ai. Gr. II:2, p. 15ff.; p. 788 § 641). Apart from sporadic Vedic formations like **hasta+gṛ́hya** 'having grasped the hand' (cf. 2.2.A), the gerund is not compounded with nominal and adverbial stems. These possibly archaic synthetic formations are later recast as compounded non-past gerunds with stative aspect (e.g. **hasta+grâham** 'holding the hand'), or they are supplanted by the corresponding analytic constructions in accordance with the verbal rather than nominal character of the past gerund (e.g. **hástaṁ gṛhītvâ**).

These minor formal differences point to the early (probably Indo-Iranian) morpho-syntactic recategorization and paradigmatic isolation of the prehistorical 'gerund-infinitive' in -(t)**yā/a** < -(t)**ya**-. Apparently there has then been some secondary analogical influence

from either the **ta**-participles or the **ti**-stems, cf. Vedic **saṁ+pā-ya** 'having drunk all up', but Epic and Classical Sanskrit **saṁ+pī-ya** in agreement with **sáṁ+pī-ta-** and **sáṁ+pī-ti-** (cf. also **pī-tvā**). A comparable case would be the leveling of the Latin and Lithuanian **-tu**-supines with the weak **to**-participles and **ti**-abstracts (e.g. Lat. **da-tu-/da-tiō : da-tu-m/da-tū**; Lith. **mìlsz-ta-/mìlsz-ti : mìlsz-tū**, contrast OChSl **mlěs-ti : mlěs-tŭ**; Brugmann 1889 = Grundriss III:1, p. 305).[2]

### 6.1.B. THE ALLOMORPHS IN *-TV...*

The allomorphs in **-tv...** have traditionally been derived from feminine or masculine (originally neuter) and mostly simplex primary action nouns in **-tu-** (< *-**t-u**-), which appear widely in Indo-Aryan, Baltic, Slavonic, Italic and Celtic nominal and infinitival formations, and in Iranian, Greek (> **-tūs : tuos**) and Germanic nominal formations (Bopp 1816; Neisser 1906; Brugmann 1906 = Grundriss[2] II:1, p. 440f.; Benveniste 1935a, pp. 57, 71; 1948, p. 65ff.; Renou 1937, pp. 1f., 5ff., 20; Schwyzer 1939, p. 507; Kuiper 1942, pp. 195, 213; Debrunner 1954 = Ai. Gr., p. 652ff. § 484ff.; cf. 1.5.B, 6.1.A). The **tu**-formative appears sporadically also in agent nouns (mainly in the Ṛgveda, e.g. **su/dur+mántu-** 'easy/difficult to know', **duṣṭarítu-** 'irresistible'; Renou 1937, p.

[2] A more popular but less convincing theory is that the forms in **-(t)yā/a** are derived (directly) from nominal or infinitival **i**- and **ti**-stems (Brugmann 1892 = Grundriss II:2, p. 632ff.; Whitney 1889, p. 357 § 993a; Macdonell 1907, p. 412 § 589; Debrunner & Wackernagel 1930 = Ai. Gr. III, p. 34f.; Bloch 1934, p. 284; Renou 1952, p. 374; cf. also the discussion in Jeffers & Kantor 1984, 1.5.0). The main problem with this theory is that **i**- and **ti**-stems are not synchronically in complementary distribution with each other, cf. **dṛṣ-ṭi-/dṛś-i** 'view' (> **dṛś-áy-e** 'to see') vs. **+dṛś-ya** 'having seen', **dṛś-ya**- 'to be seen' (never **+dṛṣ-ṭya**[-]); **prati+ṣṭhi-ti-/prati+ṣṭhi**- 'standing firm/withstanding' vs. **prati+ṣṭhâ-ya** 'having established oneself' (never **prati+ṣṭhi-tya**[-]). Moreover, **i**-stems are mostly simplex as against the gerund in **-ya** and thus not suppletive with either **ti**-, **tu**- or **tva**-stems, although the discrepancy is somewhat alleviated by the (secondary) tendency to suppletion between **-tu**- (for simplexes) and **-ti**- (for compounds) at least in Indo-Iranian (Liebert 1949, pp. 161, 171). It has no bearing on the formation of the gerund that **-(t)ya**- may be a thematic extension of **-i-/-ti**- (< *-(t-)i-). Note also the change of accent: **+dṛśya** 'having seen' vs. **dṛśi**- 'view' (cf. Brugmann 1906 = Grundriss[2] II:2, p. 185; Debrunner 1954 = Ai.Gr. II:2, p. 778 § 633b; p. 804 § 649c).

As far as the suppletive tendency between **-ti**- and **-tu**- is concerned, Benveniste (1948, pp. 65ff., 105ff.) argued that it follows from the different semantics of the formations: action nouns in **-tu**- are simplex because they (originally) denote the verbal action in its least marked form, viz as a potential 'subjective' activity, whereas action nouns in **-ti**- may be either simplex or compounded, because they denote the verbal activity as an accomplished 'objective' fact, cf. **gātu**- 'ability to move; motion' vs. **gati**- 'the act of going, moving; motion'; Il. 19.206 βρωτύς '(the potential act of) eating' vs. Il. 19.210 βρῶσις 'food'. As long as this distinction is maintained, **tu**-derivatives rather than **ti**-derivatives would be used in verbal complements or recategorized as 'infinitives'. This semantic differentiation parallels that between agent nouns in *-**tor** ("auteur d'un acte") vs. *-**ter** ("agent voué à une fonction"), cf. **dâtā vásūni** '(one) giving riches' vs. **dātâ vásūnām** '(a) giver of riches'.

22), and extended with the thematic suffix, it forms mainly agent nouns and gerundives in **-tva-**, e.g. **hán-tvá-** (Avestan **ją-θwa-**) 'to be slain'.

In fact, the **tv**-gerunds have alternatively been derived from such thematic extensions of the **tu**-stem, a possibility admitted by Brugmann (ibid.) and recently advocated by Hamp (1986; cf. Benfey 1852a, Saussure 1878, Gune 1913). Inasmuch as the suppletive allomorphs in **-(t)yā/a** are derived from thematic deverbal action nouns, a parallel formation of the **tv**-gerunds from zero-grade thematic acton nouns in **-tva-** would appear quite natural.

A major difficulty for any one of these theories are the peculiar prosodic features and suppletion of the **tv**-forms, if compared with the said infinitival and nominal formations. Nevertheless, also the infinitives display in the Ṛgveda some correlation between accent, apophony and compositional status. Durr (1951) has shown that with some exceptions (mainly for the infinitives) both the infinitives and gerunds (in contrast with e.g. the past participle) have the reduced accented form of the root if compounded, but not so when simplex, cf. **saṁ+dṛ́ś-e** 'to view' and **saṁ+gá-tya** 'having come together' vs. **dṛś-é** 'to see', **gán-tave** 'to go' and **dṛṣ-ṭvā́** 'having seen'.

In other words, compounded infinitives and gerunds are apophonically and prosodically more constrained than simplex ones. Moreover, the constraints are strictest for the gerund in **-(t)ya** (which must originally have been limited to compounds, as supported by Avestan), a little less strict for the gerund in **-tvā́/-tví**, and least strict for the various infinitives. Exceptions include the tendency to (retain) preverbal accent for compound infinitives (e.g. **ní+kar-tave**, cf. **ní+kṛ-ta-** vs. **ni+kṛ́-tya**) and strong root grade for roots in **-ā-** for both infinitives and gerunds (e.g. **pra+khyái** *pro* ***pra+khyé** and **abhi+khyā́ya** *pro* ***abhi+khyíya**).

The very fact that the suppletion of allomorphs is better observed by the gerund than the infinitive or action nouns points to its early formalization and functional specialization, as also reflected in its temporal differentiation and strictly verbal rection (contrast the vacillation in rection of the Vedic **-tu**-infinitives).

With additional data from Celtic and Latin, Hamp (1976, p. 10f.; 1986) has shown that complementary distribution in the formation of verbal nouns goes back to Indo-European, being an indirect result of Wackernagel's Law and the Indo-European rules of enclisis, as it reflects analogically the prosodic difference between the unaccented simplex finite verb vs. the preverbally accented compound finite verb of a main clause. In the non-finite and nominal systems this formal distinction could only be implemented by deriving the simplex and compound forms in different ways: compound verb bases were then 'nominalized' by simply affixing a thema or other minimal (including zero) suffix to the unaltered base or to its zero-grade (cf. the prevailingly compound status of root infinitives), while simplex non-finite verb-forms received a (stronger) nominalizing mark, either an extended suffix or apophony or both. In other words, simplex verbal nouns tended to be expanded, extended or strengthened in relation to compound ones, which situation is also reflected in Celtic and

Latin.

Hamp then postulates the following Indo-European suppletive derivational suffixes underlying *i.a.* Sanskrit gerundial forms: **-zero* ***-tuó-m****, for simplexes: *-zero* ***'-io-m*** *for compounds*. This derivation would parallel that of the allomorphs in **-(t)yā/a** and could be defended on the basis of Slavonic anf Germanic zero-grade **tva**-derivatives (cf. Russian **šitvo** 'sewing' < ***syūtwom** and Gothic **waurstw** "Werk" < ***wṛg-s-twom**). A problem is that the Indo-Iranian **tva**-derivatives tend to have the strong root grade (cf. Avestan **stao-θwə-m** 'praising', **dąs-tvā-** 'teaching'; see Debrunner 1954 = Ai. Gr. II:2, p. 713 § 527a).

In support of this etymology Hamp points to the mainly strong root grade of **tu**-derivatives, the paucity (i.e. alleged preemption) of primary action nouns in **-tvá-**, and the difficulty of explaining **-tvâya** as a pleonastic formation from **-tvâ** + **-ya** (cf **-ās-aḥ** nom. pl. for **-āḥ**, and **-su-ṣu** loc. pl. for **-su**, etc.).

These counterarguments are not unassailable, however. Though **-tvâ** could formally be the instrumental of **-tvá-**, it is on semantic grounds unlikely that the gerund in **-tvâya** should be a dative form, since dative infinitives and verbal nouns have specifically final sense. It is only toward the later Middle Indo-Aryan period that the (final) infinitive and (non-final) gerund tend to coalesce with the loss of the infinitive as a distinct category (cf. Subhadra Sen 1973, p. 93).[3]

Moreover, **-tvâya** is not a productive gerundial suffix: it occurs less than a dozen times in the literature, being almost wholly restricted to the tenth book of the Ṛgveda (2.2.A).[4] As for the paradoxical suffixation of **-ya** to simplex verbs, it may be said that **-ya** is not actually suffixed to a simplex verb, but to the gerundial form of a simplex verb.

Concerning the allegedly strong root grade of **tu**-derivatives, there is sufficient evidence for (esp. secondary) zero-grade and oxytone **tu**-derivatives in Indo-Aryan (cf. Vedic **ak-tú-** 'ointment', **cikit-v-á** 'with consideration', **kṛ-tv-ya-** 'active' vs. **kar-tav-yà-**, Cl. [Harivaṁśa & Purāṇas] **kṛtvī-** 'personal name') and other Indo-European sub-branches (cf. Greek κλει-τύς : κλι-τύς; Lith. **lẽ-tu-s** : **ly-tù-s**; PIE ***pṛ-tú-/por-tu-** 'ford')[5] to allow us to postulate both barytone strong and oxytone weak **tu**-stems as ultimately deriving through paradigmatic apophony, allegedly reflected in the prehistorical infinitival-gerundial **tu**-paradigm: **gánt-tu-m** : **ga-tv-á** (Brugmann 1889 = Grundriss II:1, p. 302; 1906 = Grundriss[2] II:1, p. 441; Debrunner & Wackernagel 1930 = Ai. Gr. III, p. 140;

[3] Cf. the northwestern dialects of (Dardic) Pashai, which use the oblique case in **-ka** of the infinitive also as gerund: **karka** '[be able, begin, etc.] to do; by doing; having done' (Morgenstierne 1967, p. 202).

[4] The form in **-tvâya** apparently survived in the northwest, as it seems to have a reflex in the south-western dialects of Pashai: **-tawai** < ***-tvâyá**, with double accent as in the infinitive in **-táwái**, e.g. **mam ma:ši-m *han-tawai*** (or, **hanwač-am**) **jhāiwač-am** (51,7) 'having killed my wife, I left her', Morgenstierne 1967, p. 136f).

[5] Cf. also Old Prussian dative infinitives in **-twei** (Beekes 1972, p. 33; Stang 1966, pp. 447f., 215).

Renou 1937, p. 2; Debrunner 1954 = Ai. Gr. II:2, p. 663 § 488a; p. 666 § 490a; Kurylowicz 1968, p. 38ff.; cf. 1.5.I).[6]

In addition, there appear to have been both hystero- and proterodynamic (t)**u**-stems, although the latter type seems mosly to be secondary in Sanskrit, contrast Vedic **páś-u-** n. 'cattle' : **paś-v-áḥ**, **pi-tú-** m. 'nourishment' : **pi-tv-áḥ**, **krá-tu-** m. 'ability' : **krá-tv-ā**, **krá-tv-aḥ**, as against Cl. Skt. **paś-u-** m. : **paś-ó-ḥ**, **krá-tu-** m. : **krá-tu-nā**, **krá-to-ḥ**, etc. (Renou 1937; Kuiper 1942; Beekes 1972; Burrow 1973, p. 246).

If the gerund in **-tvā́** once belonged to the same prehistorical paradigm as the **-tu-** infinitives, this paradigm must have had a shifting accent and hysterodynamic inflection before the separation of the gerund (Benveniste 1935a, p. 57; Kurylowicz 1968, pp. 38, 40; Kuiper 1942, pp. 195, 213; Beekes 1972, p. 33; cf. 1.5.I). On the other hand, the gerund may have been influenced by the weak and oxytone adjectival **ta**-participle or the originally mostly weak and oxytone **ti**-stems (cf. **gatá-**, **gáti-** : **gatvā́** : **gántum/ gantáve**; cf. the Latin-Lithuanian parallel, see 6.1.A), while one may also point to the general tendency to final accent of participially and nominally derived adverbs (cf. **drávat-** 'running', but **dravát** 'quickly'; **sánāt** 'old, abl.', but **sanāt** 'from of old'; **dakṣiṇā́** 'to the south', **raghuyā́** 'swiftly', etc.; Macdonell [1916] 1986, p. 464; Whitney 1889, p. 409). Recategorization is marked prosodically, inflectionally or by paradigmatic preemption also in infinitival formations.

A major problem is the northwestern allomorph in **-tvī́**, which cannot be derived from the **tu**-stem, except over a rather poorly attested **i**-extension of the latter (Kuhn 1844, p. 114; Bader 1977, p. 111), or in analogy with **-tvā́** from a lost gerund in ***-tī-** < **-ti-** (Blankenstein 1907, p. 106; Debrunner 1954 = Ai. Gr. II:2, p. 654, § 484b β; Hamp 1986, p. 104). But if **-tvā́** has been reanalyzed as deriving from **-tva-**, the variant **-tvī́** could principally be based on a feminine form of **-tva-**, i.e. **-tvī-**.

Whether **-tvī́** is derived from ***-tvī-**, ***-tu-i-** or ***-tī** < **-ti-**, it is a dialectal innovation that presupposes the non-northwestern variant in **-tvā́**. Synchronically it may be compared with other inflectional or derivational variants with **-ā-** : **-ī-**, e.g. RV **śṛ-ṇī-hi** vs. SV **śṛ-ṇā-hi**, TS **tejas-vī** < **tejas-vin-** vs. MS **tejas-vān** < **tejas-vat-**, MBh **yaj-vin-** vs. Vedic and Cl. Skt. **yaj-vat-**, RV **ci-kit-vít** vs. ***ci-kit-vat**, cf. **cikitví/án+manas-**. (Bloomfield & Edgerton 1932, p. 280f.; Debrunner 1954 = Ai.Gr. II:2, p. 916 § 732f.; Bader 1977, p. 106ff.).[7]

It has sometimes been claimed that the variant in **-tvī́** is older than the one in **-tvā́**, as it is usually replaced by the latter in loans from the Ṛgveda (Bloomfied & Edgerton 1932, p.

[6] Speyer (1896, p. 68) suggested that the opposition between the "aorist" value of the **tv**-gerund vs. the "presential" value of the **-tu**-infinitives is connected with the apophonic difference (cf. Renou 1937, p. 2 fn.). But the problem is that none of the zero-grade infinitives or verbal adverbs shows any signs of temporal differentiation, cf. **śruṣ-ṭī** 'in service; willingly'.

[7] Cf. also the eastern Aśokan and Ardhamāgadhī present middle participles in **-mīn/ṇa-** for **-māna-** (Bloch 1950, p. 80; Burrow 1973, p. 46).

281). But the fact is that the former variant is neither relatively more common than **-tvâ** in the early strata nor less common in the younger strata of the Ṛgveda (cf. 2.2.A). In the generally quite late tenth book of the Ṛgveda, the relative frequency of **-tvî** increases more than the relative frequency of **-tvâ**, although in the almost equally late first book, **-tvâ** shows higher relative frequency than **-tvî** (cf. 2.2.A).

This proves that **-tvî** became at quite an early stage a popular quasi-archaism (cf. the nom. pl. ending **-ās-aḥ**) in the Ṛgveda, while the two variants coexisted in most Ṛgvedic dialects from the very start (cf. the juxtaposition of forms in RV 5.53.14ab: **hitvâ / vṛṣṭvî** = ex. 75). Reflexes of **-tvî** occur in the northwestern Aśokan inscriptions at Shahbazgarhi and Mansehra side by side with **-t(t)u** < **-tvâ**, as they do in the Gāndhārī Dhammapada (cf. Brough 1962, p. 117 fn. 1), and perhaps in Dardic Sau: **-iwó** < ***-ituwā** ? < **-itvā**, e.g. **eṭhiwó giné** 'having taken, bring!' (Buddruss 1967, p. 57). The fact that **-tvî** alone continued in the conservative Niya Prakrit (Burrow 1936, p. 420), (western) Apabhraṁśa, and some of the Dardic and Nuristani languages does not entail that it was older than **-tvâ**, unless it can be proved that it originated independently of **-tvâ** in proto-Nuristani.

On the other hand, **-tvî** must be connected with Vedic ***-tvīna(m)** (P 7.1.48; Jaina Apabhraṁśa **-(e)ppiṇu** > late western Apabhraṁśa **-(e)vinu**), which seems to exhibit the (reanalyzed) 'adverbial' element **-nám** (cf. **nūn-ám** 'now', **nānā-nám** 'variously'; Whitney 1889, p. 408 § 1109a; Burrow 1973, p. 283), or the enclitic suffix **-na** optionally added to the secondary personal endings in **-ta**, **-tha** (2. pl.) in the Veda.

If, on the other hand, **-tvî** is derived from ***-tu-i/ī-** (cf. Lat. **-tuī(-to)-** in **fortvītus**, etc.), then the extension in **-tvīnam** could perhaps be compared with that of Old Prussian **sā-tu-i-nei** "sättigst" < ***sātui-** (Bader 1977, pp. 111, 119 & fn. 224, fn. 276). But apart from the long vowel in **-tvīnam**, a problem would then be the corresponding Middle Indo-Aryan variant ***-tvānam**, which can only be analyzed as **-tvā(+nam)**.

## 6.2. INFLECTIONAL ELEMENTS

The suffix of the non-past gerund in **-am** contains the accusative ending **-m**, which is probably also to be recognized in Greek (verbal) adverbs in **-δον**, **-δην** and **-ον**, Latin verbal adverbs in **-tim**, Oscan-Umbrian infinitives in **-um**, and perhaps young Avestan gerunds in **-am**, **-tīm** (Delbrück 1893 = Grundriss III:1, p. 604f. § 255; Brugmann 1911 = Grundriss² II:2, p. 680f. § 558; Benveniste 1935c). A comparable formation is at hand in the Khotanese Saka accusative infinitives in **-danu** < **-tanam** (Konow 1932, p. 59; Bailey 1958, p. 147; Emmerick 1968, p. 119f.).

The past gerund in **-tvâ** has traditionally been etymologized as the instrumental in **-ā**

from an action noun in **-tu-** (cf. 1.5.B), alternatively **-tva-**, the ending reflecting either PIE *-**eH**$_1$ or (in the latter case) *(-**o**/**e**-)-H$_1$. As an instrumental of the (prehistorical) infinitival **-tu**-stem it could then explain the lack of an instrumental **-tu**-infinitive, while this derivation would also be consistent with the origin of the gerund in **-(t)ya** as an instrumental infinitive.

Analogically, the variant in **-tví** has been explained as a lengthened locative of **-tu-** (Bartholomae 1889, pp. 227, 239; Macdonell 1907, p. 412 § 589), but it is not possible to explain it thus on the basis of any of the Indo-Aryan or pre-Indo-Aryan locative formations of either **u**- or **a**-stems (cf. 1.5.I). It could principally be the Vedic locative of an **ī**-stem, but this derivation is unnecessarily complicated, seeing that the regular instrumental from such a stem already gives the desired form. Even less probable is Renou's (1952, p. 313) theory that **-tví** is an irregular lengthened locative for **-tvi** (cf. **camvî** *pro* **camvi** < **camū-** f. 'cup'), as this would require not only the accent to have changed, but also the underlying stem formative to have been **-tū-**, for which there is no support. (The instrumental of **-tū-** would be **-tu(v)ā**, but **-tvá** is never to be read thus in the Ṛgveda, cf. Arnold 1897, p. 247).

Because of the difficulty of deriving **-tvá** and **-tví** along parallel lines from **-tu-**, Burrow (1949, p. 49; 1973, p. 172) has suggested that they are uninflected adverbially used extended nominal stems in **-tu-ā-** and **-tu-ī-** (cf. Old Church Slavonic **gonitva** 'persecution' and Gothic **saliþwōs** 'lodging'). This together with the optional addition of the extension **-nam** would conform with the hypothesis that also **-(t)ya** is an uninflected form (cf. Debrunner 1954 = Ai. Gr. II:2, p. 788 § 641b), but uninflected or 'case-less' forms exist only in compounds, while the Avestan cognate infinitives in **-yā** are clearly instrumental forms. The optional addition of the element **-nam** to the gerundial forms may simply be explained by the paradigmatic isolation and recategorization of the gerund.

In analogy with **-tvá**, also the forms in **-(t)yā/-(t)ya** have mostly been explained as instrumentals (1.5.B, 1.5.I). But only the longer variant can be a regular Vedic instrumental in **-ā** < *-**ō**/**ē** < *-**o**/**e**-H$_1$ (cf. Beekes 1985, p. 193) from **-(t)ya-** or (as is less likely) **-ti-/-i-**. The assumed shortening of the case ending in **-(t)ya** could then be the reflection of an old laryngeal sandhi: ***aH** => **a**/_## (Kuiper 1955, p. 259ff.) or it may have followed upon the recategorization of the form, being furthermore aided by the prosodic asymmetry due to the radical accent and preverb (Bopp 1816, p. 55, cf. 1.5.B; Brugmann 1906 = Grundriss$^2$ II:2, p. 189 § 188 Anm. 1).

It has also been suggested that **-(t)yā** is an analogical and/or originally only metrically conditioned lengthening of **-(t)ya** (Benfey 1879; cf. 1.5.E). If so, it would either be a kind of *casus absolutus/componens* (Debrunner, ibid.), or it would contain the pre-Vedic instrumental ending *-**e**(H$_1$) (cf. Latin **ped-e**), in which case it would have to derive from an **i**-stem (Debrunner & Wackernagel 1930 = Ai. Gr. III, p. 35; Haudry 1979, p. 35). But while that derivation has already been ruled out in 6.1.A, neither of these explanations

could account for the large residue of cases of metrically unmotivated -(t)yā.

The most probable and consistent theory that emerges from the above considerations is then that the basic allomorphs of the past gerund derive as petrified and reinterpreted instrumentals of suppletive verbal nouns in -(t)ya- (related to the Iranian yā-infinitives) and -tu- (related to the Indo-Aryan -tu-infinitives, which were morphologically leveled and fully recategorized only after the recategorization and isolation of the gerund). The simplex form(s) in -tvā (etc.) were created specifically to supplement the compound form in -(t)yā in order for the new non-finite category of the past gerund to be formally complete. But had it not been for the functional recategorization of the gerund in proto-Indo-Aryan, there would have been no need to complete the system just to create yet another 'infinitival' subsystem.

This hypothesis is based mainly on morphological considerations. It is not very well supported semantically or even syntactically, because it implies that the original function of the past gerund was that of an instrumental adverbial adjunct or complement, which is still the case in Avestan (cf. 6.4.B) and in the Indo-European structural parallels. Although a better starting point than an accusative, dative or locative action noun, an Indo-European instrumental action noun (expressing accompaniment or attendant circumstance, cf. Haudry 1970, p. 47) cannot function as a temporal/circumstantial qualification expressing antecedence of action, except by secondary parasitic inference on the basis of a causal implicature (cf. 1.5.B).

The problem is that there are hardly any traces of the assumed original modal-instrumental value of the gerund even in the oldest Indo-Aryan documents. The gerund must have been functionally reinterpreted long before the composition of the oldest Ṛg-vedic hymns, but the question is why and how. The syntactico-semantic reinterpretation and simultaneous or subsequent formal complementation of the prehistorical gerund must have arisen out of a need to create a specifically indeclinable non-finite category for backgrounding and sequencing clauses in additive-sequential and temporal linkage. As such it came to form a subsystem with the perhaps more recent and altogether less productive accusative non-past gerund, which has independent structural and functional parallels elsewhere in Indo-European (cf. 6.4).

The contructional parallel **alam** + gerund/instrumental has occasionally been adduced to support the instrumental derivation of the gerund syntactico-semantically (Bopp 1816, p. 52; Debrunner 1954 = Ai. Gr. II:2, p. 653 § 484a). This comparison is, however, a precarious one, since the constructions do not seem to be synonymous (cf. 4.4.C and 3.3.C). Moreover, if the said gerundial construction was a genuine relic from the time when the gerund functioned as an instrumental infinitive (or instrumental action noun with verbal rection), it is curious that it is not documented in the Veda and that it disappeared already in the early Middle Indo-Aryan period (Hendriksen 1944, p. 143; Debrunner 1954

= Ai. Gr. II:2, p. 654 § 484b). Judging by the opacity of the allomorphs of the Old (and Middle) Indo-Aryan gerund, especially -(t)**ya**, -**tvī** and *-**tvīnam**, the putative instrumental origin of the gerund was more or less irrelevant for the development of this constructional parallel.

On the other hand, it cannot be denied that the gerund or its analogues have often been associated with the instrumental case not only in Indo-Aryan but also in many other languages of north(west)ern South Asia (cf. especially Dardic Torwali, where the gerund is formed by adding the postposition of the instrumental (**te**) to a verbal noun similar to the present base, e.g. **beš-te mē saran buā** 'having gone, look at this girl!' = 'go and look at this girl!'; Grierson 1929, pp. 83, 127 text III.31). Instrumental and (yet) basically past gerunds with similar functions as the Old Indo-Aryan gerund reoccur also in some North Munda, Tibeto-Burman and Dravidian (here mostly with non-preterital sense) languages, being furthermore paralleled in Central Asian Altaic (Ramstedt 1952, p. 132; Brockelmann 1954, p. 243 Anm. 1) and Uralic. But before exploring these connections, let us take a brief look at the later developments of the Indo-Aryan gerund(s).

## 6.3. MIDDLE AND NEW INDO-ARYAN DEVELOPMENTS

The past gerund continued as a productive category in some form or other in Middle and (excepting Romany) New Indo-Aryan. It is also found (though not as often used especially in additive-sequential linkage) in the archaic Nuristani languages, its reflexes being then mostly based on the form in -**ya** or, more rarely, the Ṛgvedic/northwestern form in -**tvī** (cf. Kati, Ashkun, Waigali and Khowar [Dardic] -**ti**, perhaps Kashmiri [Dardic] -**th**[8]). Where absent or of restricted use, its place is taken mainly by finite asyndetic structures and (to a lesser extent) participles, cf. Torwali **yā mō-bižī tes-ki mubārakī de** 'come, let us go to him (and) let us give him our congratulations' (Grierson 1929, p. 113 text I.36), contrast **beš-te mē saran buā** (see 6.2; cf. also Morgenstierne 1949, p. 245).

The non-past gerund, on the other hand, was lost as a productive formation already in the Vedic period, due to the overlapping present participle and the possibility of expressing its sense by repeating the past gerund. It has continued only in some Nuristani languages (e.g. Kati = Bashgali; cf. Konow 1911, p. 38).[9]

[8] Cf. Konow (1911, p. 38); Morgenstierne (1929, p. 223; 1947a, p. 27; 1949, p. 243; 1944, p. 294ff; 1967, pp. 136ff., 297); Edelman (1983, pp. 92, 126, etc.). Note, however, that Tedesco (1923, p. 383 fn. 37) preferred to derive Kashmiri -**it**$^{h}$ from **tvā** over MIA -**ttā**. The Apabhraṁśa form in -**ppi** (> -**vi**) shows a western and central rather than northwestern (esp. Dardic or Nuristani) treatment of the cluster -**tv**- (cf. Turner [1926] 1975, p. 262), implying that -**tvī** was not confined to a single dialect area in the (north)west (cf. Schwarzschild 1956).

[9] For the history of *ṇamul*, see Renou (1935, p. 376ff.); cf. also Edgerton (1953, p. 171).

## 6.3.A. MORPHOLOGICAL CHANGES

The most conspicuous morphological change in the formation of the gerund after the (early) Old Indo-Aryan period was the gradual loss of allomorphic suppletion, as partly conditioned by the loss of the Vedic accent and tendency to uniform symbolization. As for the specific formations, there has been secondary morphological leveling with the present stem (more rarely the infinitive; cf. 2.1-2.2), while also some new or heavily transformed gerundial suffixes have appeared on the scene.

Some of the new suffixes seem to go back to unattested Vedic dialectal variants. E.g. Pali and Buddhist Hybrid Sanskrit **-tv/uāna** < ***-tvāna(m)**[10] with *svarabhakti* (cf. Śaurasenī, Māgadhī, Ḍhakkī **gadua** < ***gatva** < **gatvā**, **kadua** < **kṛtvā**) and **-iyāna** (cf. Ardhamāgadhī **-yāṇa[ṁ]**) < ***-yāna(m)** in analogy with ***-tvāna(m)**. Similarly, Western Apabhraṁśa **-vi(ṇu)** < **-(e)ppiṇu** < ***-(i)tvīnam**; Ardhamāgadhī **-ccā(ṇa[ṁ])** < **-tyā-(+nam)** in analogy with **-tvā** or < **-tyā(+nam)** (Schwarzschild 1956, p. 111f.; Norman 1958).

The peculiar but common Middle Indic form complex **-(t/d)ūn/ṇa(ṁ)**, occurring in e.g. Mahārāṣṭrī, Śaurasenī, Ardhamāgadhī and (probably) once in the Aśokan inscriptions at Bhabra, has usually been connected with ***-tvāna(m)** by a 'Middle Indic *saṁprasāraṇa*-alternation' (cf. Pischel 1900, p. 395; Schwarzschild 1956, p. 113). But as such this type of alternation would be an isolated case (cf. Berger 1955, p. 78). Recently Sakamoto-Goto (1987) has discussed these problematic forms, deriving them over ***-tū** or **-tu**, as attested in the Aśokan inscriptions (except at Girnar).[11] The latter form (**-tu**) she explains as being the contamination of **-ttu** with the infinitive in **-tum** (which is sometimes used also as a gerund in Ardhamāgadhī, Jaina-Mahāraṣṭrī, Māgadhī and Buddhist Hybrid Sanskrit), cf. **kātūnaṁ : kātuṁ** vs. **kattā/kattu**. The long vowel would then be in analogy with forms like **-ttā(naṁ)**. Note, however, that the gerund in **-tu**, which may also represent **-ttu**, could principally be a shortened instrumental in **-tu** < ***-tū** (cf. **-tūnaṁ**) < ***-tu-** (cf. **jā-tū** 'by nature', Lat. **nā-tū**, Avestan **xratū/xraθwā** < **xratu-** = Skt. **kratu-**).

The Ardhamāgadhī and Jaina-Mahāraṣṭrī form in **-ttu** (cf. also Pali **daṭṭhu**) was explained by Pischel (1900, p. 391 § 577) as deriving from the infinitive in **-tum**. A simpler explanation has now been offered by Sakamoto-Goto (ibid.), according to which

[10] Cf. also southwestern and southeastern Pashai **-ta(n)** and **-ta/ān** with **t** < **tv** (Morgenstierne 1967, p. 297). Bloch (1979, p. 271) suggested that the Marathi and Gujarati gerunds in **-tāṁ[nā]** (probably the locative or dative plural of the present participle) might be connected with Ardhamāgadhī **-ttāṇaṁ**, but syntactically and semantically they correspond to the oblique present participles of Hindi, Bengali, etc.

[11] Previously **-tu** has been explained as a shortened *saṁprasāraṇa*-alternant of **-tvā** (Bloch 1950, p. 78f.; Edgerton 1953, p. 177) or (as is less probable due to the lack of a final nasal) recategorized infinitive in **-tum** (Renou 1935, p. 390f.; Sen 1960, p. 178). This form seems to appear with passive sense in the Niya Kharoṣṭhī inscriptions, e.g. **viṁñav-etu** "it having been reported" (F. Thomas 1934, p. 49 fn. 5).

this allomorph has developed phonologically from **-tvā** by the shortening and subsequent labialization of the final **-ā** before the regressive assimilation of **-v-** with **-t-**, thus: **-tvā** > **-tva** > ***-tvu** > **-ttu** (cf. **adhvanā** > ***adhvunā** > Pali **addhunā**; **tvarita-** > ***tvurita-** > Pali **turita-** (for this phonological explanation of Middle Indic *saṁprasāraṇa* in case like these, see Berger 1955, pp. 31f., 61f., 78f.).

A modified relic of the non-past gerund in **-am** has been suggested in the enigmatic form in **-(i)u[ṁ]** (? < **-o** + **-aṁ**) in the Aśokan insriptions at Girnar, corresponding to a present participle in the parallels: Rock Edict XI, 6 **so tathā karu[ṁ]** (Kalsi: **kalaṁt**, Shahbazgarhi, Mansehra: **karataṁ**) **ilokaccassa āraddho hoti...** "En faisant ainsi on gagne ce monde..."; XII, 6 **evaṁkaruṁ** (K.: **hevakalata**, Sh., M. **evaṁ-karatam/ṁ**) **ātpapāsaṁḍaṁ ca vaḍḍhayati...** "En faisant autrement, on nuit à sa propre sect..." (Bloch 1950, p. 120f., l. 33ff., p. 122, l. 21ff.; 1934, p. 284).

Among the more radical formal innovations one may mention e.g. the passive gerund in Pali (e.g. **duyhitvā** 'having been milked'; cf. Hendriksen 1944, p. 126), the Ardhamāgadhī gerundial ending **-āe**, being perhaps the instrumental of a feminine **ā**-stem (Pischel 1900, p. 401 § 593), or (more probably) isolated from forms like **ā+dā-ya** > Ardhamāgadhī **ā+āe** (Roth 1983, p. 157; Hinüber 1986, p. 200), the Old Marathi gerundial endings **-o/au+ni(yām)** and Modern Marathi **-ūn** (explained by Bloch 1920, p. 261 as the ablative of an **a**-stem followed by a postposition, rather than as from **-tūnaṁ**, but contested by Master 1964, p. 142ff.), the Gujarati gerund in **-ī+ne** (**-ia** < **-ita-** 'past pple', or < **-ya** + dative), the late Eastern Apabhraṁśa gerundial ending **-i(a)** < **-ita-** 'past pple' (Subhadra Sen 1973, p. 29), the Hindi gerundial forms in **-Ø+kar(/)ke** (< **-i** < **-ya** + 'having done'), the Torwali gerund in **te** (cf. above), etc. (Cf. also Grierson 1905, p. 473ff.; Chatterji 1926, p. 1003ff.; Dwarikesh 1971, p. 6ff.)

Occasionally Middle Indo-Aryan gerunds in **-ttā** (< **-tvā**) have been reanalyzed as past participles (and vice versa) or even agent nouns, as shown by the fact that not all 'proto-Pali' gerunds in **-ttā** have been restored as **-tvā** and that genuine past participles have sometimes been reinterpreted as gerunds (Hinüber 1982, p. 134ff.).

## 6.3.B. SYNTACTIC, SEMANTIC AND PRAGMATIC CHANGES

Ever since the early Vedic period (cf. 3.3, 4.2-4.3, 4.7, 5.3), there has been a gradual relaxation of the constructional, temporal and operational constraints of the gerund. Thus the number and types of absolute constructions have increased considerably since the Old Indo-Aryan period. The coreferentiality constraint still exists, but it requires no more than that the implicit or explicit subject of the gerund be coreferential with any referentially contiguous topical argument, cf. Hindi **dīvār girkar patthar gir gae** 'The wall having

collapsed, stones fell down' (example quoted from Davison 1981, p. 122 fn.).[12] At this juncture one is reminded of the equally free construction of the modern Dravidian verbal participles (cf. 6.5.B). Similarly, the 'passive gerund', which allows coreference of the subject of the gerund with a topical Undergoer, has become increasingly frequent in Middle and New Indo-Aryan (cf. Hendriksen 1944, p. 120ff.; Kellogg [1893] 1965, p. 453).

It was also observed that Vedic Sanskrit uses mainly participles or verbal nouns instead of the gerund to embed clauses within non-finite (incl. action nominal) phrases (cf. 4.4.A). Later Indo-Aryan uses the gerund freely (and often with neutralized tense value) in such constructions, especially to avoid subordinating a participle to another participle in the same case (cf. Hendriksen 1944, pp. 109ff., 131ff). Cf.

(716) Jāt. 19 comm. (ed. Fausbøll I, p. 169, l. 23')
**...esā pāṇātipātaṁ katvā mutti nāma bālassa bandhanam eva hoti**
'...such a release (as is brought about) by committing (or: having committed) murder, is the fool's fetter'

(717) Mil. (ed. Trenckner 158, 20; quoted from Hendriksen 1944, p. 115)
**...yadi ajānitvā pāṇātipātaṁ karonto balavataraṁ apuññaṁ pasavati**
'...if he who without knowing (or: without having realized) commits murder produces a grave demerit' (cf. ibid. 17 **yo ajānanto pāṇātipātaṁ karoti** 'who commits murder without knowing')

As mentioned in 3.3 and 4.Ø, the temporal neutralization (against P 3.4.21 = ex. 33) of the gerund in mainly Classical and Epic Sanskrit appears mostly in adjuncts and complements of manner, where the gerund depends on a verb signifying a durative atelic activity, e.g. 'subsist', 'behave', 'spend one's time', 'speak', 'move', etc. (cf. also 4.7 and 5.1.I). This use is more widely attested in and after Pali (cf. Hendriksen 1944, p. 114f.).[13]

(718) Jāt. 41 (ed. Fausbøll I p. 239, l. 9)
**...atha so... bhatiṁ katvā jīvati**
'...and so he lives by doing day-labor'
(lit. 'by earning/*having earned/*while earning daily wages'; cf. = ex. 57)

[12] Note that in this sentence, the subject of the gerund is not at all coreferenced in the main clause, whereas e.g. in **bāṇ** [hiraṇ ko] **lagkar hiraṇ mar gayā** 'The arrow having struck (the deer), the deer died' (quoted from Davison, ibid.), there is coreference between the topical animate Undergoer of the gerundial clause and the subject of the main clause. To that extent the construction is regular, the main deviation being the presence of an explicit grammatical subject of the gerund.

[13] Note that according to Sadd. III § 1152 the Pali gerund may also be used with reference to relative future time: '**apare kāle**', e.g. **dvāram āvaritvā pavisati** 'he enters shutting the door (afterwards)' (Hendriksen 1944, p. 115f.). This use is not attested in the Pali literature, but it is reminiscent of the gradual confusion of the gerund and infinitive especially in later Middle Indic (cf. Renou 1935, p. 391).

(719) Dhp-a III (p. 164, l. 19)
**...anekāni hi buddhasahassāni piṇḍāya caritvā jīviṁsu**
'... several thousand Buddhas lived by wandering about for alms'

(720) MN II (p. 5, l. 24)
**...samaṇañ ca pana gotamaṁ sāvakā sakkatvā garukatvā upanissāya viharanti**
'...the disciples are living with the ascetic Gotama, respecting and honoring him'

(721) Jāt. 37 (ed. Fausbøll I, p. 218, l. 10)
**...tumhe idān' eva evaṁ agāravā appatissā gacchante gacchante kāle kin ti katvā viharissatha**
'...you who already now are so disrespectful and disobedient, by doing what will you, as time passes, spend your life (i.e. how will you live your life)?'[14]

(722) Jāt. 42 (ed. Fausbøll I 242, l. 9)
**...so pāto va nikkhamitvā gocare caritvā sāyaṁ āgantvā tattha vasanto kālaṁ khepeti**
'...he spends his time living there, flying out in the morning, seeking for food, and returning in the evening'

(723) Jāt. 393 (ed. Fausbøll III, p. 310, l. 21)
**...ath' aññatarasmiṁ kāsigāme satta bhātaro... nānappakārakaṁ kīḷikaṁ kīḷitvā cariṁsu**
'...in a village in the Kāśī country seven brothers... spent their time pursuing different kinds of sport' (*varia lectio*: **kīḷantā** for **kīḷitvā**)

(724) Dhp-a IV (p. 31, l. 17)
**...tasmiṁ kira kāle rājāno manusse pīḷetvā rajjaṁ karonti**
'...at that time kings ruled (by) oppressing (**pīḷetvā**) the people' (cf. ex. 198)

Being obligatory or optional manner complements, these constructions entail temporal neutralization of the gerund. In the New Indo-Aryan languages the gerund is quite frequently used as a perfective manner complement or adjunct lacking relative past tense (cf. Kellogg [1893] 1965, p. 452 § 755 (5)). E.g.:

[14] Contrast MN I, p. 350, 10 **bhikkhu..paṭhamaṁ jhānaṁ upasampajja viharati** "a monk is living in the first stage of meditation", lit. "having attained (the first stage)" (Hendriksen 1944, p. 115 fn. 1).

(725) Premcand: Godān, p. 80, l. 6 from bottom
**vah kitābẽ naqal karke kapṛe sīkar laṛkõ ko paṛhākar apnā guzar kartā thā**
'He made his living by copying books, sewing clothes and teaching children.'

(726) Premcand: Godān, p. 13, l. 14f.
**hās-bolkar apne vidhur jīvan ko bahlāte rahte the**
'He kept on living his widower's life (in the manner of) laughing and chatting.'

(727) Premcand: Godān, p. 100, l. 19
**...cāhe hāskar sābhāle yā rokar**
'...whether he would keep it up (in the manner of) laughing or crying'

(728) Premcand: Godān, p. 63, l. 1
**mirzā ne ghighiyākar kahā**
'Mirza said faltering'

(729) Premcand: Godān, p. 93, l. 3
**phir vah bain kahkar rone lagī**
'Then she started to cry lamenting'

(730) Premcand: Godān, p. 296, l. 8
**...aur rokar bolā**
'...and he said crying'

(731) Aśk: Paccīs śreṣṭh ekāṅkī (Ilāhābād 1969), p. 287 (Schumacher 1977, p. 103.)
**maĩ ab jīkar karũgā bhī kyā?**
'What is the use for me now even to live?'

(732) Mohan Rākeś: Ādhe adhūre (Dillī 1971), p. 15 (ibid.)
**din-bhar ghar rahkar ādmī aur kuch nahĩ to apne kapṛe to ṭhikāne se rakh hī saktā hai**
'When a man just lingers about at home, he could at least put his clothes in their right place!'

(733) Mohan Rākeś: Lahrõ ke rājhās (Dillī 1971), p. 105 (Schumacher 1977, p. 108)
**maĩ ne alkā ko un ke pīche jāne se rokkar acchā nahĩ kiyā**
'I did not act wisely in keeping A. from going after them.'

Confer also Hindi idioms like **hāthī jhūmkar caltā hai** 'an elephant walks with a sway' (lit. 'walks in the manner of swaying', McGregor 1977, p. 38), **peṭ bharkar khānā** 'to eat one's fill' (lit. 'eat in the manner of/until filling one's stomach), **dhamkākar bolnā** 'speak in a menacing manner' (lit. 'speak menacingly'), **markar kamānā** 'work till one dies' (lit. 'earn in the manner of/until dying'), **ghūrkar dekhnā** 'glare' (lit. 'look staringly'), etc. (see Schumacher 1977, p. 100ff.).

As noted above in connection with the Pali gerund, the later Middle Indo-Aryan gerund is not infrequently used as a final infinitive depending on a verb of motion (cf. Pischel 1900, § 576ff.; Bloch 1934, p. 285; Renou 1935, p. 391). Conversely, in late Middle Indo-Aryan, and sporadically even in Pali, the infinitive is sometimes used instead of the gerund (cf. Renou 1935, p. 391; Edgerton 1953, p. 177).

In Vedic and early Classical Sanskrit, the gerund was frequently construed with stative or habitual auxiliaries, but only in and after Pali do we find it to be construed with perfective auxiliaries that often add some additional shade of meaning indicating the point of view or role of the speaker ('subjective aspect'; 4.4.D), e.g. **gam-** 'go; do all the way/away with', **dā-** 'give; do away for someone else' (cf. Hendriksen 1944, p. 134).

The use of perfective auxiliaries in connection with the gerund is especially common in New Indo-Aryan, cf. Hindi **patr paṛh *do*** 'read the letter for me!', **patr paṛh *lo*** [**lenā** 'take'] 'read the letter for your own good', **patr paṛh *jāo*** [**jānā** 'go'] 'read the whole letter through', **vah merā patr paṛh *baiṭhā*** [**baiṭhnā** 'sit (down)'] 'he went and read my letter', **us ne merā patr kāṭ ḍālā** [**ḍālnā** 'throw'] 'he cut up my letter', **tum kab tak soc *rakhoge*** [**rakhnā** 'place, put'] 'by what time will you make up your mind?', **vah caũk *paṛā/uṭhā*** [**paṛnā** 'fall'/**uṭhnā** 'rise'] 'he started up', etc. (cf. Vale 1948; Pořizka 1967-1969; Nespital 1980; Kachru 1979).

This usage cannot be explained as a replacement of preverbs, since there are no preverbs synonymous with these auxiliaries. Some of them do, however, make up for the loss of the middle voice conjugation in Middle Indo-Aryan, but it cannot be a coincidence that lexically, semantically and morphologically analogical constructions especially for perfective aspect are widely attested in South, Central and East Asia (cf. Aalto 1973; Masica 1976, p. 141ff.; Hook 1977).[15]

[15] This development is usually attributed to Dravidian influence, but it is hardly the only source, since some of the auxiliaries (e.g. 'sit', 'throw') — if not necessarily the specific verb-forms — used in these constructions conform better with Central Asian Turkic and Eastern Iranian (cf. Masica 1976, p. 154).

A similar case of subregional variation within the 'Indian linguistic area' is the use of the gerund in combination with a temporal auxiliary for expressing the perfect and pluperfect in some eastern and northwestern Indo-Aryan languages. In Sanskrit this is very rare, being apparently found only once (?) in the Bombay edition of the Mahābhārata (cf. 4.4.D). Another case in point is the formation of the quotative marker. Although most Indian languages have quotative constructions with postposed quotative markers, the latter are based on gerundial forms of the verb 'say' or 'speak' mainly in the peripheral Indo-Aryan and contiguous non-Aryan languages (cf. Meenakshi 1986).

Another functional extension after the Old Indo-Aryan period is the use of the gerund in complements of modal and conative verbs, e.g. Apabhraṁśa **keṇavi gaṇivi ṇa sakkiyai** 'cannot be accounted for (**gaṇivi**) by anyone', Old Rājasthānī **bolī na sakai** 'cannot be said (**bolī**)', Hindi **bol nahĩ saktā** 'cannot speak (**bol**)', Prasun (Nuristani) **no orodi woloksum** 'I cannot beat him' (Bloch 1934, p. 285; Morgenstierne 1949, p. 243). In this function the gerund almost replaced the infinitive, which was lost or confused with the former in later Middle Indo-Aryan, cf. Apabhraṁśa **pesu** (< **paisu**) **ṇa dei** 'does not allow to enter (**pesu**)', **lahivi ṇa sakkau** 'was not able to obtain (**lahivi**)' (Subhadra Sen 1973, p. 93). In the modern Indo-Aryan language, the infinitive has been reformed on the basis of mainly thematic verbal nouns, which are 'declined' for case (mainly by the means of postpositions).

Some of the New Indo-Aryan languages have introduced a formal and functional distinction between a full and a reduced form of the gerund: the former is used in normal non-periphrastic as well as manner adverbial/complemental functions, the latter in periphrastic constructions, verbal complementation and 'loose verb serialization', cf. Hindi: **us ne soc-*kar* kām kiyā** 'having thought (s)he worked'/'(s)he worked carefully' vs. **vah kām kar-ø (±*ke*) gaī** 'she went having done the work'/'she did the work and went', **vah kām kar-ø gaī** 'she did the work all the way', **vah soc-ø saktī hai** 'she can think', **zarā soc-ø lo** 'just think a little for yourself!' (cf. Dwarikesh 1971, p. 99ff.; Davison 1981, p. 105; 1986, p. 5).

According to Davison (ibid.) these uses do not, however, involve any syntactic or even semantic (truth conditional) distinction. But surely there is a (potential) difference of truth conditions between (abstract) manner adverbial interpretations like 'carefully' vs. concrete actional sequence like 'having thought', and especially periphrastic aspectual interpretations like 'do all the way' vs. 'do and go'. On the other hand, there is some pragmatically conditioned predetermination of interpretations, inasmuch as the manner adverbial reading figures most prominently (i.e. as a 'preferred reading') when the main verb ranks low in discourse prominence, i.e. relative information value (cf. thus also **vah hãskar bolī** 'she said laughing', hardly ever: 'she laughed and said' = **vah hãsī aur bolī**; **dauṛkar āo** 'come speedily', hardly ever: 'come having run [e.g. somewhere else]'). To some extent these readings are, in fact, distinguished morphologically (the endings **-ø** and **-karke** being excluded for the manner adverbial reading and the endings **-kar(±ke)** for the periphrastic aspectual reading) and syntactically (in terms of stricter word order constraints for the manner adverbial and especially periphrastic aspectual reading).

The role of the gerund in both (quasi-)complex and simple sentences has thus continued to increase in the Middle and New Indo-Aryan languages. In particular the ability of gerundial clauses to replace coordinate finite clauses sharing Actor/subject, illocutionary force, modality and tense has expanded with the increasing potential dependence of the

gerundial clause on any operator of the superordinate clause. Davison (1981, 1986) claims that Hindi gerundial clauses cannot be in the scope of negation and question under the coordinate-like or 'sequential' reading, but this is not correct, cf. (735)-(736).

It appears nevertheless from Davison's penetrating study that the operational integration or interpropositional predicative force of 'subordinate-like' gerundial clause is or has (?) decreased, inasmuch as the *interpropositional* or *conjunctive relation* expressed by such clauses in Hindi is incapable of being asserted, negated and questioned *per se*, which is a characteristic of adpositional or adverbial phrases and *embedded* adverbial clauses of time or cause, cf. ??**kyā vah dostõ se milkar der se āyā** 'did he come late because of having met his friends' = **kyā vah dostõ se milne ke kāraṇ der se āyā**; ??**vah cāy pīkar nahĩ jāegā** 'he won't go *after* drinking tea' = **vah cāy pīne ke bād nahĩ jāegā** (Davison 1981, pp. 109, 113). Contrastive negation is possible only in alternative and adversative linkage: **lāhaur na jākar banāras jāo** 'don't go to Lahore but to Benares!'.

Even when having the subordinate-like or restrictive reading, the gerundial clause is thus syntactically *not an operationally fully integrated adverbial constituent* of the sentence, explaining why temporal and causal qualifications whose interpropositional relation is foregrounded by a yes/no-question or contrastive denial tend to be based on adpositional or adverbial phrases or embedded clauses rather than gerundial clauses.

With the exception of thematically 'inverted' gerundial clauses (4.7.C.3), this seems to be essentially true for Sanskrit as well, although testing is impossible. Since the syntax of the gerund is more or less identical in all the New Indo-Aryan languages, we may conclude that the increase of operational integration has affected only propositionally non-restrictive (semantically 'coordinate-like') gerundial clauses. This has enhanced the 'functional profile' of the Indo-Aryan gerund in favor of *operationally unconstrained* additive-sequential linkage in narrative, procedural and hortatory discourse, but *operationally constrained* temporal, causal and modal-instrumental linkage in expository discourse.

In Vedic Sanskrit, operational dependence (i.e. scope inclusion) was possible (for additive-seqential gerundial clauses) only in *positive* assertive and directive sentences. In Epic and late Classical Sanskrit, dependence on negation and interrogation was possible but evidently not with several marked operators having simultaneous scope over the gerundial clause. But especially in late Middle Indo-Aryan (e.g. Apabhraṁśa) and New Indo-Aryan (with the possible exception of some Dardic [and Nuristani] languages), there seem to be virtually no restrictions on the operators that may simultaneously have scope over a thus non-presupposed peripheral (and especially core-layer) gerundial clause. Cf.:

(734) Siddhahemaśabdānuśāsana VIII: IV 341,1 (from Subhadra Sen 1973, p. 127)
**...gharu melleppiṇu māṇusahaṁ to vi na ruccai rannu**
'... still men do not like to leave home and take to the forest'

(735) Premcand: Godān, p. 239, l. 11f.
**vah kabhī us ke ūparī vilās-āvaraṇ ko chedkar us ke antaḥkaraṇ tak na pahūc sakī thī**
'She had never been able to pierce (**chedkar**, ger.) his superficial playful exterior and reach his heart.' (≠ 'Having pierced his superficial playful exterior, she had never been able to reach his heart.')

(736) Premcand: Godān, p. 17, l. 9f.
**use ḍāṭkar bolī: ab god se utarkar pāv-pāv kyō nahī̃ caltī**
'She said scoldingly (**ḍāṭkar**, ger.) to her: "Why do you not now get down from (**utarkar**, ger.) (daddy's) lap and walk on your own feet?"'
(≠ 'Why do you not walk on your own feet, having got down from daddy's lap?')

The fact that the New Indo-Aryan gerund is functionally more or less equivalent to either a coordinate or subordinate finite verb/clause is corroborated by the following types of deviant usages of *coordinate* finite clauses in substandard Indian English (quoted from Southworth 1974, p. 217.): *I'll just eat and come* (Hindi: **maī̃ *khākar* āū̃gā** = 'I'll come having eaten', i.e. 'when I have eaten'), *Buy the vegetables and come* (Hindi: **sabzī *kharīdkar* āo** = 'Having bought vegetables, come!', i.e. 'Go and buy vegetables', alternatively: ***jākar* sabzī kharīdo** = Skt. ***gatvā śākāni krīṇīṣva***), *You take the book and go* (Hindi: **kitāb *lekar* jāo** = 'Having taken the book, go', i.e. 'Take the book with you' = Skt. **pustakam *ādāya* gaccha**), *He did not ask me and go* (Hindi: ?**vah to mujh se pūchkar nahī̃ gayā** = 'He did not go having asked me').

## 6.4. INDO-EUROPEAN FORMAL AND FUNCTIONAL PARALLELS

In the above preliminary discussion it has been taken for more or less granted that the Indo-Aryan gerunds are etymologically or structurally related to nominal and infinitival formations in other Indo-European languages, especially Iranian, Greek, Latin, Baltic, Slavonic and Tocharian. In the following sections the external morphological relations and functional parallels of the gerund will be explored in somewhat greater detail.

### 6.4.A. NURISTANI ('KAFIR')

The phonetically archaic Nuristani languages, spoken mainly in the river valleys along the Kunar (and its tributaries) in the Hindukush mountains, represent an early, if not the

earliest, Aryan migration from northeastern Iran toward the Indian subcontinent, where they have converged with the Northwestern Indo-Aryan and Eastern Iranian languages (cf. Morgenstierne 1926, p. 69; 1929, p. 201; Èdel'man 1963, p. 77; 1980, p. 21ff.; 1983, p. 13ff.; Toporov 1966, p. 172ff.; Buddruss 1977; Nelson 1986).

As mentioned earlier (6.1.B, 6.3), almost all Nuristani languages possess reflexes of the past gerund as it appeared in the Ṛgveda and the northwestern Prakrits, although the more isolated dialects do not seem to use them as frequently and widely as the (non-northwestern) Indo-Aryan languages. E.g. Prasun **tər'äž *āṭ'-ī* orod'ogo** 'seizing his sword, he struck them', **no *orod-i* woloksum** 'I cannot beat him' (Morgenstierne 1949, p. 243); Ashkun **ai *muč-ī* agestem** 'I ran up' (lit. 'having fled I came'; Edelman 1983, p. 103). In particular, the additive-sequential function is then typically expressed by asyndentic finite clauses in the same way as in most of the Eastern Iranian languages.

Since the Nuristani and northwestern Indo-Aryan gerunds in **-ti** do not seem to descend from ***-tī** which could be compared with the Iranian instrumental infinitive in **-tī** (cf. Brough 1962, p. 117 fn. 1), it is, however, unlikely that a gerund (of the Indo-Aryan type) existed in proto-Nuristani. The use of various case forms of **tu**-derivatives as infinitives (and gerunds) is a pre-Ṛgvedic Indo-Aryan innovation, while Nuristani does not seem to have (had?) such infinitives. (**-tu**-infinitives seem, however, to occur in Northeastern Iranian, possibly as Dardic loans, cf. Shugni **-tao** < ***-tavai**; Geiger 1901, p. 309; Morgenstierne 1938, pp. 371, 509.) On the the other hand, proto-Nuristani may have had an instrumental infinitive in **-yā** < **-ya-**, corresponding to Avestan **-yā** and the Sanskrit gerund in **-yā/-ya**. If the Nuristani gerund in **-i/-ī** is a direct reflex of the said infinitive, rather than of the Old Indo-Aryan gerund in **-yā**, it must have been reinterpreted in accordance with the latter, while at least the dialectal **tv**-forms would seem to be ancient Indo-Aryan loans.

### 6.4.B. IRANIAN

The compounded gerundial forms in **-(t)yā/-(t)ya** have a formal parallel in the rare Avestan instrumental compound infinitive in **-yā** < **-ya-** < ***-ia-**. Unlike the said gerundial forms, the Avestan **yā**-infinitive is not, however, supplemented by simplex forms from suppletive stems, such as ***-tu-** or ***-tva-**. Syntactically they form (with their adverbal dependents) nominal rather than adverbial constituents of the sentence, being obviously used only in nominal complementation of **dā-** (middle) 'be intent on doing'. On the other hand, they are attested only twice: Y 11.17 ***aibigairyā*** **daiθe vīspā humatāčā ...** ***paitiričyā*** **dāiθe vīspā dušmatāčā...** "Ich nehme mir vor, *anzunehmen* (eig.

einzustimmen in) alles was gut gedacht ist, ...*zu unterlassen* alles, was übel gedacht ist"; Vidēvdāt 5.60 **nōiṯ zī ahuro mazdå yåŋhuyanąm avarətanąm** (Gen. part.) **paitiričyā daiθe** "denn AhM. ist nicht willens bewegliches Besitztum verkommen zu lassen" (Reichelt 1909, p. 344 § 700; cf. Pobozniak 1965, pp. 145, 169).[16]

The form and function of these 'infinitives' have been questioned by Benveniste (1935b, p. 27), according to whom they are to be taken as simple locatives of root nouns rather than as instrumentals of an "unattested type of derivative" (**garya-**, **ričya-**). Pointing to the fact that **dā-** is also construed with the locative, he concluded that these constructions can be rendered literally as: "je me livre à l'adoption, à l'abandon, etc.".

It is true that verbal rection is not a *sufficient* requirement for a nominally derived form to be classified as a non-finite form, because not a few plain verbal nouns and adjectives may govern an accusative object (cf. RV **ná tám dhūrtíḥ** 'there is no injuring him'; Whitney 1889, p. 90f.). Equally important criteria for proper infinitival formations are productiveness, functional specialization and paradigmatic isolation. Nevertheless, I do not see how Benveniste's alternative syntactic and formal analysis can be accepted. It is only in the young Avestan example (V 5.60) that the rection of these forms appears somewhat ambiguous, while as locatives they would be formally anomalous. Moreover, **ya**-derivatives of the assumed type are ancient, occurring also in 'genuine' infinitival forms in Gathic Avestan (cf. **ušyāi** 'à proclamer' < ***učyāi** < ? √**vak**; **uzūiθyōi** [= **uz+ū-θyai**] 'pour le sauver', Benveniste 1935b, p. 68; Debrunner 1954 = Ai. Gr. II:2, p. 831).

Of crucial importance for this etymology is the fact that the said Old Iranian forms continue in Eastern Middle Iranian (mainly Khotanese Saka 'absolutives' in **-i**), but then reinterpreted according to the Indian morphosyntactic model. Although not very frequent, these forms are mostly used to translate gerunds in Buddhist Sanskrit texts, e.g. Vajracchedikā **haṁberi**, **haṁbiri** < ***hampārya** 'having filled' (Skt. **saṁ+bhṛ-tya**), **pajsīryi** 'having removed' < ***apakarya** (Skt. **apa+kṛ-tya**), cf. Konow (1932, p. 59).

Such 'gerunds' are nevertheless not very productive in Khotanese Saka, and many other constructions are used to translate Sanskrit gerunds, e.g. finite co- and subordinate clauses, instrumental action nouns and prepositional phrases. In the Bhadracaryādeśanā, the original Sanskrit version of which contains only a handful of gerunds, all gerundial constructions correspond to subordinate temporal clauses or instrumental action noun

16 Cf. also young Avestan **pairi+apaya** (Yt. 10.105), interpreted by Bartholomae (1904, col. 862) as an instrumental noun "mit den Armen ihn umfassend", but by Debrunner (1954 = Ai. Gr. II:2, p. 789 § 641c) as perhaps a 'gerund' comparable to Skt. **pary+āpya**, then to be read as **+āpya** "umfassend". The enigmatic young Avestan forms **iθe** and **avaēθe** in Yt. 19.57, 60, 63 , which have traditionally been passed over as "sinnlose Fluchworte" (Bartholomae 1904, col. 366) or as a "meaningless collection of words, expressing a curse" (Reichelt, Avesta Reader, p. 131), have been interpreted by Pisani (1944/45, p. 67) as 'gerunds' (e.g. Yt. 19.57: **iθe iθa yaθna ahmāi nōiṯ taṯ xvarənō pairi.abaom** "andando cosi son sforzo fino ad esso, non ho conquistato quel **xvarənō**", cf. Skt. ***i-tya** [pro **itvā**] 'having gone', **ave+tya** 'having gone down'). But note that the Sanskrit gerund in **-(t)ya** is almost wholly restricted to compounds.

phrases, e.g.: 59.2 (Plate 55, v 3) ***khu tsva hame*** **satvāṁ hye udiśāyi naittā** '*when go-PAST.PPLE-NOM.SG. be(come)-PRES.MIDDLE-3SG. being-GEN.PL. good-OBL.SG. for sit-PRES-3SG.*' = 'when he has gone (there), he sits for the good of beings', cf. Skt. ***gatva*** **niṣīdati sattvahitāya** 'having gone, he sits for the good of the beings'; 66.1 (P. 57, v. 3) ***khu vyārṇa byaudi yinūṁ*** **vara ṣṭāṁ aysā** '*when prophecy obtain-PAST.PPLE.ACC.SG. make-PRES.-1SG. there stand-PRES.PPLE. I-NOM.SG.*' = 'When I have there been able to attain the prophecy', cf. Skt. **vyākaraṇaṁ *pratilabhya* ca tasmin** 'And having obtained the prophecy'; 68.1-2 (P. 57, v. 2-3) **bhadracarye prraṇihāṇyāṁ hvāñāṃme jsa | cu mara haṁjsāṁdā pṵñā ttinka masūṁ** '*Bhadracaryā-GEN.SG. vow-GEN.PL. preaching-from/with which here accumulate-PAST.PPLE. merit-NOM.PL. so many*' = 'With preaching of vows of the Bhadra-caryā (Good Course of Life), so many merits that have been accumulated here', cf. Skt. **bhadracaripraṇidhāna *paṭhitvā* yat kuśalaṁ mayi saṁcitu kiṁcit** 'By having preached Bhadracari-vows, what merit that has accumulated in me' (Asmussen 1961, pp. 34, 37, 38).

Also the Khotanese Saka forms in **-tanu** < ***-tanam** have occasionally been classified as 'gerunds' (Bailey 1958, p. 147), but actually they are final infinitives or supines, e.g. **tvaṁdanu tsute** 'he went to salute' (Konow 1932, p. 59; Benveniste 1935b, p. 105; Emmerick 1968, p. 119f.).

It has been hypothesized that there was once an instrumental gerund in ***-tī** < **-ti-**, which in contamination with **-tvā́** produced the northwestern variant in **-tví** > **-ti** (cf. 6.1.B). But there are no reflexes of such an instrumental gerund, although it could be formally compared with Avestan instrumental infinitives in **-tī/-ti** (cf. Reichelt 1909, p. 343f.).

The latter appear also as simplex and form final or instrumental adverbial adjuncts or complements. However, the only genuine instrumental infinitive accepted by Benveniste (1935b, p. 62) is the following: Y 32.11 **taēcīṯ mā mōrəndəṇ jyōtūm yōi drəgvantō mazbīš čikōiterəš aŋuhīščā aŋhvasčā apa+yei-tī** (**yam-**) **raēxnaŋhō vaēdəm** 'those deceitful ones who appear in grandeur as lords and ladies, even they have ruined this life *by stealing* the property of the (true) inheritor' (Insler 1975, pp. 46f., 206). Further comparison might be made with nominative-accusative and/or instrumental verbal adverbs such as young Avestan **a+paiti+bus-ti** 'without noticing', also paralleled in Greek verbal adverbs such as Homeric ἀ+στακ-τί 'in floods' (contrast στάγ-δην 'in drops') < στάζω '(let) fall in drops', ἀν+ωϊσ-τί 'unexpectedly' < οἴομαι 'believe', etc. (Wackernagel 1924, p. 288; Bader 1970).

Infinitives and supines derived from **ti**-stems are not very frequent in Sanskrit (which favors **-tu-**), but they are amply represented in Old Iranian, Baltic, Slavonic and Celtic (Brugmann 1906 = Grundriss$^2$ II:1, p. 429 § 219). In the instrumental case they are represented in Vedic Sanskrit mainly by adverbialized forms such as **śruṣ-ṭí** 'willingly; in service' (= 676, 678) and cognate instrumentals, cf. RV 7.1.21b **su+dī-tí**... **didīhi**

"glänze mit hellem Glanz" (Debrunner 1954 = Ai. Gr. II:2, p. 635 § 470b).

Although most of the modern Iranian languages (incl. the Pamir dialects, cf. LSI 10) seem to lack a category that can be formally compared with the Indo-Aryan or modern Nuristani gerund, they do have a syntactic parallel in the (occasional) use of the (indeclinable) past participle as an *active* conjunctive participle, although with mainly backgrounding or propositionally restrictive function, cf. Modern Persian: **wārid-i uṭāq šude guft** 'having entered the room he said', **kitābrā *naxānde* baḥaṣ nakun** 'without having read the book, don't enter into dispute!' (Rubinčik 1970, p. 831).

Similar uses are met with in Pashto (Coletti 1980, p. 62), the Pamir dialects, and Baluchi, which then adds the coordinative conjunction **o** 'and' to the past participle (LSI 10, p. 354). E.g. Pashto **čerčerak dŭ-mŭčei ḫabŭre wāwredè ḍera pḫemānei wokṛa** 'the cricket, having heard the bee's talk, repented greatly' (cf. Coletti 1980, p. 62). The reinterpretation of the past participle in this construction as active even when formed from a transitive verb is suggestive of Indo-Aryan or (in some cases) perhaps Altaic or Burushaski influence. It must, however, be stressed that even the Eastern Iranian languages prefer asyndetic clause chains in additive-sequential linkage, e.g. Yidgha **lo'ɣōi do kyē̄ sa'lām koṛ** 'he entered the house and salaamed', Wakhi **'xōnar 'riç̣ ce'bas 'wəze** 'go home and come back' (Morgenstierne 1938, pp. 168, 511). To the extent that the past participle often serves as the basis for finite preterital tenses, some of the above participial constructions may, however, be indistinguishable from finite asyndetic constructions.

### 6.4.C. TOCHARIAN

The Tocharian 'adverbial participles' (as the functional counterparts of the Indo-Aryan gerunds will be called here) are formed by adding the ablative or perlative case marker to what appears to be an isolated substantivized form in **-r** of the perfect ('preterital') participle (Sieg & al. 1931, p. 338; Windekens 1944, pp. 100 ff., 294; Krause 1955, p. 40 fn. 28, p. 42 fn. 2).[17] E.g. A **kaklyuṣ-ur-āṣ** 'having heard', **kälp-or-äṣ** (abl.), **kälp-or-ā** (perl.) 'having attained'; B **keklyauṣ-or-meṁ** (abl.), **kakām-ar-sa** (perl.) 'having taken'.

According to Krause (1952, p. 37) there is a notable semantic distinction between the ablative and the perlative adverbial participle in the western Tocharian dialect ('B'), and this has been confirmed by W. Thomas (1960; 1985, p. 102) also for the eastern A-dialect. It appears namely that the perlative adverbial participle expresses mainly the manner, means or cause of an anterior or simultaneous action, whereas the ablative adverbial participle

[17] According to Pedersen (1941, p. 213ff.; 1938, p. 45f.; 1925, p. 42f.) the underlying stem is not really the perfect participle, but an analogically reduplicated deverbal noun in **-o(/u)/a-r-**).

expresses merely the prior completion of an action (with or without logical implicatures). Despite the formal paradox, the ablative adverbial participle is much more commonly used than the perlative adverbial participle in translating the Sanskrit gerund, e.g. B 198a5 **yñaktem *ykuwer-mem*** : Skt. **devāṁ *gatvā*** '(on) having gone to the gods'; cf. 81b5 **tane brāhmaṇi kerciyem-ne *yaipor-mem* poñc ṣar koś *ceccalor-sa* ka lānte yarke yamaskem** 'then the brahmins having entered (***yaipor-mem***) into the palace, they all paid reverence to the king just by raising (***ceccalor-sa***) their hands' (W. Thomas 1960, p. 197; Krause 1955, p. 41). When the perlative adverbial participle is used to translate the Sanskrit gerund (e.g. B 304b5 **yaipor-sa** = Skt. **praviśya** 'having entered'), this may then be due to a conscious personal effort of the scribe to interpret the text (cf. W. Thomas 1960, p. 203).

On the other hand, also the ablative adverbial participle is often used to express backgrounded or propositionally restrictive qualifications. Cf. A 395: **tām *kaklyuṣur-āṣ* cem priyadattes pācar mācar cam klop-yo ime crakār** 'having heard that, Priyadatta's father and mother lost their presence of mind by grief', **tm-āṣ prāmnāñ priyadattem mańkal-ṣinās wrāntu-yo *yāyurur-āṣ* maṇḍl-aṁ ywārck-ā *wāwor-āṣ* cami sepal-yo talke yasi ārwār tākar** 'thereupon the brahmins purified Priyadatta with auspicious water, led him into the middle of the ***maṇḍala*** and made themselves ready to sacrifice him with grease'; B 81b5: **...piś uwem akalṣālyem-ścā makā-yākne *papautar-mem* weṣāṁn-me-śc** '...(and) having flattered the five (most) skillful pupils in many ways, (Rudramukha) said to them' (Krause 1955, p. 39ff.).

This functional differentiation of forms can be explained on a semantic basis (abl. vs. perl./instr. preterital participle), but does not conform with the etymology of the Sanskrit gerund. In view of the many peculiar features in the structure of Tocharian (e.g. the loss of voiced and aspirated stops and the partly rebuilt structure of the declensional system),[18] it is, nevertheless, unlikely that these isolated formations, which have Altaic, Uralic and Tibeto-Burman structural parallels, are entirely spontaneous developments.[19]

### 6.4.D. GREEK

The Greek verbal adverbs in -δα, -δην, -δον have usually been compared with the Sanskrit accusative non-past gerund in **-am**, cf. Od. 4.278 εκ δ' ὀνομακλήδην Δαναῶν ὀνόμαζες ἀρίστους 'and you called aloud mentioning by name the

[18] Cf. Krause (1951; 1955, p. 35ff.), and for a more critical assessment of the difficulties involved in determining and identifying the foreign influences on Tocharian, W. Thomas (1985, p. 147ff.).

[19] Cf. the Finnish ablative past participles meaning 'after V-ing' vs. instructive infinitives meaning 'in the manner of/while V-ing': **Hyvä koira kuol-tu-a-nsa, ilkeä elä-e-ssä-nsä** 'a good dog after having died, mean while living', **paet-e-n pahasta pääsin** 'by escaping I got out of the bad' (Hakulinen 1979, p. 576ff.; cf. 6.4.H).

chieftains of the Danaans'.

It is generally assumed that these verbal adverbs are petrified 'adverbial accusatives' of neuter and feminine deverbal (occasionally denominative) stems, the final dental of which is a generalized extension added to roots ending in a vowel or taken over from roots ending in **-d: -don/-da** (plur.) < *-(**d**-)**o**-, **-dān** < *-**dā**- < *-(**d**-)**ā**- (cf. Fraenkel 1911, p. 225; Schwyzer 1939, p. 626).

But pointing to the paucity of such actual nominal derivatives in Greek, Haas (1956) has instead argued for a somewhat far-fetched connection with the Sanskrit gerund in **-ya** (with **d** from ***bd** < ***by**). Thus he compares e.g. ἐξ ὀνομακλήδην in Il. 22.415 πάντας δὲ λιτάνευε κυλινδόμενος κατὰ κόπρον |ἐξ *ὀνομακλήδην* ὀνομάζων ἄνδρα ἕκαστον 'he beseeched all, groveling in the filth, calling on each man by/while mentioning his name' with Vedic **nāma+gṛhya**.

Against this it may be observed that in one third of the cases in Homer these verbal adverbs are simplex, and they correspond formally and semantically more closely to the (mostly compounded) Sanskrit gerund in **-am**, cf. **nāma+grāham** 'taking/mentioning the name'. The morphological isolation of these verbal adverbs is not a problem, if it is assigned to their early functional specialization, cf. the paucity of post-Ṛgvedic nominal **tu**-derivatives (Renou 1937, p. 11ff.)

According to Haas, these verbal adverbs are not, however, always expressive of attendant circumstances or concomitant action, cf. Il. 1.292 τὸν δ' ἄρ' *ὑποβλήδην* ἠμείβετο δῖος Ἀχιλλεύς "ihm fiel Achilleus in die Rede und antwortete" (Haas 1956, p. 135). Temporal indifference might be at hand also in cases like Od. 12.392 νείκεον ἄλλοθεν ἄλλον *ἐπισταδόν* "ich rügte sie, wobei ich von einem zum andern trat" (ibid.), lit. 'I upbraided [them], coming/having come up to each in turn' (cf. 13.54.), Od. 10.172ff. ...ἀνέγειρα δ' ἑταίρους | μειλιχίοις ἐπέεσσι *παρασταδὸν* ἄνδρα ἕκαστον '...and I heartened my comrades with gentle words, coming/having come up to each man in turn'; cf. also Aristophanes, Plutus 646 ὡς ἀγαθὰ *συλλήβδην* ἅπαντά σοι φέρω "ich habe alles zusammengetragen und bringe es dir" (Haas 1956, p. 141).

Unlike the Sanskrit past gerund, these verbal adverbs have nevertheless remained *basically* non-preterital or temporally unmarked and operationally constrained. In one case the verbal adverb seems to be elliptically in the scope of a negative main clause, but this could also be explained by instrumental implicature:

(737) Il. 15.22
λῦσαι δ' οὐκ ἐδύναντο *παρασταδόν*
"they could not come near and get (you) loose"(Hock 1984, p. 96)
"howbeit they availed not to draw nigh and loose thee" (Murray 1957, p. 109)

Haas (1956, p. 136) argued for a preterital and operationally dependent interpretation of the verbal adverb here, but his translation shows the possibility of a purely 'instrumental' interpretation: "durch hin-zutreten konnten die Götter sie doch nicht befreien: vielmehr mussten sie erst hin-zutreten, um sie loszubinden, und die erste dieser Handlungen war ihnen unmöglich."

According to Haas' theory, the Greek verbal adverb which would show the greatest formal correspondence with the Sanskrit gerund in **-ya** is the one in **-δα**, but this is conspicuously absent in the Iliad (except when simplex), being, however, rather common in the Odyssey. Haas compared the form in **-δην** with the Ṛgvedic variant in **-yā**, explaining the final nasal by analogy with other adverbs or adverbial accusatives in **-n**, but even **-δην** is rarer (except when simplex) than **-δον** in the Iliad and Odyssey.

Hence, the only convincing structural and functional parallel is that between the Greek deverbal/denominative adverb in **-δον** (once also **-ον**) and the Sanskrit non-past gerund in **-am**, cf. Il. 4.529 *ἀγχίμολον* δέ οἱ ἦλθε 'and he went up to him coming near'.

### 6.4.E. LATIN

An independent morphological parallel to the gerund in **-tvā** may be at hand in the (instrumental) ablative of the Latin supine in **-tū** (cf. Wackernagel 1920, p. 280). But unlike the Latin supine, the Sanskrit gerund is seldom, and never in early texts, used as an instrumental or nominal complement of a verb or an adjective in constructions like [**ita**] ***dictu*** **opus est** 'it is necessary to speak thus' (Terentius, Heautontimorumenos 941, quoted from Wackernagel ibid.; cf. Haudry 1979, p. 86). Even when the supine expresses a temporal or instrumental qualification, it corresponds better to an ablative or instrumental tenseless infinitive:

(738) Cato, De Agri Cultura 5.5 (cf. ex. 101)
**Primus *cubitu* surgat, postremus cubitum eat**
"er soll als der Erste von allen vom Liegen aufstehen und als der Letzte zu Bette gehen" (Wackernagel 1920, p. 280)

(739) Plautus, Amphitruo (prologus) 109
**...et gravidam fecit is eam *compressu* suo**
'...and he made her pregnant (with/by) lying with her' (cf. Hock 1984, p. 96)

It has been customary to compare the Sanskrit gerund also with petrified unproductive ablatives of (defective) deverbal action nouns in ***-tu-**, which lack temporal differentiation,

e.g. **iussū** 'by order', **iniussū** 'against order', **adventū** 'at/on arrival', **discessū** 'at/on departing', **simītu** (< *-ei-) going together; simultaneously', cf. Skt. **sam+ā+itya** '[having come] together' (Wackernagel 1924, p. 288).

Even the Latin dative supine **-tu-ī** has sometimes been compared with the Sanskrit gerund, cf. Plautus, Bacchides 62 **istaec lepida sunt memoratui** (Wackernagel 1920, p. 280), but the former corresponds morphologically and syntactically to the Vedic dative infinitive in **-tavai** rather than to the gerund in **-tvā**. The various cases of the Latin supine, which lacks suppletion, are therefore synchronically on a par with the Indo-Aryan infinitives in **-tum**, etc. rather than with the gerund.

As pointed out already by Bopp (cf. 1.5.B), there is a greater functional correspondence between the Sanskrit gerund and the ablative of the Latin gerund (**-ndo**) as expressing means, cause or (secondarily) an attendant circumstance (competing with the present participle). E.g. Corpus Inscriptionum Latinarum L I 25, 5 (Col. Rostr.) **Macel[amque opidom p]ucnandod cepet**; Tacitus, Annales 15.69 **nihil metuens an dissimulando metu** 'fearing nothing or pretending not to fear'. (For the semantic and syntactic development of the Latin gerund, cf. Wackernagel 1920, p. 276ff.; Aalto 1949, p. 65ff.; Risch 1984, pp. 95f., 100f.) Similar functions are also ascribed to the (Old and Modern) Armenian instrumental infinitive (cf. Jensen 1959, § 482; Haudry 1970, p. 45). But, of course, the Latin gerund is based on an entirely different stem[20] and may not be used in the ablative with preterital sense or additive-sequential value.

## 6.4.F. BALTIC AND SLAVONIC

Adverbially used instrumentals and verbal adverbs derived from verbal nouns are found in Baltic (Zubaty 1894, p. 119ff.; Endzelin 1922, p. 473f.; Senn 1966, p. 432 § 972), and, mainly as cognate instrumentals, in some Slavonic languages (Liukkonen 1974). Cf. Lettish: Welme 1.1.23 ***pèldu* pèldét** "schwimmend schwimmen" (Zubaty 1894, p. 126).

(740) Austrums V 15
**kad ari šis puskurtelis bija vél tápat *stāvu* nŭkŭpts**
"nachdem auch dieses Halbviertelchen noch ebenso im Stehen (stehends) abgethan worden" (Zubaty 1894, p. 119f; cf. Endzelin 1922, p. 473f.)

[20] The Latin gerund is etymologically and functionally connected with the gerundive, but the question of the diachronic priority of these categories has been the subject of much controversy. Although the matter has little consequence for the Sanskrit gerund (which cannot be derived from the non-suppletive gerundives in **-(t)ya-** and **-tva-**), it may be noted that Risch (1984), while arguing against i.a. Aalto (1949), has defended the theory that the diathetically neutral gerund is a substantivization of the mediopassive gerundive in **-ndo-** < ***-tno-** (reinterpreted on the basis of impersonal absolute participial constructions like **scribendo/scribundo adfuere/arfuere** = τωι γραφομενωι).

Zubaty (ibid.) thought that these formations are etymologically related to the Aryan non-past gerund in **-am**, which he therefore reconstructed as ***-ām**, i.e. the disputed (or mainly Balto-Slavonic) instrumental in ***-ā-m** of an **ā**-stem. In terms of case inflection they could be compared with the gerunds in **-tvā** and **-(t)yā**, but they contrast semantically by having the expected non-preterital modal-instrumental sense.

Apart from such verbal adverbs or adverbially used instrumental action nouns, most Slavonic and Baltic languages possess petrified nominative present and past participles used as 'gerunds' or 'adverbial participles' of the present and past, e.g. Old Russian **reka** 'while saying', **pomoljac'** 'having prayed' (Kiparsky 1967, pp. 240f., 248f.; Issatschenko 1983, p. 399f.; cf. Gāters 1977, p. 141ff.; Eiche 1983).[21]

## 6.4.G. INDO-EUROPEAN BACKGROUND OF THE GERUND

Although many of the Indo-European formational or structural analogues of the Indo-Aryan gerunds may be quite ancient in their respective sub-branches, it is clear that none of them can as such be reconstructed to primitive Indo-European. In fact, as far as I am aware, Old Germanic, Celtic and Hittite have nothing that can be morphosyntactically compared with the Old Indo-Aryan gerunds in terms of petrified oblique deverbal action nouns recategorized as *verbal* adverbs or 'modal infinitives', while the diverse Armenian, Slavonic, Baltic and even Latin 'gerundial' formations are comparatively recent developments (especially when based on participial or adjectival forms). It seems that there are nowhere any 'genuine' verbal adverbs, i.e. adverbs derived from the root or verbal stems by specifically *adverbial* suffixes and having *verbal* rection.

The primary syntactic function of Indo-European infinitival formations seems to have been that of complementing verbs of motion (later also wish, intent, ability, etc.) by expressing purpose or goal (as associated mainly with the accusative and dative cases). It has been suggested that a similarly ancient function was that of expressing concomitant action or attendant circumstances, as associated mainly with the instrumental and/or accusative cases (Gippert 1978). The generalized function of forming a clausal subject or object (originally expressed by finite correlative or asyndetic structures, cf. Holland 1984) would then be secondary developments, mostly associated with increased formal assimilation of the infinitive into the finite verbal paradigm (cf. Jeffers 1972).

It may hence seem like a paradox that the most ancient functions are often handled by 'recent' innovations (cf. the Vedic **-tu**-infinitives and Latin supine) with partly nominal

[21] Note that the Slavonic adverbial present participles have relative *past* tense when formed from perfective verbs (ibid.). In the case of the Sanskrit gerund, it was seen that the aspect of the verb has only secondary influence on the relative tense of the gerund (cf. 2.3.B, 3.2, 3.3).

character, while some of the less productive infinitives (cf. Vedic **-dhyai**, **-sani**, **-ase**) are actually the ones that have the widest distribution in Indo-European, appearing often in 'secondary' infinitival functions and assimilated into the finite verbal system. This state of affairs may be explained by assuming several chronological strata in the formation and functional development of infinitives (Jeffers 1972).

While the Old Indo-Aryan and Avestan infinitives have not, despite many formal innovations, developed far beyond the morphosyntactically "nominal" stage (as also seen in their imperfect expression of finite verbal categories such as tense, voice and mood), ancient Greek, Latin and the modern Germanic languages developed a purely "verbal" system of 'proper infinitives' side by side with a formally largely renewed "nominal" system of infinitives or 'supines' (cf. Gippert 1978).

Although we cannot reconstruct any one specific infinitival formation to proto-Indo-European, the very process or model of 'infinitivization', i.e. paradigmatic isolation and recategorization of various case forms of nominal derivatives as more or less integrated parts of the (non-finite) verbal paradigm, is thus an extremely ancient[22] and *recurrent* phenomenon throughout the history of the Indo-European languages.

The system of 'verbal adverbs' or 'modal infinitives' (expressing concomitant action or attendant circumstances) is closely linked with this process, although the underlying stems or paradigms as well as cases tend to differ from those of the productive infinitival formations, cf. the Greek verbal adverbs in -δον, -τι, etc., the Classical Latin ablative gerund in **-ndo** (as expressing manner or circumstance), and the Indo-Iranian compound instrumental infinitive in ***-(t)yā**, which was recategorized as a (productive) past verbal adverb/indeclinable conjunctive participle in proto-Indo-Aryan and (hence) formally complemented with a simplex allomorph (**-tvā**) from the emerging paradigm of **-tu**-infinitives (which are paralleled in Iranian only by purely nominal formations). Thus the recategorization of the gerund is historically linked with the emerging of the **-tu**-infinitives.

However, 'verbal adverbs' do not appear as productive in any of the other subbranches (except in late Latin), while in Indo-Aryan they are so only by virtue of having received a new function. Evidently, verbal adverbs did not play a crucial role in the expression of concomitant action or attendant circumstances on the clause level in early Indo-European. In this function we find instead mainly asyndetic clauses and conjunctive participles.[23]

[22] Cf. Brugmann 1906 = Grundriss² II:1, p. 638f.; Wackernagel 1920, p. 257ff.

[23] Conjunctive and non-restrictive attributive participles, especially of the present, expressing concomitant action or attendant circumstances are found in all ancient Indo-European languages, though their use seems to have been most profuse in Classical Greek and Latin (cf. Delbrück 1879, p. 125; Stolz & Schmalz 1928, p. 602ff.; Wackernagel 1920, p. 282ff.; Schwyzer 1950, p. 385ff.; Chantraine 1953, p 319ff.; Humbert 1972, pp. 127ff., 170ff.). In medieval Latin the conjunctive present participle rose to a more prominent position in additive-sequential linkage (Tidner 1982, p. 214), but was operationally more constrained than e.g. the Sanskrit gerund. As for the absolute participial construction, it can be traced to backgrounded nominal incorporated sentences, being originally restricted to nominative, rather than instrumental (as argued by Aalto 1979) or locative absolutes (cf. Holland 1986).

In particular, none of the ancient Indo-European languages had *preterital* verbal adverbs, the functions of which could be performed by absolute and conjunctive participles and finite coordinate or dependent clauses. Thus the Indo-Aryan past gerund corresponds functionally to a conjunctive or absolute preterital participle or a finite coordinate clause rather than to an oblique action noun or verbal adverb in Indo-European at large. Its closest functional parallel (apart from the Tocharian adverbial participle) is the Greek aorist participle (and the corresponding Old Church Slavonic preterital participle), which unlike the verbal adverbs may be used with dependence on the mood of the main verb in additive-sequential linkage (cf. Ružička 1963, p. 78ff.):

(741) Luke 17.14 (cf. 5.14; Mark 1.44; Matthew 8.4)
πορευθέντες ἐπιδείξατε ἑαθτοὺς
'Go and show yourselves to...'

(742) Luke 14.10
πορευθεὶς ἀνάπεσε εἰς τὸν ἔσχατον τόπον
'Go and settle down on the last place!'
Cf. Latin ...**vade, recumbe...** '... go, settle down... '

In Homeric Greek this sort of 'modal transfer' is mainly restricted to the present or aorist participle of verbs of motion (e.g. Od. 2.288 ἀλλὰ σὺ μὲν πρὸς δώματ' *ἰὼν* μνηστῆρσιν ὁμίλει 'but go you now to the house and join the company of the wooers'). Of course, the participial clause may also be propositionally restrictive or presupposed, in which cases the mood does not carry over elliptically:

(743) Luke 22.32
καὶ σύ ποτε *ἐπιστρέψας* στήρισον τοὺς ἀδελφούς σου
'And upon some time returning, strengthen your brothers!'

It appears now that the Indo-Aryan gerunds are distinguished from their Indo-European functional counterparts by distinctive features on all linguistic levels: morphology, syntax, semantics, and pragmatics. In addition, they are typologically aberrant in Indo-European, since they are temporally differentiated (mainly) on the basis of a reinterpretation of the opposition between the accusative and instrumental cases. By this set of criteria it is obviously impossible to reconstruct such a system of 'verbal adverbs' to any early form of Indo-European.

A somewhat different view has been taken by Hock (1984, p. 96f.), who compares the Sanskrit gerunds with Indo-European adpositional or nominal phrases as found also in

Hittite, Armenian and Celtic. But the latter formations are purely nominal or even phrasal. Thus, for example, Avestan prepositional phrases headed by **pasca** (e.g. Yt. 10.133 **pasca *jainti* daēvanąm**... 'after the smiting of the evil gods...') can be etymologically compared only with post- or prepositional phrases in Sanskrit (cf. 5.1.M). Similarly, locative verbal nouns used as temporal-circumstantial adjuncts are common in ancient Indo-European languages (cf. Holland 1986, p. 190), but only if syntactically recategorized as verbal adverbs (with verbal rection) could they be compared with the Indo-Aryan gerunds.

## 6.4.H. PREHISTORICAL DEVELOPMENT ON THE INDO-ARYAN GERUND

Even if one could reconstruct some of the Indo-Aryan gerundial formations to at least proto-Indo-Iranian (the chief candidates being **-yā** < **-ya-** and **-am**), it would not be possible to account for their temporal differentiation in (pre-Ṛgvedic) Indo-Aryan. There is no Indo-Iranian, let alone Indo-European, basis for a spontaneous development of the predominantly past relative tense (and additive-sequential function) of primary instrumental action nouns.

It is true that deverbal action and agent nouns are temporally unmarked (cf. root nouns like **vṛtra+han-** 'one who kills/has killed/will kill Vṛtra'; Biese 1945, p. 12), but there is a long way to *predominantly past relative tense* (as established already in the Ṛgveda) from temporal or aspectual *indifference*. This long way has been traversed in a remarkably short time, especially if we assign it to the specifically Ṛgvedic dialects, considering the rather close (or secondary) dialectal unity between the (early) Ṛgveda and the Avesta, cf. **l** > **r** in most of Iranian and early Ṛgvedic, but not in Nuristani nor in eastern Old Indo-Aryan.

It is well-known that Old Indo-Aryan was far from a homogeneous language. Even the Ṛgveda contains phonological and morphological variants belonging to diverse dialects and periods, while some of the most archaic variants are actually attested only in the post-Ṛgvedic language (Renou 1957, p. 7ff.; Emeneau 1966; Gonda 1971, p. 17ff.; Burrow 1973, pp. 45ff., 95; Deshpande 1978). This is consistent with the archeologically established fact that the Aryan migration to India started already in the beginning of the first half of the second millennium B.C. (Allchin & Allchin 1968, p. 149; Jarrige 1987), while the earliest hymns of the Ṛgveda were composed probably only after the middle of the second millennium by a later wave of immigrants, as suggested by certain late Indo-Iranian cultural (e.g. the Soma-cult) and linguistic features (e.g. **l** > **r**, see above; **-mas** '1. pl. act. prim.' > **-masi**; **-ās** 'nom. pl. them.' > **-āsas**) of the Ṛgveda (cf. Parpola 1974, p. 96ff.; 1983, p. 42ff.). It has been hypothesized on archeological, cultural historical and linguistic grounds that the Dāsas, the chief opponents of the Ṛgvedic Aryans, were speakers of such

pre-Ṛgvedic (Indo-)Aryan dialects (cf. Parpola 1983, 1987). Inasmuch as the Ṛgvedic Aryans were probably first directly confronted with such pre-Ṛgvedic Aryans, any non-Aryan linguistic influence at this stage must therefore have spread as dialect loans from the pre-Ṛgvedic dialects into the Ṛgvedic dialect(s).

There are several reasons to assign the syntactico-semantic development of the past gerund (incl. the development of the suppletive simplex **tvā**-form which was necessary for the subsystem to be complete) to the more easterly or peripheral non-Ṛgvedic Indo-Aryan dialects. These dialects display certain innovations, e.g. retroflexion of dental stops after liquids (cf. Deshpande 1978, see 6.5.A) and the (predilection for) originally mostly simplex **-tu**-infinitives (esp. **-tum**, which has, as it seems, independent parallels in Baltic, Slavonic and Latin; cf. Renou 1937).[24]

The fact that the gerund in **-tvā** (like the Ṛgvedic nominal **tu**-stems) resists composition more strongly than the infinitives from **-tu-** (or even the **tva**-stems), although gradually losing much of this aversion (Renou 1937, p. 20f.), shows that the past gerund emerged as a distinct morphosyntactic category at quite an early stage, in morphosyntactic dis-association from the emerging **-tu**-infinitives. This is also confirmed by the strictly verbal rection of the gerund, as against the frequent nominal rection of most of the **-tu**-infinitives in the Ṛgveda (cf. Renou 1937, p. 24ff.). On the other hand, it is hardly a merely internal chronological development that the increased use of the gerund in the post-Ṛgvedic language is paralleled by increased use of the infinitive in **-tum**, and that the gerund is less common in the Kāṭhakasaṁhitā (of the northwest) than in the more easterly and southern recensions of the Yajurveda, i.e. Taittirīya- and Maitrāyaṇī-saṁhitā (for the original areas of the Vedic schools, cf. Witzel 1982, 1987).

The hypothesis that the past gerund of the Ṛgveda is an eastern or peripheral dialect loan/feature would also be in harmony with the fact that the Ṛgvedic variant in **-tvī**, which is evidently an innovation based on **-tvā**, is confined to the (north)west (cf. 6.1.B), and that the relative frequency of the gerund shows remarkable anachronisms in most of the Ṛgveda (cf. 2.2.A). Moreover, it would explain why there are hardly any traces of the original 'non-preterital' or temporally unmarked modal-instrumental value of the gerund in the early Ṛgveda (cf. 3.2). On the other hand, the two cognate and two final gerunds in the Atharvaveda could principally be syntactic archaisms (stemming from the older, pre-Ṛgvedic dialects), especially because they no longer represent productive constructions even during the early Vedic stage. Non-preterital gerunds do occur in Epic and Classical Sanskrit and especially in Pali and later Indo-Aryan, but they are more productive and syntactically of a different type than the said Atharvavedic constructions.

It is well-known that the syntactico-semantic and morphological development that led to the category of the past gerund occurred in a linguistic area which is characterized by

[24] Jeffers (1972, p. 100ff.) has argued that the Sanskrit infinitive in **-tum** is the result of secondary inter-dialectal influence within Indo-European after the Indo-Iranian stage, but this is, after all, unlikely.

structurally and syntactically more or less analogous categories, some of which are quite ancient in their respective families. But if this development is due to a non-Aryan sub- or adstratum, one should expect there to be other early linguistic influences from the same source, in particular lexical loans. Although structural borrowing presupposes lexical borrowing, these processes need not, however, be commensurate: several cases have been reported where there has been considerable structural borrowing without large-scale lexical borrowing (cf. Weinreich 1968; Weinreich & al. 1968; Moravcsik 1978a, p. 107f.). This is amply illustrated even in the modern Indian context (Gumperz & Wilson 1979; Krishnamurti & al. 1986).

In cases of structural borrowing, it has also been observed that "the ease of adoption of outside features depends on the degree of variation admitted in the respective component of a language" (Winter 1973, p. 144). It follows that "syntax is particularly amenable to change where a variety of synonymous expressions is found in a language anyhow (i.e. in major constructions), but on the other hand be relatively stable where certain configurations have no intralinguistic competitors (as would be the case in very many phrasal constructions)" (ibid.). On the other hand, once the loan or calque has been established in one dialect, it is easily transferred to other dialects of the same language, since "there is [within a language] no limitation on the patterns and features transferred, [while] the impact of outside languages varies considerably depending on the component ('level') of language involved" (Winter 1973, p. 146; cf. Anttila 1972, p. 169ff.).

These general observations have particular bearing on the present issue: the syntactico-semantic reinterpretation of the prehistorical past gerund did not affect any linguistic segment or immediate syntactic environment of the formation (excepting possibly the development of the suppletive simplex form, which nevertheless may have antedated the semantic change and which was based on inherited morphological material). Neither did it introduce a new semantic distinction or even a new construction into the system of clause linkage. Hence it was liable to escape rectification even in the 'literary' language, especially since it simplified a more cumbersome expression, i.e. the adnominal reduplicated perfect participle, and reduced coreferential and temporal ambiguity in topic-continuous additive-sequential linkage, which until then had been mainly in the hands of finite clause chains. By contrast, any change that might have influenced a morphemic or phonological segment or tight morphosyntactic subsystem of the language, would have been more strongly resisted under the circumstances.

Although the theory that the syntactico-semantic reinterpretation of the gerund was due to an Indian sub- or adstratum (most probably Dravidian) is quite old and in some form or other accepted by many scholars, the identification of this sub- or adstratum is made exceedingly difficult by the obscurity and considerable complexity of the linguistic prehistory of the Indian subcontinent.

Since the development of a category corresponding morphosyntactically to the Indo-Aryan past gerund did not occur in Old Iranian (cf. 6.4.B), we may at least conclude that this sub- or adstratum was not a language (group) whose contact with Indo-Aryan was confined to the common Indo-Iranian period. This would *a priori* exclude e.g. Finno-Ugric[25] influence, although we find highly productive (genitive-)instrumental verbal adverbs with modal-instrumental and (especially in Permic) additive(-sequential) or 'copulative' function in most of the Finno-Ugric[26] and some of the Samoyed languages (Hakulinen 1978, p. 575ff.; Collinder 1957; Fokos-Fuchs 1958; Künnap 1971, p. 152; Bartens 1979; Janhunen 1982, pp. 33f., 38f.).[27]

Unless it is because both instrumental gerunds and retroflex systems have had wider and more complex areal implications in the western parts of Central Asia at the time, it must then also be a mere coincidence that at least a voiceless retroflex sibilant has been reconstructed to proto-Finno-Ugric (cf. Janhunen 1982, p. 24). Retroflex cerebralizing voiceless sibilants, which were allophonically voiced and then lost with the general loss of voiced sibilants in Indo-Aryan, are considered to have been pivotal in the pre-Ṛgvedic development and spread of retroflexion in the so called *ruki*-context (e.g. PIE ***dvis-to-*** > IIr. ***dvišta-*** > OIA **dviṣṭa-** 'hated'; PIE ***ni+zd-o-*** > IIr. ***nižda-*** > pre-IA ***nižḍa-*** > OIA **nīḍa-** 'nest'; see below).

Since both the past gerund and the retroflex system appear fully established already in the Ṛgveda, their emergence must have been pre-Ṛgvedic and perhaps due to the same northwestern sub- or adstratum. It is therefore important to deal with these features in relation to each other. The major problem is that apart from a vague (post)alveolar or prepalatal affricate/fricative ***c*** (and its dental, palatal and occasional retroflex reflexes) in Dravidian, retroflex sibilants are conspicuously absent in the non-Aryan languages of the Indian subcontinent. An exception may be the northwestern isolate Burushaski, where,

[25] For Finno-Ugric influence on (Indo-)Iranian, see Joki (1962, 1973, p. 373); cf. also Rédei (1986) on more recent lexical explorations in Indo-European-Uralic contacts.

[26] Due to the loss of the Uralic genitive(-instrumental) case affix ***-n*** in Ugric and Permic (cf. Majtinskaja 1974, p. 238), there can be no (inherited) instrumental gerunds in these subgroups. In fact, the Hungarian 'modal gerunds' (**-vá/-vé**, **-ván/-vén**) go back to lative and lative + superessive case forms of the (imperfective) agent noun/participle (cf. Majtinskaja 1976, p. 400; Papp 1968, p. 212ff). The instrumental 'modal-copulative' gerunds of Permic Votyak and Ziryene and (perhaps) Ugric Vogul must then be innovations inspired by the surrounding Turkic or Finnic languages.

[27] From an areal linguistic and typological point of view it is noteworthy that e.g. Old Turkish and Uigur had perfective/non-durative gerunds formed by instrumental (possibly also ablative) case affixes from verbal nouns or perfective verb stems, while also the bare perfective stem (underlying Turkish **-p** < ***-ba/*-bi**; Ramstedt 1952, p. 132; Brockelmann 1954, p. 242f.) served as an originally operationally non-integrated modal-copulative gerund (Schulz 1978, p. 128; cf. Jansky 1954, p. 107ff.; Lewis 1967, p. 177ff.). Similarly, many of the Tibeto-Burman languages possess modal-copulative gerunds formed from (de)verbal stems by means of especially ablative and instrumental postpositions (cf. 6.7), while even the Tocharian adverbial participles are formed by adding ablative or perlative/instrumental case markers to the substantivized perfect participle (cf. also the Finnish partitive (< ablative) past participle used as a temporal quasiclause expressing a completed action, see 6.4.C).

however, (part of) the retroflex series seems to be recent and phonetically (post)alveolar rather than retroflex, as is (or has been) the typical case with the retroflex systems of the Nuristani, Dardic and Eastern Iranian languages (cf. Grierson 1924; Morgenstierne 1926, p. 41; Morgenstierne in Lorimer 1935a, p. XXIII; Lorimer 1935a, p. 5).

## 6.5. POSSIBLE DRAVIDIAN INFLUENCES ON ṚGVEDIC SANSKRIT

The Dravidian languages are now spoken mainly in South India (incl. the adjacent islands) and by small scattered populations in certain mountaineous areas in central and northeastern India and western Pakistan, southeastern Afghanistan and Southern Turkmenia (cf. Andronov 1980, p. 15).

The geographically extremely wide but remarkably scattered distribution and generally western and central Asian typological affiliations of the Dravidian languages do not lend support to the hypothesis that the Dravidians settled in India from the south or east. Though not necessarily the only ethnic element in this area, Dravidian speakers probably occupied at the time of the Indo-Aryan conquest a much larger territory in North and Central India. The displacement of the North Dravidian languages by Indo-Aryan languages has been slow and incomplete, being in some cases hampered by environmental or sociolinguistic isolation or extensive bilingualism in peripheral language contact areas (cf. Southworth 1974; Gumperz & Wilson 1971).

The isolated Brahui spoken by nomadic peoples in the highlands of Baluchistan and Sind in western Pakistan and adjacent regions in the neighbouring countries to the west and north, is usually linked with North Dravidian Malto and Kurukh, though according to Andronov (1980, p. 15ff.) it is lexically and phonetically rather uniquely opposed to all the other Dravidian languages. But even if Brahui should not turn out to be the first relic-like offshoot of Dravidian, which according to Emeneau (1962, pp.62-70, fn. 10) is represented by the central group Kui-Kuvi (in Orissa), it does not follow that it has moved from the same secluded area which is now occupied by the latter group. As observed by several scholars in the past, it would indeed, be *prima facie* improbable that a tribal non-Aryan language such as Brahui could have made its way so far up to the specifically (and from ancient times almost exclusively) Indo-Aryan north(west) from an original southern or central Indian position, when the general tendency is for the northern non-Aryan languages to be absorbed or recede towards the south and east, unless protected environmentally or by bilingualism.

The presence of Brahui in the Indus Valley has been used as a major argument for the hypothesis that the administrative language of the Indus City Civilization (appr. 2600-1800

B.C.) was Dravidian. Recently more and more compelling evidence in this direction has been brought to light. Especially significant are the early Dravidian loanwords for cultural products that can be traced back to the Indus Civilization. E.g. the Late Harappan type of fireplace consisting of three supporting stones is known in the Indo-Aryan languages under (partly reinterpreted) Dravidian names (Sanskrit and Prakrit **(c)ullī-**, cf. proto-Dravidian ***cull-V** 'fireplace, hearth' DEDR 2857; Parpola 1985, p. 56ff., 84ff.).[28]

An even stronger indication of the (partly) 'Dravidian identity' of the Indus Civilization is the Dravidian word for sesame (imported from the Indus Valley) in Mesopotamia, cf. Akkadian **ellu/ūlu** 'sesame oil; pure', to be compared with Tamil **eḷ, eṇ** '*Sesamum indicum*', Malayalam **eḷ(ḷu)** 'sesame', Kannada **eḷ(ḷu)** '*Sesamum indicum*', Kodagu **ēḷḷī** 'gingily seed', Tulu **eṇme** 'gingily oil seed' (DED 726; Bedigian 1985, p. 163, 165). Simo Parpola (personal communication) has pointed out that this word must have been borrowed through Sumerian (**ilu/ili**), attested already in a lexical text from Ebla around 2400 B.C.), and this makes its appearance in Mesopotamia coincide with the heyday of the Indus civilization (for the Sumerian textual reference, see Ciril 1982, pp. 4, 14).

It has also been suggested that the name for the Indus Civilization in Sumerian cuneiform sources, **Meluḫḫa**, derives from Dravidian, cf. proto-Dravidian ***Mēl-akam** 'High country', which word would then also underly Sanskrit **mlecchá-** 'savage who speaks (Sanskrit) barbariously' and Prakrit **milakkha-** (Parpola & Parpola 1975; Parpola 1974, p. 93 fn. 3; cf., however, also the suggested IE etymology ***mlais-sko-** > Cymric **bloesg**, Latin **blaesus**; see Liebich 1936). Similarly, the toponyms Magan and Makran may go back to Dravidian **makaṉ** 'son, man, people' (Hansman 1973, p. 568 fn. 91; Parpola & Parpola, ibid.).

The most compelling piece of evidence would nevertheless be the Dravidian identity of the language underlying the Indus (Harappan) script. The only promising attempts (e.g. Parpola 1975; 1986) to decipher some of the Indus characters are, in fact, based on this assumption, though none of these attempts has met with universal approval due to the fragmentary and — in the absence of bilingual texts or larger material — necessarily unverifiable character of the proposed interpretations (cf. Zvelebil 1970, p. 194ff.). Although this does not prove the said hypothesis, recent computational studies of the formal structure of the script show that the underlying language was specifically of the agglutinative and left-branching type (Koskenniemi 1980), which typology would fit Dravidian (and Elamite, which may be a distant relative, cf. Vorob'ev-Desjatovskij 1956, p. 100f.; McAlpin 1979), but not equally well (Old) Indo-Aryan, let alone Munda, Burushaski or (early) Tibeto-Burman.

In view of the enormous expanse and cultural homogeneity of the Indus Civilization,

[28] For further possible cultural-linguistic evidence, e.g. **kinnara-** 'divine musician' < *'harp' < Drav. ***kin+naram** '(musical instrument) with a resounding string' > Old Babylonian ***kinnārum** 'lyre', etc., cf. Parpola (1983, p. 57ff.; 1986, p. 119).

this assumption would imply that Dravidian was spoken over a vast territory centering around the Indus Valley at the time of the Indo-Aryan wave-like invasion(s) in the beginning of the second millennium B.C.

One would then expect mutual linguistic traces of the inevitable contact of these peoples from an early period. Because of the absence of North Dravidian literary sources, such linguistic contact is first demonstrated on the Dravidian side only in the comparatively recent Old Tamil literature (from the second or third century B.C.). On the other hand, Indo-Aryan influence has been found at all levels in the modern Dravidian languages (for a concise assessment, see Sridhar 1981).[29] On the Indo-Aryan side, the first possible indications of Dravidian influence are met with in the much earlier Vedic (though mainly post-Saṁhitāic) literature (cf. Burrow 1973, p. 381ff.). Of particular interest are the North Dravidian loanwords having an (optional) initial laryngeal reflecting a subphonemic glottal stop absent in South Dravidian (e.g. Cl. Skt. **eḍa-** 'goat', cf. Brahui **hēṭ** 'she-goat', DED 4229; **hoḍa-** 'boat, raft', cf. Tamil **ōṭam**, DED 876; cf. Parpola 1977/1978).

Nevertheless, prehistorical Dravidian influence on Indo-Aryan has often been doubted, because there are no absolutely certain Dravidian loanwords in the earliest Indo-Aryan document, the hymns of the Ṛgveda. Thus of the alleged 10-20 Dravidian loanwords in the Ṛgveda (e.g. **mayūra-** 'peacock', **phála-** 'fruit', **kāṇá-** 'one-eyed', **káṭuka-** 'bitter', **khála-** 'threshing floor', **ulūkhala-** 'mortar', **bíla-** 'cave', **mukhá-** 'mouth'; cf. Burrow 1973, p. 385; Emeneau 1954, 1971; Southworth 1979; Mayrhofer 1956-1980, s.vv.; DED, s.vv.), there is none that has not been assailed on the strength of a competing Indo-European etymology, or because of the uncertainty of the Dravidian etymology (cf. Thieme 1955, p. 436ff.; Hock 1975, p. 85ff.; 1984, p. 91ff.; Mayrhofer 1956-1980, s.vv).

As a necessary word of warning against trusting the alleged Dravidian loan-words too easily, Hock (1984, p. 92) has shown with two examples (**car-** 'move' and **mṛ-** 'crush') that it is sometimes possible to come up with Dravidian chance correspondences for Indo-Aryan words with an impeccable Indo-European etymology (cf. Tamil **cel-** 'go' and **muṟi-** 'break'). One may, nevertheless, query the alleged facility with which this is done and the notion that it is quite accidental that so many early Vedic words lacking a satisfactory Indo-European or at least Indo-Iranian etymology (and they are not, after all, statistically frequent) should be found to have an attractive Dravidian explanation, especially in view of the many certain Dravidian loanwords in later Vedic/early Classical Sanskrit and Pali, which words must have been borrowed mainly in the central Gangetic

[29] According to Zvelebil (1970, p. 18) the disintegration of proto-Dravidian took place well before the 15th century B.C., while Andronov (cf. 1980, p. 17) postulates on glotto-chronological grounds that it cannot have taken place later than between the fourth and third millennium B.C. But the glotto-chronological method is far from reliable, especially under circumstances of extensive borrowing as in North and Central Dravidian (cf. Hock 1975, p. 88 and the reference to McAlpin 1975, p. 114).

plain (cf. Burrow 1973, p. 381ff.).

## 6.5.A. RETROFLEXION

Since the alleged Dravidian loanwords in the Ṛgveda remain more or less uncertain 'acts of faith', one may try to find other possible indications of early Dravidian influence on Indo-Aryan. The oldest and most widely supported case in point are the retroflex consonants (for a brief history of research, see Deshpande 1979, p. 236ff.; cf. also 1.5.P). A major argument is that apart from Dravidian and (probably) Burushaski, such segments cannot be reconstructed to a similarly early stage in any other *extant* contiguous South Asian family, while they clearly represent a very ancient innovation in Indo-Aryan.

Retroflex (or at least postalveolar) consonants appear as fully established systems of allophones (of dental/alveolar stops and palatal sibilants) and phonemes (contrasting with dental stops and sibilants) already in (pre-)Ṛgvedic Indo-Aryan. Deshpande (1979) has argued on the basis of internal and textual evidence that retroflexion (as defined according to the major classical tradition) was still a foreign habit to the speech of the Ṛgvedic poets. His conclusion that the retroflex/dental contrast is post-Ṛgvedic has, however, been contested by Hock (1979) on the grounds of such external evidence as "the highly patterned, rule-governed degeneralization of retroflex sandhi across word boundary, which can be observed in the Ṛgveda and [which] constitutes an early phase of a change that gets virtually completed in the Classical period" (Hock 1984, p. 102).

The phonological contrast dental vs. retroflex/postalveolar, if phonematic and involving more than one phoneme, is, by and large, a rare one in the world's languages. Hence it is *a priori* not likely to have arisen spontaneously in two unrelated but adjacent language families "roughly" at the same time. The recent and mostly quite restricted cases of retroflexion elsewhere in Indo-European evoked by Hock (1975, p. 101f.; 1984, p. 104) are hardly comparable to the Old Indo-Aryan retroflex system, which remains the earliest and yet the largest-scale case of retroflexion in Indo-European and one of the largest-scale cases of retroflexion in the whole of Eurasia.[30] As a point of contrast, it may be mentioned that it took Swedish, which has never been spoken in an area with retroflex systems, nearly three millennia longer for a system of roughly similar complexity to develop (and that only in the 'main dialects'), while in other non-Aryan Indo-European languages, retroflexion is mainly confined to allophonic variation in a single phoneme.

[30] Hock (1984, p. 104) has pointed to the presence of retroflex systems and some other shared typological features, such as 'absolutives' and SOV-order, in both Archaic Chinese and some Australian aboriginal languages. In Archaic Chinese medial r merged with a *preceding* dental stop or affricate into a corresponding retroflex stop or affricate (Li 1983, p. 397f.), while this type of change has occurred only in the northwestern Aryan and Tibeto-Burman languages.

Outside the present South Asian context, retroflex systems represent, in fact, such a marked and areally restricted feature that none of the Indo-Aryan Romany languages has been able to retain a single retroflex segment (cf. Turner [1926] 1975, p. 258), and retroflexion has never extended beyond India to the east (or even wholly to the Tibeto-Burman north), despite extensive lexical (incl. 'orthographic') borrowing from Indo-Aryan and Dravidian. On the other hand, if Indo-Aryan retroflexion is not an entirely spontaneous development, it must have been so in the ultimate substratum on which it (partly) developed.

Judging by the facts that the retroflex consonants are (largely) due to cluster simplification and partial assimilation also in proto-Dravidian (Zvelebil 1970, pp. 172ff., 178ff.; Andronov 1978a, p. 160ff.; cf. Hock 1975, pp. 89ff., 98ff.) and that cluster simplification and assimilation have been on the whole more pervasive phenomena in early Dravidian (Zvelebil 1970, p. 177; Meenakshisundaran 1965, p. 19) than in early Indo-Aryan, retroflexion has been part of a larger and older phonological evolutive process in Dravidian than in Indo-Aryan. The fact that proto-Dravidian had a third contrast, i.e. alveolar **t̲** and **n̲**, which was lost in North and parts of Central Dravidian, does not significantly disturb the picture, since the phonematic distribution shows that the alveolar series was originally just as secondary as the retroflex one and only partly contrastive with the latter (cf. sporadic alternations like **ṭ : t̲** and **ṇ : n̲**; Zvelebil 1970, pp. 102, 129f., 171ff.).

Both alveolarization and retroflexion of dental stops in proto-Dravidian are thus reflections of the same coarticulative process, i.e. the retraction of the point of articulation of dentals after retroflex and alveolar sonorants (with or without subsequent merger), mainly **l̲** (= **r̲**), **ḷ**, **ṉ**, **r**, **l** and **n̲**, cf. **ṉ** < **r̲/ḷ**+N, **ṉṭ** < ***ṉt**, **t̲(t̲)** < ***lt**, **ṉṭ** < ***ḷnt**, **ṭ(ṭ)** < ***ḷt**, etc. (Zvelebil 1970, pp. 102ff., 171ff.).[31] As such, Dravidian alveolarization/retroflexion may have developed spontaneously over a long period of time, or it may have received some kind of initial impetus from an extinct South Asian substratum.

Now these combinatory changes give chronological and structural precedence to retroflex and alveolar sonorants (especially liquids) in the system and processes of Dravidian retroflexion, whereas in Indo-Aryan it is usually assumed to have started in native words with the retroflexion of on one hand the palatal(ized) sibilants in the so called *ruki*-context (except when followed by **r̥** or word boundary), and on the other hand of the spirantized palatal stops before **t**, **d** and (word-final) **s**: ***s/*z** > ***š/*ž** > **ṣ/*ẓ/{r̥, u, k, i}__{-r̥, -#}**; ***k'/*g'** > **ṣ/*ẓ/__{t, d}**. Analogically also ***g'h** > ***ẓh/__{t, d}**, but due to the phonetic and typological oddity of voiced aspirated alveolar and retroflex fricatives, Nelson (1986, p. 105) has recently suggested that the preceding Indo-Iranian change yielded ***jh**, rather than ***žh** > ***ẓh**, thus e.g. ***lig'h-ta** > ***lijhta** > (Bartholomae's Law) IIr. ***lijdha** > ***lijḍha** > Skt. **līḍha** 'licked'.

Given the progressive assimilation of retroflexion to following dentals, occasional loss

[31] Cf. also **r̥ < rt** in Kui **āraṛini** (obl. sg.) < **ārar-ti-ni** < **āri** 'she' (Bloch 1946, p. 20).

or dissimilation of the conditioning context, and the retroflexion of **n** after **r** and **ṣ** (except when a palatal or dental intervene) and the earlier dialectical change **l+t[h]/d[h]/s/n** > **ṭ[h]/ḍ[h]/ṣ/ṇ**, we can then explain the retroflex segments in most of the Indo-Aryan words in the Ṛgveda, e.g. **vṛṣṭi-** 'rain' < ***vṛṣti-** < ***vṛšti-** < ***vṛsti-**; **dviṭ** 'foe; nom. sg.' < ***dviṭs** < ***dviṣṣ** < ***dviṣs** < ***dviš̌s** < ***dvik's**; **karṇa-** < ***karna-** 'ear'; **kāraṇa-** < ***kārana-** 'reason', etc. (Cf. Wackernagel 1896 = Ai. Gr. I, pp. 164ff., 229ff.; Burrow 1973, p. 976ff.) In other words, retroflex segments occurred mainly as allophones of dentals in the Ṛgveda (cf. Elizarenkova 1974, p. 203).

According to Hock (1975, p. 114f.; 1984, p. 103f.) the absence of retroflex sibilants in Dravidian as against the absence of final retroflex sonorants in Indo-Aryan and the (wrongly assumed) absence of progressive assimilation of retroflexion across syllable and word boundaries in Dravidian prove that Indo-Aryan retroflexion could not have originated and proceeded by way of convergence with the Dravidian retroflex system.

Clearly there are conflicts that cannot be easily explained on the assumption of early convergence on this point, but many of the divergent patterns appear in a different light if we consider the respective inherited subsystems, e.g. the general lack of sibilants in proto-Dravidian and the complex rules of external sandhi in early Indo-Aryan.

The absence of final retroflex sonorants in Indo-Aryan is a restriction which did not apply in internal sandhi nor when retroflexion extended across the word boundary (cf. TB **ṣaṇ ṇiramimīta**; Whitney 1889, p. 67), while the progressive assimilation of retroflexion (and alveolarization) across the word boundary is a common phenomenon also in Old Tamil (cf. PN 43.12 **kaivaṇ ṭōṉṟal** [< **t**...]), being still found in the context of word-initial nasals in at least one Modern South Dravidian language, viz Kota, e.g. **āḷ ṇōčṭ** 'the husband having looked' (Emeneau 1967, p. 67). Initial retroflex stops are on the whole just as rare in early Dravidian as in Indo-Aryan (outside the northwest), while it must be stressed that the only retroflex segment allowed in this position (outside external sandhi) in early Vedic Sanskrit is **ṣ**, which is lacking in Dravidian, and which occurs in this position only in a few words (e.g. **ṣaṣ-** 'six'; cf. Berger 1955, p. 70f.). It is hardly a coincidence that (also) the voiceless retroflex sibilant was lost in the Middle Indo-Aryan period specifically outside the extreme northwest, where retroflex sibilants and other segments still occur in all positions. This together with the fact that Nuristani and Dardic have not always undergone retroflexion under the 'normal' conditions, points to the complex and non-synchronous origins of retroflexion in early (Indo-)Aryan, only part of which developments need or can be due to Dravidian influence.

The apparently crucial fact that Dravidian does not possess retroflex sibilants, which were allegedly so pivotal in early Indo-Aryan retroflexion, loses some of its contradictory force, when we consider that Dravidian does not have any sibilants at all, except mainly as allophones or later developments of (post)alveolar or palatal ***c** (and possibly ***ṛ** if = [ʐ],

but cf. Zvelebil 1970, p. 148f.).[32] It was also observed that the Indo-Aryan system of sibilants was greatly simplified outside the extreme northwest by the already pre-Ṛgvedic loss of the voiced retroflex sibilant and the somewhat later loss of the voiceless one, which had a rather small functional load, being largely allophonic with both **s** and **ś**, though also occurring in loanwords and as a dialectal combinatory development of **ls** (cf. Vacek 1976, p. 6ff.). The fact that ***ṛ** was retained only in South Dravidian supports this (secondary and binary) convergence of North and Central Dravidian with Indo-Aryan.

Even if the retroflexion of sibilants in the **ruki**-context can hardly have been due to Dravidian influence, the subsequent (yet distinctly pre-Ṛgvedic) retroflexion of dental stops after preceding retroflex segments and the probably pre-Ṛgvedic retroflexion of dentals after **l** (into one segment) and **r** ( without fusion) are changes that are principally paralleled at all stages of Dravidian.

Furthermore, it may be noted that the actual pronunciation of the retroflex consonants has until recent times remained partly (post)alveolar rather than properly retroflex in the northwest (Grierson 1924; 1929, p. 9; Morgenstierne 1926, p. 95), while the gradual retraction of the point of articulation in the more easterly dialects must have been a precondition for the retroflexion of dental stops after retroflex sibilants, which change did obviously not occur in proto-Nuristani, nor perhaps in all ancient Northwestern Indo-Aryan dialects. In other words, those developments of the pre- or proto-Ṛgvedic retroflex system that increased the resemblance with the Dravidian system occurred after the separation of Nuristani and perhaps also some of the oldest Dardic dialects. If so, they must have occurred in the prehistorical Indo-Aryan dialects that had penetrated further to the (south)east, beyond the earliest Aryan settlements in the Hindukush region.

### 6.5.A.1. PREHISTORY OF INDO-ARYAN RETROFLEXION

The expected retroflexion of sibilants, which is regular after **r**, does not always appear after **i** and **u** in Nuristani and Dardic, nor does the progressive assimilation of retroflexion (or palatalization) to following dentals (***ṣt/*štˇ> ṣṭ**) always appear in these groups. E.g. Ashkun (Nuristani) **wis** 'poison' (< ***wiš**?), Kati (Nuristani) **wiš**, Skt. **viṣa-**, but Kati **viṣ** 'n. of a plant', cf. Skt. **vṛṣa-**; Kati **woṣ** 'rain', Waigali (Nuristani) **waṣ**, Skt. **varṣa**; Kati **dus** 'yesterday evening', Prasun (Nuristani) **ulus**, Waigali, Ashkun **dōs**, cf. Skt. **doṣā-** 'evening'; Prasun **mušt** 'fist', Ashkun **must**, cf. Skt. **muṣṭi-**; Prasun √**üšti** 'rise', but Kati **uṣṭ**, cf. Skt. **uttiṣṭhati**; Prasun **mūsū** 'mouse', Ashkun **mu'šā**, but Gawar-Bati (Dardic) **muṣo**, cf. Skt. **mūṣa-**; Prasun **pūšügū** 'flea', Skt. **pluṣi-**; Kati

[32] The complex system of sibilants in Toda (cf. Emeneau [1957] 1967, p. 4) results mainly from combinatory changes, while Saka (Iranian) influence has also been suggested (Parpola 1982).

**zōtr** 'friend', but Shina (Dardic) **joṭhī** 'female paramour', cf. Skt. **joṣṭṛ-** 'friend'; Prasun **'āstë**, **'astë** (< ***ac'te**) 'eight', Kati **uṣṭ**, **(w)uṣṭ** (< IA), Glangali (Dardic) **aṣt**, Khowar (Dardic) **oṣt**, cf. Waigali **ōṣṭ**, Skt. **aṣṭau-** < ***aštau-** < ***ok'tōu** (cf. Morgenstierne 1926, p. 54ff.; 1929, p. 199ff.; 1945, p. 229ff.; 1949, pp. 204, 207, 211; 1954, p. 164; 1973b, p. 340; Hamp 1968; Nelson 1986, p. 97).

Since the change ***rš/ž** > **(r)ṣ/ẓ** is found also in proto-Nuristani and early Eastern Iranian (cf. below), while the change **št** > **ṣṭ** is a specifically Indo-Aryan development (Nelson 1986, p. 78), we cannot accept Vacek's (1976, p. 85) theory that (Indo-)Aryan retroflexion started as a reinterpretation of the spirantized palatal stops before dentals, e.g. **št** > ***ṣṭ** > **ṭṭh**, etc. The phonetic status of proto-Nuristani **r**+sibilant clusters is not very well-known, but it seems that if the sibilant had been properly retroflexed, it would have caused the retroflexion of a following dental stop, especially because retroflex stops emerged from the combination with preceding or following **r**, which changes are paralleled in Dardic and Eastern Iranian, but not in (early) non-northwestern Indo-Aryan (cf. Nelson 1986, p. 63ff.). Although the Nuristani and Indo-Aryan retroflex systems and processes conform in general with quite different areal patterns, being largely independent of each other, they have a common ancient denominator in the increased retraction of palatalized sibilants after (especially) **r**. Thus we must assume that also proto-Indo-Aryan retroflexion started with the retroflexion of sibilants after **r**, for which development it may have relied upon the same external influence as Nuristani, or even Nuristani itself.

Thus it is not surprising that the failure of a preceding **u** or **i** to cerebralize a following dental sibilant in the same morpheme is sporadically observed even in Ṛgvedic and post-Ṛgvedic Sanskrit, which cases have been discussed in detail by especially Burrow (1976), e.g. RV **ṛbísa-** 'cleft, abyss' (JB **arvīṣa-**; cf. Lith. **ùrva** 'hole in the ground'), **kīstá** 'praiser, poet', cf. **kaēš-** 'teach' (Scheftelowitz 1907, p. 131),[33] **busá-** 'vapour, mist' (> 'chaff' < ? ***bhusa-**), AV **bísa-** 'lotus stalk, root-fibre, bulb' (lex. **viṣaṇḍa-** 'the fibres of the stalk of the water-lily'; cf. Lith. **vaisinù** 'make to grow'), TS **bársva-** 'gums' < ***balsva-** < ***wolswo-** (√***wels-/wols-/wḷs-**, cf. German **Wulst**, etc.).

Burrow (1976, p. 36f.) argued against Morgenstierne on the basis of the antiquity of the preceding change **s** > **š** in Indo-Iranian and Balto-Slavonic in these contexts that the above group of words does not show a preservation of Indo-European ***-s-**, but are due to later dialectal developments (shift from **-ṣ-** to **-s-**) within Nuristani and Indo-Aryan. This has been queried by Buddruss (1977, p. 38 fn. 61) and Nelson (1986, p. 96), who rightly observes that not all palatal sibilants revert to **s** in Nuristani as they do in (Western and Central) Middle Indo-Aryan. One may add some further arguments for considering this theory implausible. The change **s** > **š** does not occur in Sanskrit when **r** follows, showing

[33] Bailey (1955, p. 66) connected this word with Skt. **kīrti-** 'fame' and Avestan **kaēta** and Middle Iranian **kēta** 'learned man, magician', i.e. with **-tt-** > **-st-** (cf. Burrow 1976, p. 37).

that palatalization was rather heteregeneous in the diverse pre-Indo-Iranian dialects. Moreover, there is no equally natural phonetic explanation for the retroflexion of **s** after labio-velar vocalic **u** as there is after alveolar **r**, palatal **i** or even consonantal velar **k**. Obviously because of the loss or combination with **s**, the cluster **ks** tended to yield an alveolar, palatal or even retroflex affricate in Nuristani, which is a conspicuous feature in the absence of retroflex affricates in non-northwestern Indo-Aryan and Iranian (Nelson 1986, p. 82 ), cf. Ashkun **atsī** 'eye', Kati **acī**, Prasun **iẓī**, (contrast **yuṣ** 'demon', cf. Skt. **yakṣa**-), cf. Skt. **ákṣi**- < ***akṣi**- [Av. **aši**-] < ***akši**- < ***aksi**-.

The early Nuristani state of affairs is secondarily reflected also in Middle and New Eastern Iranian, which show retroflexion in the context of the palatalized sibilants and spirantized palatal stops, though often resulting in one segment, e.g. ***sr**, ***str**, ***rš**, ***xš** > **ṣ**; ***rz** > ***rẓ** > ***ẓẓ** > **ẓ**(**d**) (Èdel'man 1963, p. 70ff.). But as in Nuristani and Dardic, progressive assimilation of retroflexion to following dentals, has not always occurred, despite the presence of retroflex stops (deriving partly from ***rt**) in all Eastern Iranian languages except Munji, cf. Pashto (= **paṣtō**) **calwēṣt** < *-**rst** 'forty'; **ẓdan** < ***rz**- 'millet'; **laṣta** 'stick' < Dardic (cf. Panjabi **laṭṭhī**); **mūṭ** 'fist' (cf. Saka **muṣṭi**, Skt. **muṣṭi**-), Wakhi **möst**, **mič**, Yidgha **muṭʰ**, **mišč**, Munji **mušk**, Shugni **mut** (Morgenstierne 1940, p. 140f.; Èdel'man 1963, p. 77); Saka **māṣḍāna** [?-**ẓd**-] < ***mṛẓdāna** 'gracious' (Konow 1949, p. 18; 1932, pp. 8, 38; Èdel'man 1963, p. 70ff.). As a further point of difference, it may be noted that in the Nuristani, Dardic and Eastern Iranian languages retroflexion of sibilants occurred frequently also *before* a following **r**, cf. (North)eastern Iranian ***sr** > ***ṣ**, ***zr** > ***ẓ** (Morgenstierne 1940, p. 141; 1938, p. xvi; 1926, p. 56f.;1948; 1950; Èdel'man 1963, p. 70f.; Nelson 1986, p. 108).

It has been suggested that retroflexion occurred originally as a spontaneous phonological development of polarization to differentiate the inherited palatilized sibilants derived from dental sibilants from those derived from prepalatal stops (Hock 1975, p. 101f). But it is somewhat doubtful whether this alone would explain the alleged retroflexion of sibilants in Nuristani, where the prepalatal stops or affricates (***k'**, ***g'**) remained partly distinct from the palatalized sibilants (***š**, ***ž**) anyhow (cf. Kati **tsuī** 'empty', Waigeli **tsōn**, Ashkun **tsun** = Skt. **śūnya**-). According to Morgenstierne (1926, p. 58), the fluctuation between **š** and **c'** < ***k'** in Nuristani might in some cases have been caused by some kind of sentence sandhi, which preserved the affricate in certain positions, cf. Kati **šāī** 'head', but **ptsīr'** [-**c'**-] 'on the head'. Moreover, this polarization has not operated in some of the most crucial contexts even in proto-Indo-Aryan, e.g. ***št** > **ṣṭ** < ***st**/{**r**,**u**,**k**,**i**}__, and ***kš** > **kṣ** < ***ks**.

The Indo-European background of Indo-Aryan and Nuristani retroflex sibilants is thus to be sought in the earlier palatalization of dental sibilants after **r**, **u**, **k**, **i** in the *satem* group, i.e. Indo-Iranian, Baltic and Slavonic (cf. H. Andersen 1968). Since Nuristani (and Dardic) cerebralize sibilants more regularly after **r** than after **i** and **u** it stands to reason to

assume that the inherited point of articulation of sibilants after **r**, **ṛ** in proto-Indo-Iranian was somewhat more retracted than in other contexts of the *ruki*-rule.

The development of a new distinctive feature on the basis of this retracted pronunciation may have been aided by the introduction of an opposition between ***ṣ́/ẓ́** < ***ṣ/ẓ** after **r** and ***š/ž** < ***c'/j'** < ***k'/g'**, and/or through the introduction of loanwords with **ṣ́/ẓ́**. Since this change affected only those ancient Aryan languages that were spoken in and around the Hindukush area, it can have been due to a pre-Aryan Western Central Asian substratum, such as Burushaski, which has not only voiced and voiceless postalveolar-retroflex vs. dental and palatal sibilants, but also postalveolar-retroflex vs. dental-alveolar voiceless affricates. Retroflex voiceless affricates are also found in Nuristani and most of the Dardic and some of the Eastern Iranian languages, but nowhere else on the South Asian subcontinent (cf. Lorimer 1935, pp. xxiii, 5f.; Toporov 1965, p. 327f.; 1966, p. 185; Nelson 1986).

With the exception that the point of articulation of dentals/alveolars after postalveolar or retroflexed sibilants may have been somewhat retracted due to coarticulation, this is probably as far as proto-Nuristani or prehistorical Eastern Indo-Iranian and early Eastern Iranian retroflexion of (palatalized) sibilants went, and as such it may have formed the original basis also for pre-Indo-Aryan retroflexion before the leveling of the originally allophonic feature [+retroflex] to all palatalized sibilants and extension to following dentals or alveolars.

Together with these specifically Indo-Aryan innovations there was a change in the manner of articulation of these emerging retroflex ('**mūrdhanya**') segments involving the curling backward of the tip of the tongue ('**jihvāgraṁ prativeṣṭitam**'),[34] thus giving the proper retroflex pronunciation of ***ṣ́/*ẓ́** > **ṣ/*ẓ** vs. **ś/*ź** < ***š/*ž** < ***k'/*g'**, which may have been a prerequisite for the retroflexion of following dentals or alveolars. On the other hand, it is also possible that it was the very retroflexion of dentals after these palatalized sibilants that caused them to acquire a properly retroflex pronunciation. Perhaps a different substratum was at work here.

But proto-Nuristani and proto-Indo-Aryan retroflexion was not confined to the contexts of palatalized sibilants and palatalized spirantized stops. Retroflex segments arose also from the combination of stops with preceding alveolar liquids. Apart from the retroflexion of **n** after **r**, **ṛ** and **ṣ** (which assimilative process operated even at distance unless a dental, palatal or retroflex stop intervened and **r** or # followed), at least in the pre-Ṛgvedic **l**-and-**r**-dialects a dental stop or sibilant preceded by **l** merged with the latter into a corresponding

[34] Thus according to the Atharvaprātisākhya I.22 (Grierson 1924, p. 658). Note, however, that the Ṛkprātiśākhya (1.11) seems to define **ḍ** and **ḍh** as palato-alveolars (**jihvāmūlaṁ tālu ca**) and the dentals (**dantya**) as (pre-)alveolar (1.9: **dantamūlīya**), as against all other traditions including Pāṇini (Deshpande 1979, p. 243). This would, indeed, suggest that retroflexion was still only an emerging sociolectal or dialectal feature in Ṛgvedic Sanskrit and that retroflection was more advanced in the speech of the pre-Ṛgvedic Indo-Aryans.

retroflex stop or sibilant by a rule known as Fortunatov's Law.[35] E.g. *palta- > paṭa- 'cloth', cf. Russian **polotnó** 'linen cloth', Modern Persian **pardah** 'veil'; pāṣāṇa- 'stone, rock', cf. German **Fels**, Nuristani -**rš**- (Burrow 1972, pp. 531, 543; 1973, p. 97f.). This rule is also attested for **r+t/d/n** > **ṭ/ḍ/ṇ** in Nuristani (cf. Nelson 1986, p. 88). Thus any Ṛgvedic word with **ṣ** deriving from this combinatory development must (originally) belong to the earlier dialect(s).

In addition, in most (north)western and, especially, eastern Indo-Aryan dialects retroflexion of a dental stop (with regressive assimilation or fusion) occurred quite early also after **r̥**, e.g. **r̥t** > **ṭ**, **ṭṭ**, **r̥n** > **ṇ**, cf. RV **vikaṭa-** 'formidable' < **vikṛta-** 'deformed' (cf. Wackernagel 1896 = Ai. Gr. I, p. 167ff.); Gawar-Bati **wāṭ**, Khowar **bort** 'stone'; Tirahi **uṛe**, Pashai **haṛā** 'heart', Skt. **hṛ́daya-** (Grierson 1906, p. 122ff.; Morgenstierne 1947b, p. 150).

The retroflexion of a dental stop after **r** or **r̥** with (subsequent?) fusion and frequent compensatory lengthening of a preceding vowel, e.g. **rt** > ***ṭ** > ***ḍ** > **r̥**; **r(z)n** > **ṇ**, ~**r̥**; **rnt** > **ṇt** (**ṇṭ**), is also quite common in Modern Eastern Iranian, and is perhaps not wholly due to Indo-Aryan or Nuristani influence, cf. Yidgha **yāṛē** 'flour', Pashto **ōṛə** < ***ārtaka**, cf. Hindi **āṭā**; Yidgha, Parachi **muṛ** 'man', Pashto **məṛ**, Saka **muḍa-**, but Ossetic **mard**, Wakhi **mərt** < **mṛta-** 'dead', cf. Kati **kaṛā** 'done' < **kṛta-**; Yidgha **pūṇā** 'leaf' < ***pāṇ** < ***parna**, cf. Skt. **parṇa-** (Morgenstierne 1938, p. xvif.; Èdel'man 1963, p. 69f.).

From the point of view of articulatory phonetics, alveolar liquids provide the most natural contexts for retroflexion by combinatory or coarticulatory changes, cf. Swedish **rs** > **ṣ**, **rt** > **ṭ**, **rn** > **ṇ**; Archaic Chinese **Tr** > **Ṭ**, etc.; proto-Nuristani ***tr** > **ṭ**, pre-proto-Nuristani **śr** > **ṣ** (Nelson 1986, p. 95), Sindhi **tr** > **ṭr**, Shina **tr** > **ç**, Pashto ***rš** > **ẓ**, etc.). It is therefore hardly surprising that also early and modern Dravidian has analogical cases of 'Fortunatov's Law'[36] (e.g. ***r/lt** > **ḍ/ṭ** **lt** > **ṭ**; Zvelebil 1970, p. 174), but as such this rule could not have affected the (north)western Ṛgvedic **r**-dialect(s), where **l** had merged with **r** and where retroflexion of dental stops (esp. **n**) occurred only after **ṣ**, **r** or **r̥**.

Apart from retroflex segments derived through the above-mentioned combinatory changes, there is a fairly large and early group of words containing (esp. intervocalic) retroflex stops and sibilants that have obviously arisen through *spontaneous* retroflexion of dentals in Old and, to a lesser extent, Middle Indo-Aryan (e.g. Ṛgvedic **sthū́ṇa-** 'pillar', cf. Avestan **stūnā-**; Cl. Skt. √**kaṣ** 'scratch', cf. Lithuanian **kasýti** 'id.'; Vedic **máṇḍala-** 'circle', cf. Old Church Slavonic **mǫdo** 'testicle'; Burrow 1971).

[35] This controversial rule has been defended by Burrow (1972) against all the classical objections. The main objection has been that this change occurred only because of an earlier change **l** > **r**, but the problem is that **l** is normally preserved in the eastern dialects and **rt** yields **tt** or **ṭṭ** in the Prakrits. On the other hand, the northwestern dialects as well as Nuristani and Eastern Iranian exhibit a somewhat different treatment of **rt**, see below.

[36] E.g. Kui **sōl+te** > **sōṭe** 'I entered'; **kōḍi** 'cow' vs. **kōru** 'buffalow' (Winfield 1928, p. 6; cf. Bloch 1946, p. 20).

Previously this group of words has often been thought to consist mainly of Dravidian or other foreign or dialectal loans, but Burrow (1971) has been able to show that most of them can be explained as inherited, given spontaneous retroflexion of dentals. On the other hand, as pointed out by Hock (1984, p. 104), the spread of *spontaneous* retroflexion is hardly attributable to bilingual Dravidians, who had the opposition dental vs. retroflex, and if any external influence is involved, it might have been that of speakers of early forms of Munda or Tibeto-Burman, or, as I would hasten to add, some extinct North Indian substratum where the said phonematic opposition did not prevail throughout the system.

At any rate it is clear that when sporadic retroflexion emerged, the opposition between dentals and retroflex segments was still purely allophonic, and partly subject to free variation. It may be of some semiotic interest that at least a few of the words with spontaneous retroflexes belong to the 'descriptive', 'affective' or perhaps 'colloquial' vocabulary, cf. **piṇḍa-** 'lump', **kuṇṭha-** 'blunt', **maṇḍ-** 'adore', **kaṇḍū-** 'scratching', **khaṇḍa-** 'piece cut off', **āṇḍa-** 'egg', **ghaṇṭa-** 'bell', **jaḍa-** 'dumb, stiff', **lakuṭa-** 'cudgel', **abhi+laṣ-** 'desire, **māṇavaka-** 'lad' (cf. **mānava-** 'man'), etc.

### 6.5.A.2. POSSIBILITY OF DRAVIDIAN INFLUENCE ON IA RETROFLEXION

Even from this cursory survey, it should be clear that neither early Indo-Aryan[37] nor early Dravidian retroflexion was a monolithic (chronologically and dialectally homogeneous) phenomenon, while it is possible to adduce arguments both in favor and against North Dravidian bilingual speakers having initiated or controlled some part of Indo-Aryan retroflexion already in the prehistorical period. At least it can be assumed that early Dravidian loanwords with phonotactically unconditioned retroflex stops (e.g. TS **kuṭi-** 'hut', cf. Tamil **kuṭi** 'house', DED 1379) did contribute to the spread and phonematization of retroflex segments. Moreover, outside the extreme (north)west, the later historical development shows increasing convergence with the Dravidian retroflex system, whereas in the case of the Dravidian alveolars, the convergence went in the Indo-Aryan direction, leading mostly to a simple two-way opposition retroflex vs. dental.

A further indication of (partly mutual) convergence is that only the modern Western, Central and Southern Indo-Aryan languages show a text frequency of retroflex vs. dental

[37] Turner (1924) distinguished between the following major dialectal phases of retroflexion ('cerebralization') in Old and early Middle Indo-Aryan: (i) Cerebralization of palatalized sibilants, (ii) cerebralization of dental stops after cerebralized sibilants, (iii) cerebralization of dental stops after **r**, **ṛ** in the (north)western and eastern dialects, (iv) cerebralization of **-n-** and **-l-** in many contiguous Indo-Aryan dialects in the north and west beginning in the second century B.C., (v) cerebralization of **d-** and **-dd-** in the Indo-Aryan dialects underlying Kacchi and Sindhi, and the southern and western dialects of Lahnda, which took place posterior to the first century A.D.

consonants which is comparable with that of Dravidian. The modern Eastern Indo-Aryan languages conform more closely with Tibeto-Burman (and Munda) in having a much lower text frequency of retroflex vs. dental consonants (apart from having other structural isoglosses in common with Tibeto-Burman). In Assamese retroflexes and dentals have, in fact, merged into alveolars (Southworth 1974, p. 212; Deshpande 1979, p. 297), while in Burmese, Kuchin, Naga and (Austroasiatic) Khasi and Nicobarese there are no traces of retroflex phonemes or allophones at all. Local areal influence is even more striking in the case of Dravidian Brahui, whose retroflex stops have come to be pronounced as alveolars (Bray 1908, p. 26f.; Ramanujan & Masica 1969), obviously owing to western Iranian (Baluchi) influence.

Similarly, it was noted that the Indo-Aryan retroflex sibilants, which cannot very well be attributed to Dravidian influence, appear in contrast with dental and, sometimes, palatal sibilants only in the extreme northwest, in Dardic, Nuristani, Burushaski, Tocharian and Eastern Middle and New Iranian.

This gives a roughly three-fold typological subpatterning of South Asian retroflexion along a mainly northern-southern and partly western-eastern axis: In the northwest retroflexion centers around or *characteristically* includes medial, final and initial sibilants (s̱, ẕ [or ʂ, ʐ]), to some extent also affricates (c̱), and phonotactically initial retroflexes. In the northeast it centers around or characteristically includes cerebralizing alveolar liquids (r̥, l̥), but displays relative poverty and low text frequency, while only in the south do we find cerebralizing retroflex liquids (ṛ [l̥], ḷ) in medial and final position, and occasionally a partly three-way opposition dental vs. alveolar vs. retroflex. Only the retroflex non-nasal stops (ṭ[ɦ], ḍ[ɦ]) are found in all three zones, while retroflex nasals and laterals are a little less wide-spread in the central area. Thus the richest and mutually most different systems are found in the extreme northwest and the extreme south, whereas intervening areas display more or less converging patterns.

The general conclusion, then, is that the development of the retroflex system in the pre- and proto-Ṛgvedic Indo-Aryan dialects involved four more or less synchronous innovations operating on the germinal or emerging pre-Indo-Aryan retroflex system, which was originally confined to retroflex allophones of palatalized sibilants after r and perhaps some unconditioned (phonemic) retroflex sibilants in loanwords:

(i) the leveling of the distinctive feature [+retroflex] vs. [+palatal] vs. [+dental/alveolar] to all palatalized sibilants and the transfer of this feature to following dentals (or alveolars) and the subsequent loss of the conditioning voiced sibilant in all prehistorical Indo-Aryan dialects

(ii) the retroflexion of dentals after l (Fortunatov's Law) in the pre-Ṛgvedic dialects

(iii) the retroflexion of n (dialectally also t[ɦ], d[ɦ]) after r, ṛ, ṣ (except when a retroflex, palatal or dental stop intervened and something else than a [semi]vowel, nasal or word

boundary followed) in all prehistorical Indo-Aryan dialects
(iv) sporadic spontaneous retroflexion of dentals aided by the originally allophonic nature of the feature [+retroflex] in at least some prehistorical Indo-Aryan dialects

While the incipient retroflexion of sibilants after **r** may have been spontaneous or due to e.g. Burushaski influence, the later developments are in the main too comprehensive and isolated (especially if compared with early or even modern Eastern Iranian) to be readily understood as spontaneous or due to the same substratum that caused retroflexion in proto-Nuristani. Since these innovations must have occurred after the separation of Nuristani in a more (south)easterly area, at least part of them (esp. (ii), which is clearly pre-Ṛgvedic) could be explained as due to abductive innovations[38] in accordance with the phonological system of acculturated bilingual (North) Dravidian speakers of pre-Ṛgvedic Indo-Aryan dialects.

The common denominator which could principally link these changes with the Dravidian system, is that proto-Dravidian had retroflex stops and liquids but no sequences of retroflex or alveolar and dental segments in the same word. When such segments met in inflection or derivation, there was always partial or complete assimilation of the following dental to a preceding retroflex or alveolar (this rule being still productive). A foreign cluster like **ṣt** or even **št**, where the dental-alveolar **t** must have been somewhat retracted due to coarticulation, would probably have been reevaluated and pronounced by early North Dravidian speakers as ***šṭ** or ***ṣṭ** (rather than ***ṣt̠**, since the Indo-Aryan dentals were originally alveolar), while the regressive assimilation of the feature [+retroflex] would then have yielded **ṣṭ**. Similarly, ***žḍ** > ***ẓḍ** > ***ḍ** (= **ḷ** in the Ṛgveda). The changes ***lt** > **ṭ**, ***ln** > **ṇ** (better if ***ln** > **ṇ**) and ***rn** > **rṇ** are to some extent paralleled already in proto-Dravidian and, mainly with alveolar outcome, in later Dravidian, while **ls** > **ṣ** is analogical with this change and could be understood on a Dravidian basis given that **ṣ** already existed independently from the cluster ***rs** > **rṣ**. Deshpande (1978; 1979, p. 265ff.) has suggested that the palatalized sibilants were reinterpreted as retroflex only due to leveling with retroflex **ṣ** as deriving in the eastern pre-Ṛgvedic dialects from **ls**. But the problem is that the eastern dialects (which supposedly did not cerebralize the palatalized sibilants after **r**, etc.) did not preserve the voiced retroflex sibilant **ẓ** which is needed to explain supposedly western developments like ***ẓd** > **ḍ**, cf. **nīḍ/ḷa-** < ***niẓḍa-** < ***niẓda-** < ***nižda-** 'nest'. Thus, the western dialects must have had retroflex ***ẓ** < ***ž** and therefore also **ṣ** < ***š**, the

[38] Abductive innovations are based on abductive inference, i.e. the possibly faulty postulation of a premise on the basis of an assumed correspondence (type: since A correlates with B and X correlates with A, then X is a case of B). On the other hand, it is is only through deduction that inductive changes are manifested, e.g. Middle English **cheriṣ* 'cherry' => {*cheri-ṣ*} => *cheri* sg., *cheris* pl. (H. Andersen 1974, p. 23). Thus if palatalized sibilants were conceived of as retroflex due to the existence of the opposition /dental/vs. /retroflex/ in the substratum language, then all rules applying to retroflex segments would come to apply to these palatalized sibilants.

sibilants being purely allophonic.

But these possibly substratum-induced innovations could not have spread to all dialects/sociolects so quickly, unless we assume that the non-Dravidian speakers of those Indo-Aryan dialects where these innovations first occurred came to be outnumbered or linguistically dominated by Dravidians who used or learned Indo-Aryan as a secondary language (cf. Deshpande 1979, p. 295ff.). In the spread of this pronunciation to all dialects, the existence of loanwords with unconditioned retroflex segments must have played an important and cumulative role.

It may also be observed that there are sporadic cases were intervocalic Dravidian **c** corresponds to Sanskrit **ṣ** in loanwords, although the normal correspondence is **s** or **ś** (suggesting that Dravidian **c** was indeterminate in relation to the Sanskrit system of sibilants). E.g. Sanskrit **maṣi-** 'ink, lampblack', cf. Tamil **mai** 'collyrium, ink, blackness, spot', **macaṅku** 'become dull, loose lustre', **maḻuku** 'become dim', **māci** 'cloud', **mācu** 'spot, stain'; Kannada **masi** 'dirt, soot, lampblack, blackness, ink'; Kodagu **masi** 'charcoal'; Tulu **maji** 'coal, black powder, ink'; Telugu **masi** 'blackness, charcoal, ink'; Kurukh **maĩs** 'ink' (cf. Burrow 1973, p. 384; DED 4187, 3778, 3890, 3918, 3927; Zvelebil 1970, pp. 111, 114). On the other hand, Indo-Aryan **ṣ** (as well as **ṭ** and **ḍ**) is often replaced by **ḻ** (rather than **c**) in Old and Middle Tamil and Malayalam, e.g. Skt. **uṣaḥ** > Tamil **uḻai** 'dawn'; Skt. **puruṣa-** > Malayalam **puruḻa** 'male' (Zvelebil 1970, p. 150).

It is premature to speculate about details of pronunciation in the ancient North Dravidian dialects, with which the comparison should ideally be made, but the possibility of ***-c-** having been pronounced as a (post)alveolar or even retroflex rather than dental sibilant in early Dravidian cannot be precluded: the curious development **-c-** > **-y-** > **-Ø-** in e.g. Tamil ***maci** > **mai** cannot be motivated by postulating an intermediate stage with **-s-** as obviously assumed by Zvelebil (1970, p. 111). Nevertheless, retroflex sibilants are exceptional in Dravidian loanwords in Sanskrit and there is no clear evidence of retroflex sibilants ever having been instrumental in the origin or spread of retroflexion in Dravidian.[39]

The above hypothesis must now be judged against the alternative explanation that Indo-Aryan retroflexion owed its origin to some extinct northwestern substratum (that did not affect Nuristani) and that the convergence with Dravidian was only a secondary phenomenon, partly due to retroflexion being an ancient areal feature that in some way or other affected all South Asian languages including proto-Dravidian. Although we cannot postulate an identical substratum for both (Indo-)Aryan and Dravidian retroflexion, such a theory

[39] Note, however, that the complete lack of sibilants on the phonemic level is typologically just as remarkable as the presence of retroflex fricatives or liquids (mainly *ṛ). One might therefore speculate that there has been a loss of pre-Dravidian sibilants due to retroflexion or assimilation with preceding cerebralizing liquids or palatal vowels, e.g. ***r/(l)/i/e + *s** > ***ṛ**, possibly also ***l + *s** > ***ḻ**. Progressive assimilation with fusion might then have caused changes like ***ṛn** > ***ṇ**, ***ḻt** > ***ṭ**, etc.

could account for certain identical developments, such as the retroflexion of dentals after liquids in both proto-Dravidian and proto-Indo-Aryan and the progressive assimilation of retroflexion to dentals.

What with extant language isolates such as Nahali in Central India and Burushaski in the extreme northwest, the Indian subcontinent is even today — despite considerable leveling of major cultural features — a (socio)linguistically remarkably stratified area, where extensive bilingualism and even multilingualism is the rule rather than exception in language contact areas (cf. Gumperz & Wilson 1971; Southworth 1974; Shapiro & Schiffmann 1981; Pandharipande 1986b).

The linguistic and ethnological diversity (esp. in the northwest; cf. Toporov 1966, p. 172) cannot by any positive evidence or rational inference (*pace* Parpola 1974, p. 94) be assumed to have been any lesser at the time of the advent of the Indo-Aryans, even if some of the major cultural traits of the Indus Civilization had spread over a large area. There is a sizable residue of unexplained words and foreign names (especially of indigenous animals, plants and peoples) in the Vedic and the later Indo-Aryan language (cf. Masica 1979).

Many of these words contain retroflex consonants, including phonotactically unmotivated (partly spontaneous?) retroflex sibilants, e.g. **káṣkaṣa-** (AV) 'a kind of noxious insect' (perhaps to be connected with √**kaṣ** 'scratch')[40]; **jaṣá-** (AV+) 'an aquatic animal' = **jhaṣá-** (ŚB) 'large fish'; **jāṣkamadá-** (AV, in several mss. **jāḷkha-**) 'a kind of animal'; **māṣa-** (AV+) 'bean' (cf. Modern Persian **māš** 'lentil'); **yavāṣa-** (KS 30.1) 'a kind of noxious insect'[41] = **yévāṣa-** (AV). (Cf. Mayrhofer 1956-1980, s.vv.; Kuiper 1967, p. 84ff.; Burrow 1968, p. 327ff.; Vacek 1976, p. 13ff.; Masica 1979, p. 137ff.).

The presence of one or several extinct non-Dravidian non-Munda substrata in Indo-Aryan is strongly supported by Masica's (1979, p. 137f.) penetrating study of the North Indian agricultural vocabulary:

> The Dravidian element, while not large, does loom somewhat larger than the Munda or Austroasiatic element (at least by virtue of inclusion of a number of doubtful items). However, it seems to decline from Sanskrit to Hindi. Though this is not documented here, I could not help noting while researching this paper that many a Dravidian word current in Sanskrit has left no living descendants in Hindi. Either one of its Aryan synonyms has alone survived, or its place is taken by a new Aryan coinage... The Austroasiatic element is quite small, suggesting, according to Burrow [1968, p. 328], that "the hypothesis that languages of this family were current much further west than they are now found" is mistaken. "The evidence as it is so far established would suggest that these languages in ancient times as well as now were situated only in eastern India" [ibid.].

This is also Burrow's (1968, p. 328) conclusion, which is quoted by Masica (ibid.):

---

[40] But cf. also Finnish **kaskas** 'cicada', which sounds like an onomatopoietic formation.

[41] According to Suryakanta (1981, s.v.) **yavāṣa-** may be identical with "[Hindi] **javāsā** [*Alhagi maurorum* < ? Skt. **yavāsaka-**]; a sort of plant (that withers in rainy season)".

> It is my opinion that, when all has been done in this direction which can be done, the number of loanwords in Sanskrit, which cannot be explained as either Dravidian or Munda, will remain considerable. It may very well turn out that the number of such words which cannot be explained will outnumber those which can be. This is the impression one gets, for instance, from the field of plant names, since so far only a minority of the... non-Aryan words have been explained from these two linguistic families... Evidence such as this leads to the conclusion that there must have been several non-Aryan languages or families of languages which exercised an influence on the vocabulary of Indo-Aryan.

Referring especially to Koppers' work on the Bhils, Burrow (1968, p. 330ff.; quoted by Masica, ibid.) continues:

> The most ancient element in the population of the mountainous region of Central India cannot be identified as either Kol [that is, Munda] or Dravidian. There are quite a number of tribes in the region who can be regarded with some plausibility as the pre-Gonda and pre-Kol stratum of the population. The Baigas are a well-known case in point... Thus [Koppers] arrives at a large group of non-Munda and non-Dravidian tribes, scattered over a large area... there is no need to assume that these among themselves necessarily form a united group. Koppers' theory represents a clear-cut break with a common tradition in Indian ethnological studies which looked for either Dravidian and Munda in everything that was pre-Aryan. In the case of Nahali, at any rate, it turns out that it has some linguistic support... We... have to assume the existence of other pre-Aryan languages and language families to account fo the large number of unexplained words in Sanskrit... What goes for Central India was originally the case no doubt in northern and southern India, and the universal adoption of Indo-Aryan in the North and Dravidian in the South have covered up an original linguistic diversity.

As finally pointed out by Masica (ibid.), this "also raises a question ... of the linguistic affiliations of the Harappan civilization. Was it perhaps multilingual? Burrow's [1968, p. 327ff.] argument is based on Sanskrit, but confirmed by Hindi. The non-Dravidian, non-Munda element in the Indo-Aryan lexicon persists, and even grows (cf. Turner's reconstructed items, most of which have a distinctive phonological appearance, it may be noted). Needless to say, not all unexplained items need be attributed to this ancient stratum: some no doubt stem from insufficiently investigated foreign contacts."

Keeping these observations in mind, there is no justification for operating with the simplistic model that the pre-Dravidian elements of North India had become isolated or almost fully assimilated with the Dravidians. Judging by the mentioning in the early Vedic literature of non-Aryan Vedic sages with names that sound neither Dravidian nor Munda (e.g. RV **Kavaṣa Ailūṣa**; Kuiper 1967, p. 87; Deshpande 1979, p. 253), the cultural importance of these elements cannot be underestimated. The problem is that we cannot identify them linguistically.

It is obvious that the first foreign contacts of the pre-Ṛgvedic Indo-Aryans must have been with the most peripheral ethnic and linguistic groups in the northwestern parts of the Indian subcontinent. But it is hardly likely that these were Dravidian speakers inasmuch as neither Nuristani nor Dardic show any Dravidian influence, most of their loanwords and

many of their structural innovations being traceable to Burushaski (Grierson 1906, p. 4; Èdel'man 1980). This is consistent with the hypothesis that the later development of Indo-Aryan retroflexion as underlying the Ṛgvedic system was partly due to a different substratum, but the obvious presence of retroflex systems (especially such that include retroflex sibilants) in the extinct non-Aryan sub- or adstratum language(s) forces us to count with the possibility of only indirect or secondary convergence with the Dravidian system of retroflexion.

A similar case of perhaps only secondary convergence with Dravidian might be the rigidly postposed position of the quotative marker (Sanskrit **iti**) in quotatival constructions. Although the Dravidian quotatival constructions and their uses differ from subgroup to subgroup, being also somewhat more restricted than in Classical Sanskrit (Hock 1982, p. 74ff.), the most common pattern is for the quotative marker to follow the quote and be syntactically linked with this rather than with the superordinate clause.

Quotatival constructions based on a non-finite form of the verb 'to say' or 'speak' or on an anaphoric pronominal adverb exist over a larger area extending almost without any break from the ancient Near East to Further-India (Hock 1982), but only in Dravidian, Elamite and Sumerian is the postposed (vs. preposed or inserted) position of the quotative marker as rigid as in (and after) Ṛgvedic Sanskrit. Hock (1982, p. 75f.) has expressed doubts about reconstructing (more than one type of word order in) such quotatival constructions to proto-Dravidian, but for some reason he allows the reconstruction of, and all the three types of word order, for proto-Indo-European quotatival constructions on much lesser comparative evidence. Comparable constructions occur in Homeric Greek and Germanic (cf. also Hock 1984, p. 98ff.), but the postposed position of the quotative marker is not attested in Iranian, which uses the same marker (**uiti**). Postposed and preposed quotatives also occur in Tibeto-Burman and some Munda languages, but the fact that the Munda quotatives are based on conjunctive participial forms of a *verbum dicendi* (e.g. Sora **gamle** 'having said', cf. Telugu **ani** 'having said', Tamil **enṟu** 'id.'; compare Marathi **mhaṇūn** 'id.'), while the conjunctive participle is itself recent in Munda (cf. 6.6.A), shows that they are at least partly secondary formations in this group.

A simpler, but later case of structural convergence is the post-Vedic 'totalizing use' of the inclusive enclitic particle **api** 'also', which has a perfect match in Dravidian *-**um**. Hock (1975, p. 103f.; 1984, p. 93) has tried to explain this use as derivable from the older (inherited) emphasizing use of this particle, but **api** is not used in this way after numerals in the Veda, nor is the totalizing use of this particle or its synonyms attested elsewhere in Indo-European.

While the presence of lexical and structural (phonological and syntactico-semantic) loans from Dravidian can hardly be doubted in later Vedic and Classical Sanskrit, it is thus mostly impossible to *prove* their presence in (pre-)Ṛgvedic Indo-Aryan. This has bearing

on the question of the possibility or likelihood of Dravidian influence during the early stages in the syntactico-semantic development of the Indo-Aryan past gerund.

## 6.5.B.DRAVIDIAN INFLUENCE ON THE DEVELOPMENT OF THE GERUND?

Dravidian clause linkage is characterized by synthetic non-finite structures (based on relative and adverbial participles, infinitives and oblique verbal nouns) and the paucity of finite subordinate (esp. embedded) and coordinate or paratactic clauses. This is in conformity with the basically non-finite typology of complex sentence formation in Dravidian, as reflected especially in Old Tamil and confirmed by comparison with the modern South and Central Dravidian languages.

The Dravidian verb-forms that can be compared with the Indo-Aryan gerunds are called 'verbal', 'conjunctive', or 'adverbial' participles, less often 'verbal adverbs', 'absolutives' or 'gerunds'. In traditional Tamil grammar they are subsumed under the name **viṉai eccam** 'incomplete/elliptical verb'.[42] Like the Indo-Aryan gerunds (but unlike the Indo-European participles), the Dravidian 'verbal participles' (as they will be called here) are non-adnominal, indeclinable and coreferentially constrained (by the topical subject or Actor of the superordinate clause). They are syntactically complementary with infinitives, oblique verbal noun phrases and embedded relative participles.

All Dravidian languages except Brahui have a (temporally neutralizable) 'past verbal participle' (in both the positive and negative conjugation), which is used with more or less similar functions as the Indo-Aryan past gerund. A typologically significant feature of the Dravidian verbal participle from ancient times is its potential dependence on the mood, tense and other operators of the main clause. Cf. Old Tamil (Caṅkam age):

(744) PN 123.1

**nāṭ** **kaḷḷ** **uṇ-ṭu** **nāṇmakiḷ** **makiḻiṉ**
*morning* *toddy* *drink-VBL.PPLE* *court-LOC* *be happy-COND*
'Having drunk toddy in the morning, if anyone is intoxicated while holding court'
Or: 'If anyone drinks toddy in the morning and is intoxicated while holding court'

(745) KT 189.1

**iṉṟē** **ceṉ-ṟu** **varuvatu** **nāḷaik...**
*today* *go-VBL.PPLE* *coming-FUT.-3SG.NEUT* *tomorrow*
'We will go today and return tomorrow'

[42] Tolkāppiyam deals with the verbal participles in 15 rules (222, 236; 707, 713-718, 721, 722, 724; 913, 915, 940). Cf. Agesthialingom (1979, p. 127).

(746) KT 130.1

**nilan toṭ-ṭup pukāar vāṉam ēṟār**

*earth dig-VBL.PPLE enter-NEG.HAB sky ascend-NEG.HAB*

'He will/can not dig up the earth and enter it; he will/can not ascend to the sky'

"He will not dig up the earth and enter it" (Hart 1979, p. 65)

"He just cannot have dug up and entered the earth." (Ramanujan 1971, p. 58)

This feature is linked with the constraint on coordinating finite clauses. Unless the operators of the main clause could have scope also over a (non-restrictive) non-finite clause it would not be possible to express several coordinate predications in the same sentence in modally marked contexts. A possible, but somewhat ambiguous, exception to this would be the juxtaposition of finite predicates with different personal endings in imperative sentences in Old Tamil, e.g. KT 236.2 **nērntaṉai yāyiṉ tantaṉai ceṉmō** 'if you agree, give (ind.) and go (imp.)!' (Agesthialingom 1979, p. 87). But the fact that the first conjunct is in the indicative and not in the imperative mood, would imply some sort of subordination to or dependence on the final main verb. In the case of the Indo-Aryan past gerund, the operational constraints of the gerund in additive-sequential linkage were seen to have been relaxed only gradually, apparently fully reaching the Old Dravidian state of affairs only in the Middle Indo-Aryan period (cf. 4.3, 5.2-3, 6.3.B). This development may be explained by convergence with the Dravidian past verbal participle, as it is not paralleled by the participles, nor by functionally corresponding categories in other Indo-European languages.

Like the post-Vedic gerund, the Old Tamil past verbal participle may also function as a non-past complement or adjunct of manner depending on a non-finite or finite verb, cf.:

(747) PN 47.1-7

**vaḷḷiyōrp paṭar-ntu puḷḷiṟ pōk-i | neṭiya veṉṉ-ātu curampala kaṭa-ntu | vaṭiyā nāviṉ vallāṅkup pāṭ-ip | perṟatu makiḻ-ntu curṟam arutt-i | ōmp-āt uṇ-ṭu kūmp-ātu vīc-i | varicaikku varuntum ipparicil vāḻkkai | piṟarkkut tītaṟint aṉṟō viṉṟē...**

'This reputation-destroying living on donations while hoping for (**paṭarntu**) rich patrons and moving (**pōki**) around like birds, traversing (**kaṭantu**) many deserts without (even) calling (**eṉṉātu**) them long, singing (**pāṭi**) to the best of one's ability with one's imperfect tongue, rejoicing (**makiḻntu**) at what one gets and feeding (**arutti**) one's kinsmen, eating (**uṇṭu**) without saving (**ōmpātu**) and giving away (**vīci**) without stinting (**kūmpātu**), does it bring harm to others? Certainly not!...'

(748) PN 43.1-4

**nilam icai vāḻnar alamararīrat | teṟukatirk kaṉali vemmai tāṅk-ik |**
**kāluṇa vākac cuṭaroṭu koṭkum | avircaṭai muṉivarum aruḷak...**
'...astounding even the sages with their shining matted hair, who circle around with the sun with only wind as food, while bearing (enduring: **tāṅki**) the heat of the sun with its burning rays in order to relieve the suffering of the inhabitants of the earth'

Similarly, the use of the past verbal participle with both stative-habitual and, especially, perfective aspectual auxiliaries is known from the earliest Dravidian sources, e.g. Old Tamil **iṭu** 'place, put' (perf.), **koḷ** 'take' (perf.-refl.), **tā** 'give (perf.), **viṭu** 'let go' (perf.), **nil** 'stand' (stative), **vā** 'to come' (hab.), etc. (cf. Srinivasan 1980). Cf.:

(749) KL 101.25 (Srinivasan 1980, p. 233)

**...neñc iṭa-nt+iṭ-ṭu...**
*chest tear-VBL.PPLE+place-VBL.PPLE*
'...having torn up the chest'

It will be seen that these auxiliaries are not very well paralleled in Old Indo-Aryan, although the Middle Indo-Aryan system shows some convergence with Dravidian through the introduction of perfective auxilaries (cf. 6.3).

All these functions continue in Modern Tamil and Malayalam (cf. Moag 1980, p. 243), being paralleled by the past verbal participles of the other Dravidian languages. The temporally or circumstantially restrictive function is exemplified in (750) and (756)-(758), the non-restrictive additive-sequential function with operational dependence in (751)-(755):

(750) **oruvaṉ rājāvukku ārūṭam colli aṅkē vekumāṉaṅkaḷaip peṟṟukkoṇṭu vantāṉ** (Arden 1942, p. 282)
'A certain man used to get (**peṟ-ṟuk+koṇ-ṭu**) many presents there (by) soothsaying (**coll-i**) to the king.'

(751) **tēcāntaram pōyp paṇam campāti-ttuk kaliyāṇam paṇṇikkoḷḷa ālōcittārkaḷ** (Arden 1942, p. 270)
'They decided to move (**pō-y**) abroad, earn (**campāti-ttu**) money and then marry.'

(752) **itai yārāvatu koṇṭuvantu pōṭṭirukka vēṇṭum** (Arden 1942, p. 179)
'Somebody must have brought (**koṇ-ṭu+va-ntu**) it and put it (**pōṭ-ṭ+irukka**) here.'

(753) **kuṭikaḷukku vārakkaṅ koṭuppittup payir iṭuvittu antap paṇattaip pakutip paṇattōṭu cērttāl, ataṉāl kuṭikaḷum, avarkaḷāl aracarum palaṉ aṭaivārkaḷ** (Arden 1942, p. 269)
'If you cause advances to be given (**koṭuppi-ttu**) to the cultivators, and (if you) cause them to get (**iṭuvi-ttu**) a crop, and (if you) collect the money (given in advance) together with the tax-money, by that means the cultivators, and through them the king, will obtain profit.'

(754) **poy niṉṟu meyyai vellumā** (Arden 1942, p. 258)
'Shall falsehood stand (**niṉ-ṟu**) and conquer truth?'

(755) **tāṉum aṉupavittuc caṟpāttirattil celavaḻiyātatu vīṇ ākum** (op. cit., p. 271)
'That which he does not enjoy himself (**aṉupavi-ttu**) and spend upon a worthy person, will be to no purpose'

(756) **pūṉaiyaik kaṇṭa kiḷi pulampi aḻukiṟatillaiyā** (Arden 1942, p. 180)
'Does not a parrot that has seen a cat weep lamenting (**pulamp-i**)?'

(757) **oru kuyavaṉ pāṉai caṭṭikaḷ cey-tu viṟ-ṟu jīvaṅam paṇṇ-ik+koṇ-ṭu iruntāṉ** (Arden 1942, p. 267)
'A certain potter was getting (**paṇṇ-ik+koṇ-ṭu**) his living (by) making (**cey-tu**) and selling (**viṟ-ṟu**) pots and pans.' Cf. ex. (57), (718).

(758) **ōṭi vā** (Arden 1942, p. 201)
'Come running (**ōṭ-i**)!'

As in Sanskrit and later Indo-Aryan, the repetition of the past verbal participle confers either distributive or iterative-continuous sense: **vimm-i vimm-i yaḻutāḷ** 'she cried sobbing frantically' (Andronov 1969, p. 182f.).

In point of difference with regard to Old Indo-Aryan in general (but not New Indo-Aryan, cf. 6.3), it may be observed that at least in Modern Tamil and Kannada the verbal participle may occasionally take an independent subject which cannot be recovered from among the core arguments of the main clause, but which yet mostly shows some referential or thematic contiguity with the subject of the main clause. Such marginal absolute constructions must be due to convergent developments, starting perhaps with Dravidian constructions like (Tamil) **nāṉ iru-nt-um avaṉ pōṉāṉ** 'although I remained, he left' (Arden 1942, p. 203), **avaṉ va-ntu-tāṉ nāṉ pōkaṇum** 'only after he came, I should go', **avaṉ va-ntu nāṉ pōkavā**? 'am I to go after he comes?', **avaṉ ōṭ-i nāṉ**

**pārkkavillai** 'I never saw him running' (Agesthialingom 1979, p. 132). Cf.:

(759) **maḻai peytu veyil aṭittu vāṉavil tōṉṟiyatu** (Steever, forthcoming)
'After it had rained (**pey-tu**) the sun came out (**aṭi-ttu**) and a rainbow appeared.'

(760) **pāmpu kaṭittup paiyaṉ cettup pōṉāṉ** (Steever 1980, p. 65)
'The snake bit (**kaṭi-ttu**) [the boy] and the boy died (**ce-ttup pōṉāṉ**).'
Cf. Kannada: **pāvu kacc-i... arasanu sattanu** 'The snake having bit, the king died' (Bloch 1946, p. 67).

(761) **kavalaip paṭṭu eṉṉa payaṉ** (Steever 1981, p. 65)
'What is the use of worrying (**kavalaip paṭ-ṭu**)!'

Note that in (760) it is the animate Undergoer (> implicit object) that figures as the subject of the main clause.

Absolute constructions were noted also in Old Tamil by the commentators on TOL 715 (cf. Agesthialingom 1979, p. 132), but mostly these constructions are confined to cases where the subject of the verbal participle can be recovered from among the topical/animate core arguments of the main clause. The coreferentiality constraint of the (Old and New) Dravidian past verbal participle is thus looser or more pragmatic than that of the (Old and Middle) Indo-Aryan past gerund, but still much stricter than e.g. that of the semantically corresponding Tibeto-Burman and Altaic past gerunds.

All of these uses, to which we could add the concatenation of clauses by repeating the verb of the preceding clause[43] can also be attested for Central Dravidian, cf. Telugu:

(762) **pillalu annam tini niddarapōlēdu** (Krishnamurti & Sarma 1968, p. 127f.)
'The children did not eat (**tin-i**) and go to sleep.'
Or: 'Having eaten, the children did not go to sleep.'

(763) **āyana occi tsūḍalēdu** (ibid.)
'He did not come (**o-cc-i**) and see.'

[43] This particular discourse function is also characteristic of the past gerund in Buddhist Hybrid Sanskrit and Middle and New Indo-Aryan (cf. 4.7.C.1). It is usually ascribed to Dravidian influence (cf. Bloch 1930, p. 734f.), while it is not very common in Munda. On the other hand, this as well as the lavish use of the gerund is also a typical feature of the Tibeto-Burman gerund(s), and appears to the fore especially in Bengali and the other Eastern Indo-Aryan languages, which is why local Tibeto-Burman rather than Dravidian influence has been suggested at this point (Anderson 1911, p. 524, but cf. also Chatterji 1926, p. 1011 § 740). An eastern Tibeto-Burman substratum would also be in conformity with the loss of gender (cf. Bloch 1963, p. 3ff., carte 5) and low text frequency of retroflexes vs. dentals in the Eastern Indo-Aryan languages, as against the preservation of gender and higher frequency of retroflexes vs. dentals in the Central, Western and Southern Indo-Aryan languages (cf. Southworth 1974, p. 212ff.).

(764) **atanu college ki naḍici veḷḷaḍu** (Ramarao 1971, p. 50)
'He goes on foot (**naḍi-c-i**; ***naḍu-s-tū** 'while walking') to college.'
Cf. Tamil **avaṉ naṭa-ntu pōṉāṉ** 'he went walking (on foot)' ≠ **naṭa-ntu koṇ-ṭē pōṉāṉ** 'while walking'.

(765) **atanu kūli cēsi batukutunnāḍu** (ibid.)
'He makes his living by working (**cē-s-i**; ***cē-s-tū** 'while working') as a coolie.'
Cf. Pali **bhatiṁ katvā jīvati** (ex. 718)

(766) **atanu lañcālu tini sampāyinciāḍu** (ibid.)
'He earned by taking (**tin-i**) bribes.'

(767) Kui (Winfield 1928, p. 131)
**eanju tāṛa mṛienii īnu ṛūva tuhanai nāṭoki inji vestenju**
'"You leave the ploughing (**tuh-a-nai**) and go home", thus [**in-j-i**, lit. 'having said'] the man said to his son.'

(768) Kui (Bloch 1925, p. 734 < Friend Pereira, p. 21, 61)
**gōsa ki sāsenju. sājanai kṛāṇḍi ti vīht'enju**
'He went to the forest. Having gone (**sā-ja-nai**) there he shot a tiger.'

(769) Konda (Steever forthcoming)
**or nēṇḍ vāzi darmam ki?a**
'Come (**vāz-i**) for a day and help us!'

(770) Pengo (Burrow & Bhattacharya 1970, p. 92)
**mussi mussi vātaṅ**
'I came continously chewing (**mus-s-i mus-s-i**) (tobacco).'

In the non-literary Central and North Dravidian languages, the typology of clause linkage has been profoundly influenced by the contiguous Indo-Aryan and Iranian languages (cf. Bloch 1946, p. 94ff.). This can be seen in the development and downright borrowing of Indo-Aryan and Iranian coordinative conjunctions, e.g. Kurukh and Gondi **aur** 'and' (< Hindi), Gondi **jab** 'when' (< Hindi), Malto **ante** 'and', Brahui **ō** (< Baluchi) (cf. LSI IV, pp. 420, 426, 450ff.). Thus, where the South Dravidian languages and Telugu use exclusively non-finite constructions (esp. in additive-sequential linkage), these Central and North Dravidian languages have alternative and often preferred finite constructions of a distinctly Indo-Aryan type.

(771) Kurukh (LSI IV, p. 426)
**ēn chō'on-kī embās gusan kā'on aur āsin ān'on**
*I will rise-and my father near will go and to him will say*
'I will rise and go near to my father and say to him...'
Contrast e.g. Marathi (South Indo-Aryan): **māmāpuḍheṁ jā-ūn mī pāyāṁ paḍeṁ** 'I will go to my uncle and throw myself at his feet' (Bloch 1970, p. 272).

(772) Malto Sonthal Parganas district (LSI IV, p. 454)
**ēn chōcheken eṅg abba bahak ēken ante ahiṅ awden. ānkeh āh chōchah ante tam bako bahak ekyah**
'I will rise (**chōche-ke-n**, vbl.pple; 1 sg.) and go to my father's place and (**ante**) say to him... Having said (**ān-ke-h**, vbl.pple; 3 sg.) this he rose and (**ante**) went to his father's place.'

Note that unlike the other Dravidian languages Malto inflects its past (or 'perfective') verbal participles (in **-a-**, **-ka-**) according to the person-number of the subject, which thus behaves like a relative participle. However, when immediately preceding a finite verb governing the same subject, the **a**-participle usually drops its personal ending and occasionally also the participial formative, e.g. **e:n ondr ondr ba:ṭyan** 'I shall distribute having brought it' (Mahapatra 1979, p. 181f.).

Despite the diversity of the specific suffixes involved in the formation of the past verbal participle in the various Dravidian languages, it is considered possible to reconstruct such a category to proto-Dravidian as formed directly from the past tense base with the addition of an enunciative vowel after a stop (Andronov 1970, p. 121ff.; 1978a, p. 381ff.; 1978b, p. 56f.; Subrahmanyam 1971, p. 227ff.). The reconstructed form conforms thus mainly with the South and Central Dravidian pattern. In addition a temporally unmarked negative verbal participles based on the negative suffix *-**ā**- can be reconstructed to proto-Dravidian (Andronov 1978a, p. 430ff.).

Formationally the reconstructed past verbal participle shows no structural resemblance with the Old Indo-Aryan gerund, except in terms of its indeclinability. Instrumental and sociative verbal nouns are also used in Dravidian, but as in Indo-European, they express attendant circumstances or concomitant action, cf. Tamil **vaṇaṅgal-ōḍu, vaṇaṅgal-um** 'with veneration' ≈ **vaṇaṅg-i** 'having venerated' (Poucha 1947, p. 285). While the instrumental case appears normally after the past tense base in the conditional participle (cf. Tamil **cey-t-āl** 'if having done/going to do'), it seems that only Malayalam is able to use such a form as a past verbal participle (Asko Parpola, personal communication). This together with the archaic shape and suppletion of forms of the Old Indo-Aryan past gerund would then imply that the gerund existed as a formal category independently of any

Dravidian influence, while even its reinterpretation or reanalyis as having specifically past relative tense is difficult to explain on a common Dravidian basis.

However, the gradual loss of suppletion of allomorphs after the early Old Indo-Aryan stage and the later emergence of Apabhraṁśa gerunds based on the past participle in **-i, -ia** < **-ita** (cf. Subhadra Sen 1973, p. 29) are secondary developments that show some formal analogy with Dravidian, especially because the past participle was commonly used as a finite verb. Conversely, the formation of the North and tribal Central Dravidian verbal participles reveal secondary Indo-Aryan and in some cases Munda influence. For example, the suffix **-ār** of the Kurukh verbal participle is apparently derived from the Hindi gerundial suffix **-kar** (Subrahmanyam 1971, p. 228), while similar borrowed gerundial morphemes appear also in Munda (Kharia and Juang, cf. Pinnow 1966, p. 174).

A further problem for the theory of Dravidian influence on the early development of the Indo-Aryan past gerund is that the past gerund as we know it from the Vedic literature is actually more strongly marked for relative past tense than the early Dravidian 'past verbal participle' as we know it from the oldest Tamil sources and by comparison with the cognate languages. Especially the Old Tamil past verbal participle is rather ambivalent as to its relative temporal value (cf. 747-748).[44] In fact, the suffix **-i-**, which seems to appear also in the Kui, Kuvi and Brahui (see below) non-past verbal participles, was perhaps specialized for past tense only in South Dravidian and some of the Central Dravidian languages (Emeneau [1957] 1967, p. 16; cf. Andronov 1978a, p. 386; 1978b, p. 58).

To account for this discrepancy, while still defending the theory of the past gerund being a syntactico-semantic calque on the Dravidian past verbal participle, we would have to assume that the past gerund was secondarily incorporated within the rather strict inherited system of relative tense, where it was temporally more or less synonymous with the perfect participle and contrasted mainly with the present participle and non-past gerund (cf. 3.2). This means that it was originally (or at least in the main Ṛgvedic dialect) reinterpreted on an existing system of relative tense in accordance with the most salient use of the foreign model on which it developed. The principal function of the Dravidian 'past verbal participle' has always been that of implying a sequence (rather than concomitance) of actions. (This does not follow from the constrained word order, since all dependent clauses precede the governing clause in Dravidian, while only some non-finite verb-forms have basically past relative tense.)

On the other hand, it is hardly a coincidence that the non-preterital uses and absolute constructions of the past gerund increase toward the Middle and New Indo-Aryan period especially in texts of southern origin (cf. section 3.3). In some cases there is almost idio-

[44] Upon a random perusal of about 20-30 Caṅkam poems from Puṟanāṉūṟu, Kuṟuntokai, Aiṅkuṟunūṟu and some passages from Cilappatikāram, I have come across more than ten clear cases of the past verbal participle used with relative non-past sense as a temporal or modal-instrumental qualification. The ratio between non-preterital and preterital uses of the Old Tamil past verbal participle ranks thus as high as in the case of the New Indo-Aryan past gerund.

matic correspondence with Old and especially New Indo-Aryan gerundial manner complements (e.g. **ruditvā/vilapya ah-/brū-** 'say crying/lamenting', cf. PN 19.15 **kacintu aḷu** 'cry weeping', i.e. 'cry bitterly'; Hindi **dauṛkar jānā** 'go running', i.e. 'hurry', cf. (758), **muskarākar bolnā** 'say smiling', i.e. 'say with a smile', cf. below).

It might be conceived that the relative past tense of the Indo-Aryan gerund was due to a reinterpretation of the primarily perfective aspect of the Dravidian past verbal participle, which would be compatible with its use in additive-sequential linkage and perfective manner complements. But there is no clear evidence of the past verbal participle having been specifically, or at least exclusively, perfective by aspect (cf. 747-748), nor can we reduce the semantic opposition between the Dravidian past and non-past verbal participles to a merely aspectual opposition. On the other hand, it is clear that the non-past verbal participle was aspectually and temporally more restricted than the past verbal participle, which therefore still appears as the least marked member of the system of verbal participles in Dravidian, cf. Tamil **avaṉ poci-ttuk kuṭikkiṟāṉ** 'he is eating and drinking', lit. 'he is drinking having eaten' (Pope 1911, p. 67).

According to Meenakshisundaran (1965, p. 32) the Dravidian past tense suffixes have derived their meaning pragmatically due to their frequent use in additive-sequential linkage. This would imply that the past verbal participles go back to serial verb constructions or 'clause chains' with ellipsis of redundant or repeated elements ('conjunction reduction'). It could then be further hypothesized that proto-Dravidian had only temporally undifferentiated verbal participles, but this situation has been preserved nowhere, while it must have been abandoned at quite an early stage through the general development of a distinction between past vs. non-past finite verb-forms. It has, on the other hand, been suggested that the Central and North Dravidian non-past verbal participles in **-i**(-) (cf. Kui and Kuvi **-i**; Brahui **-[i-]sa**) were perhaps temporally undifferentiated until the development of a specifically past verbal participle (cf. Kui **-a**; Andronov 1978a, p. 386; 1978b, p. 58).

The Brahui non-past gerund (**-[i-]sa**, **-isa-aṭ**[45], **-isau**[46]) is, in fact, something of a mystery, in particular if its suffixal formatives (**-i-** and **-s-**) are related to the past suffixes of North, Central and part of South Dravidian, as argued by Emeneau ([1957] 1967, p. 16ff.), cf.:

(773) Brahui (Bray 1907, p. 190)
**o kasaraṭ chinjik bin-isa (bin-isau, bin-isa-aṭ) hināka**
'He went along the road picking up twigs.'

[45] The suffix **-aṭ** is identical with the instrumental suffix **-aṭ**; this hybrid formation, which displays the same enigmatic instrumental case as the Indo-Aryan past gerund and some North Munda and Tibeto-Burman gerundial formations, is used especially in semi-absolute constructions, cf. **kasarāi nane shikār kar-isa-aṭ nan tammā** 'shooting on the road, night fell upon us' (Bray 1907, pp. 128, 190).

[46] This form contains the conjunction **o** 'and' attached to the regular verbal participle in **-isa** (Bray 1907, p. 128), cf. the Baluchi 'conjunctive participle' = past pple + **ō** 'and', e.g. **kuštō** 'having slain'.

Possibly there has been a specifically past verbal participle also in Brahui, which was lost with the other past non-finite verb-forms (Subrahmanyam 1971, p. 227ff.), or the originally rather weakly marked past verbal participle has been reinterpreted as specifically non-past due to recent Iranian influence. The major problem is that Baluchi, just as most of the neighbouring Iranian languages, does have a past conjunctive participle, formed on the basis of the past participle with the addition of the conjunction **ō** 'and'; Brahui does not have such a formation, using instead finite verb-forms conjoined asyndetically or e.g. with the said coordinative conjunction.

Non-past or temporally undifferentiated verbal participles, being mostly based on the non-past stem or periphrastic constructions are found also in most South Dravidian languages as e.g. ancient and modern Tamil, Kannada, Tulu, Kota and Kodagu, cf. Kannada **-a/-ā** < **-aṉ/-al** < *-(t)**tal** (Andronov 1970, p. 136; 1978b, p. 58); Modern Tamil **cāppittuk koṇṭē pēciṉāṉ** 'he talked while eating' (Agesthialingom 1979, p. 128).

In Old Tamil these forms ended in **-pu** (? >), **-ū** and **-ā** (? < **-al**). Although **-p-** seems to represent the non-past stem formative, the verbal participle in **-pu-** had more often relative past than non-past tense (cf. Andronov 1970, p. 121; Agesthialingom 1979, p. 132ff.; Subrahmanyam 1971, p. 246; Natarajan 1977, p. 171):

(774) Cil. 4.43 (cf. also KT 201)
**...cuntarac cuṇṇat tukaḷoṭu maḷaiic cintupu pariṇta ceḷampūñ cēkkai**
'...pearl necklaces, which having slipped (**cintu-pu**), lay in mixed confusion on the flowery bed together with particles of fine powder'

It was thus mainly used in the same constructions as the past verbal participle, including non-preterital manner adjuncts, cf. Cēnāvaraiyar on TOL 228 (Agesthialingom 1979, p. 135) **naku-pu vantāṉ** 'he came smiling' (compare Modern Tamil **ciri-ttuk koṇ-ṭē pēciṉāṉ** 'he said smiling' = Hindi **us ne muskarā-kar/hams-kar kahā**).

Since it did not contrast with the past verbal participle significantly, except when occasionally expressing purpose as a final infinitive, it was lost soon after the Late Old Tamil period (cf. Agesthialingom 1979, p. 135):

(775) Cil. 23.166
**kolaittalai makaṉaik kūṭupu niṉṟōḷ**
'She ascended [a cliff] in order to rejoin (**kūṭu-pu**) her murdered husband [in heaven].'

The verbal participle in **-ā** seems to have contrasted more clearly with the (specifically) past verbal participle, cf.:

(776) Nālaṭiyār, 366 (Cennai 1956; quoted from Andronov 1969, p. 182)
**kall-āk kaḻippar talaiyāyār** ...
"Prominent men spend (their time) studying (science)..."

As in the case of the Old Indo-Aryan system of gerunds, it is thus usually the past form that is or has become the unmarked and productive member of the system, the non-past form being aspectually and temporally constrained to expressing the cooccurrence of two separate continuous or concomitant activities ('while/at the time of...'). A similar situation for gerunds/conjunctive participles has been observed for the whole extended 'Indo-Altaic' linguistic area in contrast with the western European linguistic area (cf. Masica 1976, p. 128). In addition, only the past form is used in additive-sequential linkage, whereas in western European languages, it is mainly the corresponding non-past form that may (with certain operational constraints) be used in this way.

## 6.6. MUNDA INFLUENCE ON THE DEVELOPMENT OF THE GERUND?

The Munda languages, nowadays confined to certain mountaineous regions in Central and Eastern India (mainly Orissa, Bihar and Madhya Pradesh), represent the relics of the once much wider western branch of the Austroasiatic family, the eastern branch of which comprises the Mon-Khmer or Khmer-Nicobarese languages spoken in Western Further-India (as well as Assam) and on the Nicobar islands. Vietnamese and Muong are usually considered old members of this family, while Nahali, spoken in western Madhya Pradesh, occupies a more controversial position in relation to it (cf. Pinnow 1966; Bhattacharya 1976, p. 15).

The Austroasiatic languages and cultures have migrated from the east, being distantly related to the Austronesian languages and cultures of South-East Asia. Austroasiatic speakers must have occupied a vast area in North India by the time of the Indo-Aryan invasion and they are generally thought to have antedated also Dravidian speakers on the subcontinent.

We find indisputable Austroasiatic lexical loans already in the Ṛgveda, e.g. **lāṅgala-** 'plough', **hala-** 'id.', Pali **naṅgala-**, cf. Santali **na+hel** 'id.', Khmer **a+ṅ+kāl**, Čam **la+ṅal**, Khasi **ka+lynkor**, Malay **te+ṅ+gala**, **ta+ṅ+gāla** (Burrow 1973, p. 380; Bhattacharya 1975, p. 207). Some of the early Austroasiatic loanwords have been attested in Mon-Khmer or even Austronesian, but not in the present Munda languages, which have been heavily influenced by Indo-Aryan and Dravidian. Moreover, some Austroasiatic loanwords in Indo-Aryan appear also in Dravidian (cf. Tamil **ñāñcil** 'plough', Kannada **nēgal** 'id.', ibid.), making it difficult to judge the source of borrowing into Indo-Aryan.

On the other hand, apart from a few derivational suffixes occurring in tribal names (e.g. the masculine plural suffix -[N]**k**/-**g**[+V] in e.g. Juaṅga, Pareṅga and toponyms like (Sanskrit) Aṅga, Vaṅga, Kaliṅga and Dravidian tribal names like Koḍagu, Baḍaga, Korku, Teleṅga (or Telugu), there seems to be very little non-local structural borrowing from Munda into either Dravidian or Indo-Aryan.[47]

## 6.6.A. COMPARISON OF MUNDA AND INDO-ARYAN 'GERUNDS'

Austroasiatic (and Nahali) clause linkage is characterized by two patterns: on one hand we have the mixed synthetic-analytic type represented by North Munda, some South Munda languages (e.g. Sora) and Nahali. On the other hand, we have the predominantly analytic type represented by the other South Munda languages (e.g. Juang and Pareng) and all the non-Indianized Austroasiatic languages (incl. Khasi), where complex sentence formation is based on finite rather than non-finite structures.

Although many of the modern Austroasiatic languages of India possess grammatical forms that may be morphosyntactically compared with the gerund(s) or verbal participles of Indo-Aryan and Dravidian, their formal diversity and partly borrowed character indicate that they are of comparatively recent origin (Pinnow 1966, p. 174).

In the following examples from Mundari and Santali (North Munda), Kharia and Sora (South Munda), the basic morphosyntactic features and uses of these forms are illustrated with morphemic glosses as deduced from available (partly quite cursory) descriptions of these languages. (The transcription is in some cases somewhat simplified, but follows in the main the normal rules of broad transcription of South Asian languages. (COMPL = completive aspect, RES = resultative, FIN = finitizer, DUR = durative aspect, INT = intentional mood, DEF = definite aspect.)

(777) Mundari (Pinnow 1966, p. 173)

| **jom-ked-*ci*-ko** | **senog-jan-a** |
|---|---|
| *eat-COMPL(AOR)-GER-3PL* | *go away-COMPL(NON-RES)-FIN* |

'They went away as soon as they had eaten their meal'

47 The 'Munda-like' suffixes -[N]**da**, -**la** and -**ra**, found in the designation of many Munda and some Dravidian tribes, e.g. Niṣada, Pulinda, Kulinda, Koṣala, Tosala, Bhilla, Caṇḍāla, Āndhra, Śabara, etc., could principally also be Dravidian masculine pronominal suffixes (cf. Parji **toled** '(younger) brother', Tamil **avaṉ** 'he', Telugu **vāḍu** 'id.', Ollari **ōṇḍ** 'id.', etc.) or even plural suffixes (cf. Telugu -**lu**, etc. < *-**kaḷ**/-**ḷ**; cf. Bhattacharya 1974, p. 200ff.). Even -[N]**k**/-**g**[+V] could be the Dravidian plural suffix *-[ṅ]**k** (found in Gondi, Kui, Kuvi, Konda and Brahui; cf. Shanmugan 1971, p. 128).

(778) Mundari (Sinha 1975, p.125)
**...kami-tad(-*re/te*)**
*work-STATIC.PAST (LOC/ABL-INSTR)*
'...(after/because of) having done the work'

(779) Santali (MacPhail 1964, p. 45)
**kami-*ka-te* hijuk'-me**
*work-INT-ABL/INSTR/LOC come-IMP.2SG*
'After finishing the work, come!' (≠ 'finish the work and come')

(780) Santali (MacPhail 1964, p. 48)
**sɛn ñam-ked-e-a-ñ**
*go find-RECENT.PAST-3SG.OBJ-FIN-1SG.SUBJ*
'I went and found him.' (Note that the form corresponding to an Indo-Aryan gerund is morphologically quite unmarked: **sɛn**, cf. Hindi zero-gerunds, 6.3.B)

(781) Kharia (Biligiri 1965, p. 105)
**musniṅ kiṛog ḍel-*kon* larog buda bog-te**
*one day tiger come-ABL/GER date palm bush place-LOC/DAT/OBJ*
**monkan-te u+gur-*kon* socay-na lag-ki**
*face-LOC/DAT/OBJ CAUS-fall-ABL/GER think-INF continue-PAST*
'...one day the tiger came near the date palm plant and was thinking having lowered his head (having his crest fallen).'

(782) Kharia (Pinnow 1966, p. 38)
**..jeg am dauṛa ḍoḍ-*kon* co-na-m oḍog tej-*kon* ol-e-m**
*so you basket carry-ABL/GER go-IMP-2SG and carry on head-ABL/GER bring-IMP.2SG*
'...so go and get a basket and put it on your head and bring it!'

(783) Kharia (ibid.)
**...kiṛog hakŋe-*kon* gam-og**
*tiger roar-ABL/GER say-PAST.3SG*
'...the tiger, having roared, said', i.e. 'the tiger roared and said'

As in Dravidian and some Indo-Aryan and Tibeto-Burman languages, a non-finite form of the verb 'say' is in many Munda languages used as a quotative marker after reported speech (incl. thought) and onomatopoietic expressions (cf. Ramamurti 1931, pp. 52, 149f.; Kuiper 1967, p. 94; Hock 1975, p. 90; 1982, p. 77):

(784) Mundari (Sinha, 1975, p. 138)
**...senog-jan** **men-*te*** **rag-tan-a-e**
*go-COMPL(NON-RES).FIN* *say-ABL/INSTR/GER* *weep-DEF.PRES-FIN-3SG.SUBJ*
'...because he went, he is weeping'

(785) Sora (LSI IV, p. 224)
**...onā-sile** **pāṅ-lai** **gām-*le*** **opuṅ-lē-ji**
*where-from* *bring-PAST.2SG* *say-GER* *ask-PAST-3PL*
'...(the villagers) asked him where he had got it'

(786) Sora (Ramamurti 1931, p. 149; Kuiper 1967, p. 95 fn. 50)
**rameṅ-en mauṅ mauṅ** **gām-*le*** **gu-t-e**
*cat-NOM* mauṅ mauṅ *say-GER* *cry-PRES/FUT-3SG*
'The cat miaows *"maung maung"*.'

Hock (1975, p. 90; 1982, p. 77ff.; 1982) has pointed out quotative markers formed from *verba dicendi* in Austroasiatic languages outside India (Mon, Khmer, Nicobarese) as well as in Tibeto-Burman, but the fact that Sora uses a recent form (**-le[n]**), which is analogical with the Dravidian past verbal participle is probably not a coincidence in view of other cases of convergence of (South) Munda with Dravidian (Bhattacharya 1974).

If we compare the above Munda formation with the Indo-Aryan gerunds and Dravidian verbal participles, we may note two analogical types of formation:

(i) Indeclinable verb-forms based on aspectual or nominal stems of the root followed by (partly optional) instrumental, ablative or locative case affixes for expressing antecedence or simultaneousness, e.g. Santali and Mundari **-te** 'from, by, with; to' (less probably = the progressive or infective aspect affix), Kharia **-kon** = Santali **-khon** '[away] from, since, than' (Pinnow 1966, p. 173f.; Sinha 1975, p. 104; Biligiri 1965, p. 65). These formations are structurally similar to Indo-Aryan instrumental and (Marathi) ablative gerunds, but at least in Santali they are mainly propositionally restrictive or backgrounding (cf. 779).

(ii) Indeclinable verb-forms based on the bare root (Santali) or a perfective stem (Sora), expressing antecedence, e.g. Sora **-le[n]** 'perfective aspect affix' (Pinnow, ibid.; Ramamurti 1931, p. 29). These formations, which often have non-past[48] counterparts, are analogical to the Central and South Dravidian (and eastern Apabhraṁśa) past verbal participles.

[48] As in Indo-Aryan and Dravidian, these forms are occasionally repeated forms of the past or non-past gerund, cf. Juang **lo̱ṅ-ta lo̱ṅ-ta** 'looking again and again', **jim-o-gi komo-gi aro-kia roe-an-kia** 'eating and working the two lived', Sora **yer-ā-tā yer-ā-tān** 'while walking' (Pinnow 1966, p. 173), **jimu-ja** 'while eating' (LSI IV, p. 212). In Mundari the past gerund is repeated in non-preterital manner adverbials, but then the "gerundial marker" is optional (Sinha 1975, p. 126).

On the other hand, the Mundari gerund in **-ci** cannot be regarded as a proper gerundial or participial form since it is followed by the subjective infix. Those Munda languages which lack these types of formations resort to adpositional constructions of less synthetic character and/or coordinate and subordinate finite clauses. E.g.

(787) Juang (Pinnow 1966, p. 174)
**komo on-a *biri* aiñ lɛbɛr-ɛ.**
"After I shall have worked, I shall sleep."

(788) Juang (ibid.)
**komo m-on-a *biri* am mɛ-lɛbɛr-ɛ**
"After thou wilt have worked, thou wilt sleep."

(789) Pareng (ibid.)
**dos baras le-leku-*ḍu* le-yai-ai**
"Having stayed there myself for ten years I came back."

The 'gerundial marker' **biri** in Juang is etymologically identical with the temporal conjunction 'when' (cf. **bɛḷa** 'time' and Kharia **bhere** 'time, as, during'; Pinnow 1966, p. 174). There is also an alternative construction based on the coordinative conjunction **āur** 'and' < Hindi **aur** 'and'. Similarly, Pareng **-ḍu** is etymologically the coordinative conjunction 'and' (cf. Kharia **ro, oḍog** 'and'; Mundari **oḍog** 'id.').

Hence we may conclude that gerundial and verbal participial formations comparable to those of Indo-Aryan and Dravidian are lacking in most Munda languages. It will also be seen that finite coordinate and subordinate structures and especially asyndetic clause chains predominate in clause linkage in non-Indian Austroasiatic languages (cf. Pinnow 1963, p. 145; LSI IV, p. 186):

(790) Khmer (Maspero 1915, p. 417)
**vea leuṅ ci se ba tòu phta eṅ viñ**
*he mount horse return to him return*
'He mounted the horse and returned back to him...'

(791) Chrau (Thomas 1971, p. 169ff., quoted from Hock 1984, p. 98)
**néh síq. síq (ncai) (nêh) panh...**
'He returned (**síq**). Having returned (**síq**) (then he) said...'

(792) **néh sa. (sa) chong en noq neh saq** (ibid.)
'He ate (**sa**). Having finished (eating: **sa**), then he went.'

Hock (1984, p. 97f.) claims that even these constructions can be compared with Indo-Aryan gerundial and Dravidian participial constructions, but there is no morphosyntactic parallelism, because in these finite clause chains or serial verb constructions, the verb is uninflected, semantically unmarked and syntactically independent.

A further confirmation of the secondariness of the Munda 'gerunds' is that they are not by far as frequently used as the corresponding Indo-Aryan and Dravidian forms (cf. LSI IV, p. 196 and Pinnow 1965, p. 34). E.g.:

(793) Kharia (Pinnow 1965, p. 38)
**ho-kaṛ moñ upae socae-kon ocho-o? no iñ moñ konthe̤ bui-iñ**
*that-person one device think-ABL/GER come-PAST.3SG that I one bird bring up-FUT.1SG*
**buṛha aḍi-ga moñ ḍhoḍhri-te le̤ḍ-sig-na lag-ki oḍog**
*old man self-EMPH one cavity-LOC be hidden-PERF-INF continue-PAST and*
**kanḍae-bog-te gam-og...**
*old woman-LOC say-PAST*
'Having thought of a device: "I will bring up a bird", the old man hid himself in a cavity and said to the old woman...'

(794) Kharia (LSI IV, p. 196)
**aḍi uje ol-o oṛo chol-ki**
'He brought this and went.'

All these facts point to the conclusion that the Munda gerunds are recent morphosyntactic calques on the Indo-Aryan gerunds and/or Dravidian verbal participles. This is not surprising seeing that North Munda has been heavily influenced by Indo-Aryan and South Munda mainly by Central Dravidian. The rarer gerundial suffixes **-ke, -kar, -kor** in Kharia and **-kiri, -kuri** in Juang are, in fact, borrowed from Hindi and/or Sadani (< **-ke, -kar**, cf. Pinnow 1966, p. 174). Parallel (and often much more radical) cases of structural convergence are amply attested in the Indian context, e.g. non-Indo-Aryan Nahali and Bhili, which have *borrowed* most of their inflectional and grammatical morphemes

## 6.7. TIBETO-BURMAN INFLUENCE ON THE DEVELOPMENT OF THE GERUND?

The Tibeto-Burman languages belonging to the Sino-Tibetan family are spoken over a wide territory on the northern and eastern borders of India, where they have displaced earlier

Austroasiatic and perhaps also North Dravidian settlements. The linguistic influence exercised by the Tibeto-Burman languages on Indo-Aryan is of a comparatively recent date and concentrated to the eastern area (cf. Southworth 1974). There are no certain Tibeto-Burman loanwords in early Sanskrit (Burrow 1973, p. 376), nor are there any indications of intimate cultural contact with the early Indo-Aryans (cf. Parpola 1974, p. 91f.).

## 6.7.A. COMPARISON OF TIBETO-BURMAN AND INDO-ARYAN GERUNDS

The Tibeto-Burman languages make use of both synthetic and analytic constructions in clause linkage. Synthetic structures are especially frequent in the western Tibeto-Burman group, while analytic ones are more representative of the eastern group. In Classical Tibetan additive(-sequential) and temporal-circumstantial interpropositional relations are expressed by the means of the infinitive (in gerundial function) with the copulative-instrumental postposition **dań** 'with/and' or some other case postposition (**nas** 'from, after' [ABL], **las** 'after' [ABL], **kyis** 'by' [INSTR], etc.). Alternatively finite clauses or conjugated verbs are joined by clause or predicate connectives (**čiń** for concomitant action or activity [CONJ]; **ste** 'clause-final particle' [CFP], probably related to Ladakhi -**te**):

(795) **rgyal-mo gyog-mo mań-pos yoṅs-su bskor-*žiń* thub-pa-'i druṅ-du phyin-to**
*queen companion many wholly surround-CFP sage beside go-SFP*
'Surrounded by many companions, the queen returned to the sage.'
(Lalou 1950, p. 34)

(796) **lag-pa gyas-pa brkyaṅ-*nas* plag-ṡa-'i yal-ga-las bzuṅ-*ste***
*hand right extend-ABL/GER fig-tree-GEN branch- ABL seize-CFP*
**nam-mkha-'i dkyil-du ltos-ṡiṅ 'dug par gyur-to**
*heaven-GEN middle-LOC look-CONJ stay-INF.TERM be-SFP*
'Having extended her right hand, she seized a branch of the fig-tree and gazing toward the middle of the sky, she remained motionless.' (Lalou 1950, p. 92)

(797) **ña bṡor-*žiń* 'cho-'o**
*fish catch.PERF-CONJ live-SFP*
'We live by catching fish.' (Jäschke 1954, p. 56)

(798) **nam laṅs-*nas* soṅ**
*night rise.PERF-ABL/GER go.PERF*
'When the night had risen he went' (Jäschke 1954, p. 57)

(799) **soṅ-la ltos**
*go.PERF-DAT/GER look.IMP*
'On going look!' = "go and look!" (Jäschke 1954, p. 57)

The formation that shows the greatest structural resemblance with the Indo-Aryan gerund is the infinitive in **-pa/-ba + daṅ** 'with/and'. However, this construction is not coreferentially constrained, i.e. bears no relation to the system of switch reference (cf. P. Andersen, Zero-anaphora), and its interpretation as implying actional sequence seems to rely mainly upon the fixed word order (Paul Andersen, personal communication). The formal and syntactic correspondence is somewhat lesser for the analytic constructions based on tense bases followed by adpositions (case marker), especially since these 'gerunds' are not constrained by rules of coreference of subject/Actor. Note, however, that unlike Indo-Aryan oblique noun phrases they allow modal-operational transfer (cf. 799).

As can be expected, different case markers tend to confer different meanings to the Tibetan 'gerunds'. Thus the ablative and instrumental-sociative gerunds are often associated with past relative tense, while the locative gerund and any of the repeated 'past gerunds' indicate simultaneousness of action (cf. LSI III:1; Jäschke 1954, p. 55ff.; Lalou 1950, p. 34, 85f.; Poucha 1947; P. Andersen 1984). Cf. the following passage consisting of two extended sentences (quoted from Jäschke 1954, p. 85 > Poucha 1947, p. 269ff.):

(800) **der bud-med gñis śig bu gčig-la rtsod-*de* rgyal-po blo mkhas-pas**
*once woman two one child one-DAT quarrel-CFP king mind be wise-INF-INSTR*
**brtag-*nas* 'di-skad čes bsgos-'o. khyod gñis-kyis bu-'i lag-pa**
*try-ABL/GER thus so ordered-SFP. you two-INSTR son-GEN hand*
**re-re-nas bzuṅ-*ste* droṅs-*la* gaṅ-gis thob-pa bu khyer-žig**
*each-ABL seize-CFP pull-DAT/GER who-INSTR get-INF child take away .IMP*
**čes bsgo-*ba* *daṅ* bu-'i ma ma yin-pa des-ni bu-la sñiṅ-rje**
*so order-INF with/and son-GEN mother not be-INF she-NSTR son-DAT heart-give*
**med-pas snad-kyis mi dogs-*te* mthu-ji yod-par duṅs-so**
*obtain-INF-INSTR injury-NSTR not fear-CFP force-what to be-SUP pulled-SFP*
'Once two women were quarreling about a child and the king being wise in his mind and experienced ordered as follows: Seize each of you the boy by his hand and pull and whoever gets the child take it away. Having ordered this, the one who was not the mother of the son, not fearing to hurt the son, pulled as hard as she could.'

In the modern Tibetan dialects as well as in Newari and Manipuri (of the Burmese branch) we find comparable formations based mainly on tense bases or participial and infinitival stems with especially 'ablative' and 'instrumental-sociative' case markers (cf. Poucha 1947, p. 273 and LSI III:1). In Mikir of the Naga-Bodo subgroup the form corresponding closest to the past gerund consists of the 'locative' case marker added to the verbal root. In additive-seqential linkage finite clause chains or serial verb constructions are, however, quite common, especially in Burmese, which thus resembles the analytic Mon-Khmer type.

(801) Burmese (Maung & al. 1963. p. 113f.)
**tə ne'jə-hnai' mauŋ$^{2}$-lu$^{2}$-e$^{3}$ youŋ$^{3}$-hma' sɔ$^{3}$ zɔ$^{3}$ shiŋ$^{3}$-la$^{2}$-yɛ'i'**
*one day -on Mauń Lu E office -from early early return-PERF*
**eiŋ$^{2}$-j' yau'hlyiŋ**
*house go-SEQ*
'One day Mauń Lu E returned early from his office and went home and...'

In view of the distant genetic relationship of the Tibeto-Burman languages with Chinese, it is worth mentioning that Archaic Chinese did not have adpositional phrases or nominalized verb-forms corresponding to the Tibeto-Burman gerundial formations. On the other hand, it did have preposed aspectual particles (**ji$^{4}$ = *kiəd**, **ji$^{2}$ = *tsiet**) conferring perfective or completive aspect to the following verb, which construction gave the sense of temporal antecedence or prior completion of action ('do already' or 'having [already] done'). More rarely (mainly in the Book of Songs) the particle **yue$^{1}$ = *ngian** was used to express a preceding verb (phrase) in the manner of a backgrounded subordinate clause.

The most ancient type of clause linkage in Sino-Tibetan is therefore represented by (a)syndetic or aspectually marked clause chains and serial verb constructions, as characteristic of ancient (and modern) Chinese (cf. Dobson 1962, p. 49ff.; Kryukov 1980, pp. 57, 73f.), Thai and especially eastern Tibeto-Burman. On the other hand, gerundial formations based on verb stems followed by case markers must be early dialectal Tibeto-Burman innovations inspired by the substratum language(s) or the neighbouring Indian or Central Asian languages (cf. 6.4.C).

## 6.8. BURUSHASKI INFLUENCE ON THE DEVELOPMENT OF THE GERUND?

The genetically isolated Burushaski language (with its dialect Wershikwar or Yasin-Burushaski) is nowadays confined to the most inaccessible mountain vallies (Hunza and Nagir) of the western edge of the Karakorum mountain range. Its speakers are evidently

historically connected with the Kashmir neolithic culture, which is isolated from the other Indian and Iranian cultures. Burushaski speakers are thus likely to have occupied a much wider territory in Western Central Asia in pre-Dravidian and pre-Indo-Aryan times (cf. Parpola 1974, p. 92).

However, there is no evidence that Burushaski influence has extended beyond the northwestern Aryan languages. It seems to be restricted to certain phonological, morpho-syntactic and semantic innovations (or shared isolated archaisms) in Nuristani, Dardic and Eastern Iranian, e.g. the development or preservation of retroflex sibilants and retroflex and palatal affricates (e.g. **c'** < *t' < ***k'** for Indo-Aryan and Iranian ***š**),[49] the early Nuristani and Dardic disaspiration of voiced aspirates, the vigesimal system and restructuring of the higher numerals, the change to semantic gender and an ergative system based on the animacy hierarchy as part of a switch to 'active typology', etc. (cf. Toporov 1966, p. 191; Èdel'man 1980; Parpola 1974, p. 93; see also 6.5.A.1).

## 6.8.A. COMPARISON OF BURUSHASKI AND INDO-ARYAN 'GERUNDS'

Though Burushaski does have a (borrowed) conjunction **kɛ, ka** 'and' or 'when', by which clauses may be coordinated or subordinated, it utilizes mainly non-finite (gerundial and participial) structures in clause linkage. The formations in question have the appearance of being original, since the language is highly synthetic, rich in inflection, and most of the coordinative and subordinative conjunctions are borrowed (cf. Lorimer 1935, p. 382; Berger 1974, p. 55).

Burushaski has a present and a past active 'participle', the latter functioning more or less like the Indo-Aryan past gerund and Dravidian past verbal participle. The basic function of this participle has been defined by Lorimer (1935, p. 330) as follows:

> The function of this participle is to express an action as completed before, or at the point at which the action of the principal verb begins. It does not express the duration of the action but the moment at which it ceases, or at least ceases to be under consideration. It is therefore used in many instances where English (with less logic) has the present participle: "seeing him there, I turned back", "mounting his horse, he rode away". Burushaski is averse to a series of finite verbs. As a rule only the last verb of a series is put in a finite tense, the preceding ones being expressed in the form of participles. (Cf. also Berger 1974, p. 42.)

The present participle is formed by adding a suffix to the present base (802), while the past participle is formed by prefixing and/or suffixing affixes (incl. pronominal prefixes for verbs that demand them) to the past base (803)-(804). More seldom the past base is used as such (Lorimer 1935, p. 293f; Berger 1974, p. 42f.; Klimov & Èdel'man 1970, p. 70ff.).

[49] Note that Indo-Iranian **š** is evidenced already in proto-Finno-Ugric loanwords, e.g. Mordvin **šado**, Hungarian **szás**, cf. proto-IIr. ***šatam**.

(802) Burushaski (Lorimer 1935, p. 328)

**...ho** **he'r-č-ume** **ni'-m-o**

after this weep-PRES-PRES.PPLE go-PRET.-3SG.HUMAN.FEM

'...then she went off weeping'

(803) Burushaski (Lorimer 1935, Text I, p. 2, l. 10 — p. 4, l. 1)

**"wazi'r-e** **bat-er** **nI+ki-'n** **nič-am,"**

Wazir-GEN/OBL skin-DAT PAST.PPLE.ACT.+enter+PAST.PPLE.ACT go-FUT.1SG

**sie'n-im-i.** **HAn** **gunts-an-ulo** **wazi'r-e** **bat-ər**

say-PRET-3SG.MASC one day-INDEF-in Wazir-GEN/OBL skin-DAT

**nI+ki'-n** **ba'dša** **sAla'm-ər** **ni'm-i.**

PAST.PPLE.ACT.+enter+P.P.A. king.NOM/GEN salutation-DAT go.PRET-3SG.MASC

'...he said to himself: "...I will enter into the skin (= take the shape) of the Wazir and go to him." So one day, having entered into the skin of the Wazir, he went to greet the King.'

(804) Yasin-Burushaski (Wershikwar: Berger 1974, p. 42; cf. Lorimer 1935, p. 330)

**to** **n-i(+Ø)** **teṣk** **d-é+us-i.**

there PAST.PPLE.ACT-3SG.MASC(+go) dagger PREF-3SGXY+draw out-PRET.3SGMASC

**d-é+us-e** **m+úle** **da** **mu+xés-i.**

PREF-SGXY+draw out-PAST.PPLE.ACT 3SGFEM+belly up 3SG.FEM+slit-PRET.3SGMASC

**nu-mú+xes** **ílji** **d-i(+Ø)...**

PAST.PPLE.ACT-3SGFEM+slit back PREF.(-PAST.PPLE.ACT)-3SG.MASC(+come)

"er ging dorthin und zog den Dolch. Nachdem er ihn gezogen hatte, schlitzte er ihr von unten nach oben den Bauch auf. Nachdem er ihr (den Bauch) aufgeschlitzt hatte, kehrte er zurück [und]..."

Like the Indo-Aryan past gerund, this participle is used also in distributive and continous distribution and manner complements with non-preterital value. Another point in common with the neighbouring Indo-Aryan (Shina and Khowar) and Tibeto-Burman languages is the use of the verb 'say' in this form as a quotative marker: **nu+se[n]** 'having said' < **sen** 'say (cf. Lorimer 1935, p. 331). On the other hand, it is not used with perfective auxiliaries like the Indo-Aryan gerund, although it has been met with the past tense of the verb 'be' in a kind of periphrastic imperfect tense (ibid.).

Morphosyntactically the Burushaski past active participle differs fundamentally from the Indo-Aryan and Tibeto-Burman gerunds as it is inflected for person, gender and number of subject and object. It would thus correspond formally to a declinable participle rather than to a 'verbal adverb' or petrified action noun, although it apparently lacks attributive construction.