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Synchronic Etymologising and Its Role in the Acquisition of Language

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Abstract   This article first shows that synchronic etymologising – a phenomenon that finds expression in Yāska's *Nirukta* and many other Indian texts – is in fact a universal phenomenon found in many (if not all) human cultures as well as in children. It then argues that the tendency to synchronic etymologising plays an essential role in the acquisition of language, a process we all went through in our childhood.

Keywords   Etymologizing. Cratylus. Nirukta. Language acquisition. Meaning.

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1 Introduction

Pre-modern cultures often engage in what I will call 'synchronic etymologising'. Children do too. Synchronic etymologising can most generally be described as the attempt to clarify the meaning of a word with the help of other words that resemble it.

A *synchronic etymology* is to be distinguished from a *historical* (or *diachronic*) *etymology*. A historical etymology presents the origin or early history of a word; it tells us, for example, that a word used in a modern language is derived from another word belonging to an earlier language, or to an earlier stage of the same language. The Hindi pronoun *maim* 'I' is derived from the Sanskrit pronoun *mayā* 'by me', through the Prakrit pronoun *mae* (Oberlies, 1998, 17). And the English word *etymology* derives, through Old French and Latin, from Greek *etymologia* "study of the true sense (of a word)", with *-logia* "study of, a speaking of" + *etymon* "true sense, original meaning" (https://www.etymonline.com/). Synchronic etymologies do something different, sticking more closely to the etymological sense of *etymology*. They connect a word with one or more others which are believed to elucidate its meaning. The god Rudra, for example, has that name according to the Vedic *Śatapatha Brāhmaṇa* (6.1.3.10), because he cried (*rud-*) in a story that is told about him. Synchronic etymologies tell us nothing about the history of a word, but something about its meaning.

Such synchronic etymologies no longer convince linguists. One can have serious doubts about the possibility, as a general principle, of finding the meaning of a word by comparing it with other words that are similar. Synchronic etymologising is however common in children, as Jean Piaget (1925) and others after him have shown.[1] We are less tolerant with respect to adults who do so; the person who analyses the word *contentment* as concerning being *content* with *men*, or with *tea* (*content-men-t*), is diagnosed as schizophrenic by modern investigators, perhaps rightly so.[2]

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[1] See Piaget 1925. For more recent confirmations, see e.g. Brook 1970; Scarlett, Press 1975; Williams 1977; Ball, Simpson 1977.

[2] So Werner, Kaplan (1963, 259), citing a patient of Maria Lorenz (1961, 604).

2 Examples of Synchronic Etymologising in Different Cultures

Synchronic etymologies are widespread in all pre-modern cultures.[3] Here are some examples:

In the Sumerian myth of Enki and Ninhursag, the former is cured when Ninhursag causes deities to be born corresponding to Enki's sick members:

> The correspondence between the sick member and the healing deity rests on the [...] etymologizing of the ancient scribes; the Sumerian word for the sick organ contains at least one syllable in common with the name of the deity. Thus e.g. one of the organs that pained Enki was the 'mouth', the Sumerian word for which is *ka*, and the deity created to alleviate this pain is called Nin**ka**-si; similarly, the goddess born to alleviate the pain of the rib, the Sumerian word for which is *ti*, is named Nin**ti**, etc. (Kramer 1969, 37 fn. 13)

An ancient Egyptian text carved inside two pyramids dating from the 24th century BCE "is full of plays on words" such as: "O Atum-Kheprer, [...] thou didst arise (*weben*) as the *ben*-bird of the *ben*-stone in the *Ben*-House in Heliopolis" (Wilson 1969, 3). Sauneron (1957, 123 f.) adds further examples and points out that 'plays on words' were considered to give an 'explanation' of the world.[4]

In the Hebrew Bible etymologies are common, especially in connection with names: Adam is linked with *adama* 'earth' (Gen. 2:7); woman, *isha*, is derived from man, *ish* (Gen. 2:23); Cain from *qaniti* 'I have gotten' (Gen. 4:1) etc. (Böhl 1991, 163 f.).

Kirk (1974, 57 f.) emphasises the use of etymologies in Greek myths and states:

> The poets of the Homeric tradition were already intrigued by the resemblance of the name 'Odysseus' to the verb *odussomai* 'I am angry'. [...] Pytho, the old name for Delphi, is derived [in the *Hymn to Apollo*, probably late seventh century BCE] from the serpent destroyed there by Apollo and allowed to rot, *puthein*. [...] Heraclitus the Presocratic philosopher found it significant that one word for a bow resembled the word for 'life' (*biós* and *bíos*), and Aeschy-

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3 It goes without saying that each of these cultures will understand such etymologies in its own way. Such local differences are not the subject-matter of this article, which concentrates, not on the ways in which this or that tradition differs from other traditions, but on what these traditions have in common.

4 See further Morenz 1957; Sander-Hansen 1946, esp. 19 f.

lus related the name of Helen to the idea that she 'took the ships' (*hele-naus*), that of Apollo to *apollunai*, 'destroy', and that of Zeus to *zên*, 'live'. (58)

Similar efforts at etymologising characterise later Greek antiquity.[5]

An example from medieval Europe is provided by the secret spiritual organisation of the *Fedeli d'Amore*, whose representatives were active in France, Italy, and Belgium from the 12th century onward. They used a hidden language in order to keep their mystery of love secret. Love for them is a soteriological means, and accordingly the word *amor* 'love' is interpreted as *a-mor* 'without death':

> *A* senefie en sa partie
> *Sans*, et *mor* senefie *mort*;
> Or l'assemblons, s'aurons *sans mort*.[6]

Caesarius of Heisterbach (ca. 1170-ca. 1240) gives an explanation of the word *mors* 'death' in his *Dialogue on Miracles*:[7]

> Though the transgression of the first created, death entered into the world. Hence death (*mors*) received its name from 'biting' (*morsus*). As soon as man bit (*momordit*) the apple of the forbidden tree, he incurred death and subjected himself as well as his whole posterity to its necessity. Death is also said to have come from 'bitterness' (*amaritudine*), because, as it is said, no pain in this life is more bitter than the separation of body and soul.

Elsewhere he explains the word *puer* 'boy': "*Puer* ('boy') signifies *purus* ('pure')".[8]

An example from ethnographic records is the following: among the inhabitants of the Trobriand Islands the word *vatuvi* occurs in a magical formula.[9] This word has no grammatical form; it is neither noun nor verb. Malinowski (1935, 2: 249, 260-1) observes:

> the real etymological identity of this word will define it as connected with *vitawo*, or the prefix *vitu*-, and the word *vituvatu*, 'to institute', 'to set up', 'to direct', 'to show'. [It has] also [...] fortui-

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[5]   For a study of the etymologies in Homer, see Rank 1951; also Kraus 1987, 31 f. For an (incomplete) list of etymologies in Plutarch, see Strobach 1997, 186 f.

[6]   See Eliade 1986, 112.

[7]   Cited in Zaleski 1988, 50.

[8]   Cited in Zaleski 1988, 52.

[9]   Malinowski (1935, 1: 96, 2: 257) describes it as the most important formula in all Omarakana garden magic.

tous, but magically significant associations with *vatu*, 'coral boulder', 'coral reef', and the more or less real word *va-tuvi*, 'to foment', 'to make heal'.[10]

These examples suggest that synchronic etymologising is an almost universal feature of pre-modern cultures. Patrick Seriot (2016) points out that the same kind of etymologising raises its head in certain nationalistically coloured modern publications from eastern Europe.[11] However, only some cultures explicitly reflected upon this practice, and in doing so confronted the question whether or not individual speech sounds have meanings. Prominent among these cultures are ancient Greece and ancient India.

3   Attempts to Systematise

The classical Greek text on etymologising is Plato's *Cratylus*. It is also the first full investigation of 'etymologies' that has survived. In this dialogue Socrates is engaged in a discussion with two other characters, Cratylus and Hermogenes. It is possible, but not certain, that Cratylus represented, in real life, an 'etymologist'; it seems certain that the 'etymological' point of view did have real supporters. Plato's dialogue, i.e. the person of Socrates in it, initially seems to support it, but changes position in the process of working it out in detail.

The *Cratylus* contains a great number of practical examples of 'etymologies'.[12] For our present purposes it is most interesting to see that Socrates pushes his investigation of etymologies to its limits, and it is this advanced investigation that provides him with one of the arguments against 'etymologies'. His train of thought runs as follows:

> If a person asks about the words by means of which names are formed, and again about those by means of which those words were formed, and keeps on doing this indefinitely, he who answers his questions will at last give up […] Now at what point will he be

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10   Regarding the last association, *va-tuvi*, Malinowski observes (1935, 260-1): "As a matter of fact, one or two natives […] gave me this explanation of the word when commenting upon the spell". It is not clear whether any native made the association with *vatu* explicit.

11   It remains a playful feature of modern western culture, as illustrated by Lewis Carroll in the Preface to *The Hunting of the Shark*: "Take the two words 'fuming' and 'furious'. Make up your mind that you will say both words, but leave it unsettled which you will say first. Now open your mouth and speak. If your thoughts incline ever to little toward 'fuming', you will say 'fuming, furious'; if they turn, by even a hair's breadth, toward 'furious', you will say 'furious, fuming'; but if you have that rarest of gifts, a perfectly balanced mind, you will say 'frumious'" (cited in Skinner 1957, 294-5).

12   They have been collected and systematised in Gaiser 1974, 54-7.

right in giving up and stopping? Will it not be when he reaches the names which are the elements of the other names and words? For these, if they are the elements, can no longer rightly appear to be composed of other names. (Flower 1977, 421d-422a)

This gives rise to a question:

> How can the earliest names, which are not as yet based upon any others, make clear to us the nature of things, so far as that is possible, which they must do if they are to be names at all? (422d-e)

The answer proposed by Socrates is that "the name-maker grasps with his letters and syllables the reality of the things named and imitates their essential nature" (424a-b). Socrates admits that "it will seem ridiculous that things are made manifest through imitation in letters and syllables" (425d); yet there is no alternative, unless we were to believe that the gods gave the earliest names, or that we got the earliest names from some foreign folk and the foreigners are more ancient than we are, or resort to some other evasive tactic (425d-e). Socrates therefore proceeds to assign meanings to individual letters; it would take us too far to give a detailed account of his results, but the principle is simple: the phonetic nature of a sound corresponds to the object it denotes, the active sound *rho*, for example, expresses activity. By combining these individual letters, the lawgiver makes by letters and syllables a name for each and every thing, and from these names he compounds all the rest by imitation (427c).

Having reached this far, Socrates discovers an insufficiency in the propounded view, which he uses as one of his arguments against it: "If the name is like the thing, the letters of which the primary names are to be formed must be by their very nature like the things" (434a). But not infrequently a word contains sounds which have no right to be there, such as the sound *lambda*, which expresses softness, in the word *sklērótēs* 'hardness' (434d). One might of course argue that this is an added sound that does not really belong in this word, but this raises the question how it got there. The answer can only be 'by custom' or 'by convention', but this takes us back to the position which was intended to be refuted in the first place, i.e. that the relationship between words and their objects is determined by convention. Socrates concludes:

> I myself prefer the theory that names are, so far as is possible, like the things named; but really this attractive force of likeness is, as Hermogenes says, a poor thing, and we are compelled to employ in addition this commonplace expedient, convention, to establish the correctness of names. (435c)

One of the things to be noted in this dialogue is the desire to identify the ultimate elements of language and their meanings. Indeed, Socrates appears to turn against the position of Cratylus precisely because his attempt to connect the primary names with the things denoted does not succeed. One could say that the *Cratylus* is the first known attempt to analyse words right down to their ultimate constituents, the sounds.

The classical Indian text on etymologising is Yāska's *Nirukta*. This text is considered to be a 'limb of the Veda' (*vedāṅga*), one of the auxiliary sciences needed to interpret the Veda. It can approximately be dated on the basis of the following reflections. There is reason to believe that Yāska knew Pāṇini's grammar and must therefore be dated later than that famous grammarian (Thieme 1935, *23*-*24* [530-1]; Bronkhorst 1984, 8 f.).[13] The *Nirukta* is known to Patañjali's *Mahābhāṣya*, and is therefore older than that text.[14] The *Mahābhāṣya* was composed toward the end of the second century preceding the Common Era (Bronkhorst 2016, 43), and Pāṇini appears to belong to the middle of the fourth century before the common era, or to the decennia immediately following it (Hinüber 1989, 34-5; Falk 1993, 304). Yāska must fit in-between, so that we may date him approximately 250 B.C.E., which is after most Vedic texts, including the prose portions called Brāhmaṇas, had been composed.

The *Nirukta* tries to make sense of, and bring order into, the synchronic etymologising that is common in the Vedic Brāhmaṇas. How does it do so? Here we have to keep in mind that Yāska, being a Vedic Brahmin, could not reject the validity of these etymologies.[15] Their validity was, for him, beyond doubt. His question was rather: how have they been arrived at? And, how does one establish new ones?

A number of rules are formulated in the second chapter of the *Nirukta* that should enable a student to find etymologies on his own.[16] The most important among these is no doubt the rule that etymologising should, first of all, be guided by the meaning of the word concerned; phonetic considerations play a less important role:

> One should examine [a word] being intent upon [its] meaning, with the help of some similarity in function (with other words). When

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13 Scharfe (1977, 119) is slightly more circumspect: "While we cannot be certain that Yāska knew Pāṇini, he must have known a grammar so close to the Aṣṭādhyāyī as to be almost identical with it". Arguments for Yāska's greater antiquity based on his more "conservative" or "primitive" approach are without merit, not least because "the Nirukta and the Aṣṭādhyāyī can be looked upon as rational elaborations of the same set (or closely similar sets) of presuppositions" (Bronkhorst 1981, 14).

14 Cf. e.g. Limaye 1974, 9, 14, 15, 93.

15 Yāska's etymologies can of course not be completely extracted from his Vedic background, an issue taken up by in some recent scholarship (e.g. Kahrs 1988; Visigalli 2017).

16 For a full discussion, see Deeg 1995, 78 f.

not even such a similarity is present one should explain on the basis of similarity in a syllable or in a single sound. (*Nirukta* 2.1)[17]

In the case of unknown words, therefore, one looks at the context in which they occur (usually a Vedic hymn), so as to get a first impression of their meaning. Subsequently, one looks for other words (they have to be verbal forms, according to the *Nirukta*) that are more or less similar to the word under study. Semantic considerations, however, come first. So a verbal form which is less similar but closer to the expected meaning is to be preferred to a more similar verbal form that does not support the desired meaning. And words that are known to have several meanings also have several etymologies. An example is the word *go*:

> The word *go* is a name for 'earth' because it goes (*gata*) far and because living beings go (*gacchanti*) on it. Or [it is a name] of something[18] which moves (*gāti*). *o* [in *go*] is a nominal suffix. Moreover, [the word *go*] is the name of an animal (viz. 'cow') for this same reason.... Also a bow-string is called *go*... because it sets arrows in motion (*gamayati*). (*Nirukta* 2.5)

And if one does not find verbal forms that resemble the word to be explained, one should not be discouraged.

4 Minimal Meaning Bearers

The *Nirukta* gives no explanation as to why 'etymologies' should be valid at all. One way it might have accounted for the validity of synchronic etymologies based on the similarity between words (for those who accept this validity) would be to claim that there are ultimate meaning bearers, such as individual sounds or small groups of them, each with its own specific meaning. Plato's *Cratylus* does explore this possibility, as we have seen. However, the *Nirukta* does not adopt this position.[19] That is to say, it does not accept the possibility of a sound-symbolic theory. A number of early Buddhist texts, on the other hand, while referring to Brahmanic learning, mention the term

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17 The translations of *Nirukta* are by the Author.

18 This interpretation of Sanskrit *gāter vā* follows Kahrs 1984, § 12; cf. Kahrs 1998, 115, 132-3. Kahrs' "substitutional model" of Yāska's etymologising, though interesting, does not stand up to criticism; see Bronkhorst 2001, 171-6; Visigalli 2022.

19 It does occasionally present 'deep' forms which 'hide' behind the surface forms; e.g. *Nir.* 1.1: *te nigantava eva santo nigamanān nighaṇṭava ucyanta ity aupamanyav[aḥ]* "According to Aupamanyava, these [lists of words] are called *nighaṇṭu*s, being really *nigantu*s because they are quoted (*nigamanāt*)".

akṣaraprabheda (Pali *akkharappabheda*),[20] which Franke (1913, 87 fn. 6) translates "Unterscheidung der Silben" (distinction of syllables); the Pali commentators specify that the reference is to two forms of linguistic analysis, one of them being etymologising. This suggests that the idea that individual sounds or syllables have meanings of their own, and that this presumed fact explains synchronic etymologies, was not unknown in ancient India, even though the *Nirukta* does not mention it. However, the evidence is scant and suggestive, rather than probative.

Patañjali, the most authoritative commentator on Pāṇini's grammar, considers and subsequently rejects the proposal that individual sounds have meanings.[21] Among the reasons he adduces – following his predecessor Kātyāyana, whose statements (*vārttika*) he comments – is the following: in grammatical derivations there can be transposition, loss, addition, and modification of sounds. If sounds had meanings, these meanings, too, would undergo transposition, loss, addition, and modification. Such is not however the case. This argumentation is of particular interest, for Yāska's *Nirukta* (2.1-2) had presented almost exactly the same reasons in order to show that when etymologising, one is free to transpose, remove, add, or modify sounds. This proves that – in the opinion of their practitioners – neither etymologising nor grammar could possibly lead to meanings of individual sounds.[22]

This does not mean that the idea of 'real' meanings attaching to individual sounds was abandoned by all in ancient India. A different attitude towards language, and towards sacred utterances in particular, can be found in its religious literature. This alternate attitude takes interest in the deeper – some would say: mystical – meaning of these utterances. Already the Vedic texts sometimes ascribe significances to parts of words that have nothing to do with their ordinary meanings. For example, the three syllables of the word *pu-ru-ṣa* 'person, self' are stated to correspond to a threefold division of the self: to be placed respectively in the world of the sacrificer, in the world of the immortal (?) and in the heavenly world (*Aitareya Brāhmaṇa* 3.46 [15.2]). The three syllables of *hṛ-da-yam* 'heart' are explained as follows:

> *hṛ* is one syllable. Both his own people and others bring (*hṛ*) offerings unto him who knows this. *da* is one syllable. Both his own people and others give (*dā*) unto him who knows this. *yam* is one syllable. To the heavenly world goes (*eti* [pl. *yanti*]) he who knows this.[23]

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20 See Bronkhorst 1989, 129 f.

21 *Mahābhāṣya*, ed. Kielhorn, Bombay 1880-85, 1: 30-2.

22 An exception must of course be made for such verbal roots and other grammatical elements that consist of just one sound.

23 *Bṛhadāraṇyaka Upaniṣad* 5.3; tr. Hume 1975.

The 36,000 syllables of 1,000 *bṛhatī* hymns correspond to as many days of a hundred years, according to the *Aitareya Āraṇyaka* (2.2.4). The seventeen syllables of the utterances *o śrāvaya*, *astu śrauṣaṭ*, *yaja*, *ye yajāmahe* and *vauṣaṭ* are the seventeenfold god Prajāpati (*Śatapatha Brāhmaṇa* 12.3.3.3).

Two passages from the *Chāndogya Upaniṣad* are even more detailed. The word *satyam* 'truth' is said to consist of three syllables *sa-tī-yam*;[24] *sa(t)* is the immortal, *ti* the mortal, with *yam* the two are restrained (root *yam-* 'restrain') (*Chāndogya Upaniṣad* 8.3.5). The three syllables of *ud-gī-tha* 'chanting of the Sāmaveda' mean respectively 'breath' – because one stands up (*ut*tiṣṭhati) thanks to it –, 'speech' (*gīr*), and 'food' – in which all this is established (*sthita*) – (*Chāndogya Upaniṣad* 1.3.6). The second of these two analyses tries to keep contact with the 'real' meanings of the syllables concerned, the first one does not even attempt to do so.

The *Bṛhadāraṇyaka Upaniṣad* contains a story (5.2) that is interesting in the present context. The gods, men and demons dwelt with father Prajāpati as students of sacred knowledge. Asking for instruction, Prajāpati uttered the same syllable *da* to each of them. The gods understood this as *dāmyata* 'restrain yourself', the men as *datta* 'give', while the demons understood this same syllable *da* as *dayadhvam* 'be compassionate'. The divine voice, which is thunder, repeats the same: *da da da*, which is *dāmyata*, *datta*, *dayadhvam*. Therefore one should practice restraint (*dama*), liberality (*dāna*) and compassion (*dayā*). Unfortunately the passage does not explain the point of this story, and perhaps one should not attach too much significance to it. It may however be legitimate to surmise that it attributes three different meanings to the single syllable *da*, meanings which normally express themselves through the intermediary of the words *dāmyata* (or *dama*), *datta* (or *dāna*) and *dayadhvam* (or *dayā*).[25]

An early indication that individual speech sounds were looked upon as possessing powers may be found, according to Thieme (1985), in the last verse of the *Maitrāyaṇīya Saṃhitā*, which is also the first verse of the Śaunakīya recension of the *Atharvaveda*. This verse reads:[26] "The thrice seven that go around, wearing all the shapes – let the Lord of Speech put their powers into my body's [parts] today".

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[24]   *tī* is the dual of *ti*, as Keith (1909, 207) pointed out. The analysis *sat-ti-yam* is also found in *Bṛhadāraṇyaka Upaniṣad* 5.5.1, *Aitareya Āraṇyaka* 2.1.5. For another explanation of *satyam* (= *sat* + *tyam*), see *Bṛhadāraṇyaka Upaniṣad* 2.3, *Kauṣītaki Upaniṣad* 1.6, *Taittirīya Upaniṣad* 2.6; see Kudelska 1995.

[25]   Cf. Houben 1997, 70.

[26]   *Maitrāyaṇīya Saṃhitā* 4.12.1 ~ *Atharvaveda* (Śaunakīya) 1.1 ~ *Atharvaveda* (Paippalāda) 1.6: *ye trisaptāḥ pariyanti viśvā rūpāṇi bibhrataḥ/ vācaspátir balā téṣāṃ tan(u)vò 'dya dadhātu me//* tr. Thieme 1985. Doubts regarding Thieme's interpretation of this verse have been raised by Deshpande 1997, 33 f.

Thieme argues that 'the thrice seven' are the sounds of language and shows how they can, and may have been, looked upon as constituting a list of 21 elements. He then concludes (565):

> The basic sound units of the sacred language, amounting to the sacred number 'thrice seven', are the basic sacred elements of the sacred language. Being sacred, they are loaded with magic powers. Rehearsing them the brahmacārin will not only obtain the technical ability of correctly repeating and retaining what his teacher recites to him, he will, also, appropriate those magic powers: 'May the Lord of Speech put their powers into my body's [parts] (or: in my body) today (i.e., at the beginning of my vedic studies)'.

These are examples from Vedic literature. They are not confined to that literature. Similar examples can be found in more recent texts. The *Devī Bhāgavata* (9.1.6-7; cited and translated in Jacobsen 1999, 26-7) explains the word *prakṛti* in two ways, the second one dividing the word into the three syllables *pra-kṛ-ti*:

> The *pra*-word means the most excellent *sattva guṇa*, *kṛ* means the middle *rajas guṇa*, and *ti* denotes the *tamas guṇa*. She whose own nature is *triguṇa*, is endowed with powers. She is superior in creating, therefore she is called *prakṛti*.[27]

They point the way to a much more widespread concern with the deeper significance of small groups of sounds, and even individual sounds. It manifests itself in the speculative analyses of the sacred syllable *oṃ*,[28] also in other places, and reaches its apogee in certain Tantric texts, which attribute a specific metaphysical significance to every sound of the Sanskrit language (see Padoux 1990). These Tantric developments are not without precursors in Vedic literature. See, for example, the following passage from the *Pañcaviṃśa Brāhmaṇa*, also called *Tāṇḍya Mahā Brāhmaṇa* (20.14.2) and *Jaiminīya Brāhmaṇa* (2.244; close to, but not identical with it): "Prajāpati alone was here. Vāc alone was his own; Vāc was second to him. He reflected, 'Let me send forth this Vāc. She will spread forth, pervading all this.' He sent forth Vāc. She spread forth, pervading all this. She extended upwards as a continuous stream of water. [Uttering the sound] *a*, he split off a third of it – that became the earth… [Uttering the sound] *ka* he split off a [second] third – that became the midregions…

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[27] *guṇe sattve prakṛṣṭe ca pra-śabdo vartate śrutaḥ/ madhyame rajasi kṛś ca ti-śabdas tamasi smṛtaḥ// triguṇātmasvarūpā yā sā ca śaktisamanvitā/ pradhānā sṛṣṭikaraṇe prakṛtis tena kathyate//*

[28] In the *Māṇḍūkya Upaniṣad* and elsewhere.

[Uttering the sound] *ho* he cast [the last] third upwards – that became the heaven" (tr. Holdrege 1994, 44). The context provides no clue as to why exactly these sound have the effect described.

Tantric speculations like these present, in a way, the Indian counterpart of Plato's 'primary names' discussed above, and the 'primary sounds' of the Stoics. Yet there is a major difference. These Tantric speculations base themselves primarily on so-called *bīja-mantra*s, utterances that are usually devoid of ordinary meaning. The metaphysical meanings assigned to the individual sounds are not, therefore, meant to contribute to the meanings of ordinary words that contain them. No longer restrained by the shackles of ordinary language use, the Tantric authors could establish the meanings of all the sounds of the Sanskrit language.[29]

It is clear that these Tantric speculations are far removed from etymologies, including synchronic etymologies. Note, however, that these Tantric speculations have parallels in the Jewish Kabala and similar developments within Islam.[30] Yet, though removed from etymologies, these speculations cannot be separated from them. They are, in a way, the ultimate outcome of the analysing process which found its inspiration in those etymologies.

5 Why Synchronic Etymologising?

It is time to return to synchronic etymologising. What induces people to engage in this futile activity? With the exception of grammatically related words – such as *go*, *going*, *goes* – synchronic etymologising does not elucidate the meaning of words. And yet, it is not the cultural specificity of one or two cultures; it rather appears to be a universal feature. What is going on here?

The answer I propose is as follows. Understanding a flow of spoken language is a complicated process. Christiansen and Chater (2022, 37) speak in this connection of the "puzzle [...] that we are able to keep up with the onslaught of language at all". An essential part of this process, they point out, is "'chunking': a fundamental memory process by which we can combine two or more elements into a single unit" (39):

Once the acoustic signal from the speaker's voice has been separated from the background, it is converted from a complex sound

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29 See Padoux 1990, 235 ff.; Ruegg 1959, 108 f.

30 For the Jewish Kabala, see Scholem 1983, 55-99 ("Le nom de Dieu ou la théorie du langage dans la Kabale; mystique du langage"); for Sufism, see Schimmel 1975, 411 ff. ("Letter Symbolism in Sufi literature"). Staal (1979, 7) briefly refers to the parallelism between Kabala and the Tantric speculations under consideration.

wave into a simple initial chunk-based format, such as phonemes […] or syllables. […] these sound-based units arrive at an astonishing rate in fluent speech. (42)

Indeed,

[t]he need for the brain to continually chunk the input, and make chunks of chunks, explains why human language, despite their enormous variation, are all organised into hierarchies of units, such as phonemes, syllables, words and phrases. (45)

It follows that, without knowledge of the relevant chunks, fluent speech will remain unintelligible. And clearly, those who are learning a new language (including most notably children) have to learn to identify those chunks.[31] This process can be seen in the making in mistakes that children sometimes make:

… consider the delightfully bizarre **I am being have**, as a response to **Behave!**. The child may reason that **I am being quiet** is a perfectly good response to **Be quiet!** so why shouldn't **Behave!** follow a similar pattern? (110; emphasis in the original)

We can conclude that we all analyse linguistic utterances in our childhood and end up with words and concepts related to them. Without the tendency to analyse, we would not be able to acquire language. However, this tendency to analyse linguistic utterances does not stop at the level of words. Analysis continues and enables language users to identify morphemes. But it does not stop there either: we go on looking for meaningful constituents below the level of morphemes (like 'be' and 'have' in the above example). At this point our analysis will no longer provide us with deeper understanding; this, at least, is the opinion of us moderns. Many pre-modern people disagreed and persisted in searching for more elementary word constituents, sometimes even for their most elementary parts. As we have seen, children do the same.

All this may look innocent enough, even naïve. However, the tendency to segment linguistic utterances and look for meaningful units even below the level of words and morphemes may tell us something more important about the way we learn language. Far from encouraging to look for linguistic units corresponding to pre-existing mental representations, it suggests that our representations are the out-

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31 It appears that "a fundamental task of language acquisition, segmentation of words from fluent speech, can be accomplished by 8-math-old infants based solely on the statistical relationships between neighboring speech sounds" (Saffran 1996).

come of the segmentation ('chunking') of the linguistic utterances we are confronted with.

Some Indian thinkers illustrated this, somewhat simplistically, as follows. By listening to the different expressions 'bring the cow' and 'tie up the cow', a child learns that the common part of these two utterances, 'cow', refers to a cow. The two expressions 'bring the cow' and 'tie up the cow' are initially connected, in the child's mind, with two altogether different situations. However, the two situations have one element in common, and the two utterances have one portion in common, i.e. the cow and the word 'cow' respectively. This word does not correspond to a pre-existing representation, but the representation is created through the segmentation of the utterances: the common linguistic unit 'cow' induces us to carve out of the two experiences corresponding to 'bring the cow' and 'tie up the cow' the part they have in common.[32] In other words, we learn language through the segmentation of holistic utterances, and our representations come about in the same way.[33]

The same process may have been at work in the very first language users, many millennia ago: holistic utterances were segmented and interpreted so as to give rise to specific representations. The origin of language is of course a topic of much debate, in which the theory of a holophrastic protolanguage is but one candidate among others.[34]

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[32] On the role of language in creating concepts, see Bronkhorst 2022, § 3.

[33] Similarly Arbib 2012, 287: "Initially, the child will use only a single word, but the word may well serve as a holophrase – a whole utterance whose pieces have not separate meaning for the child. Thus, the sound patterns that we write as *want milk* and *milk* may have the identical meaning that the child wants milk – but at a stage where the child has no meaning for *milk* save as part of the consummatory act that it involves (and certainly no general concept of *consummatory act*!). However, eventually, the child begins to fractionate its utterances, so that *milk* can be talked of outside the context of wanting, and *want* can be applied to different things in the child's world".

[34] See Arbib 2012, 254 ff. Derek Bickerton (2010, 171), while still resisting the notion of a holistic protolanguage, has come to accept that specific representations are analysed out of evaluations of situations. To cite his own words: "Initial displacement signals might well have been holistic; a signal, rather than meaning simply 'elephant' like a modern word, might have been interpreted as something equivalent to 'There's a dead elephant out there and we can eat it if we all move quickly' (there is no need to suppose that the underlying semantics of such a modern-language message would have been represented – a mental image of a dead elephant plus the thought of all that meat would have been enough). While such a usage of 'elephant' might qualify technically as displacement (insofar as it conveyed information that might be already several hours old about a sight perhaps several miles distant), its meaning, unlike that of words, would be tied to one kind of situation involving elephants. However, once this degree of displacement was available (that is, once the 'elephant' signal was freed from its dependence on a physically-present, sensorily-accessible elephant), the road was opened to further developments: use of the same signal on seeing elephant footprints or dung, or imitations of elephants in children's play, for example. Use of a constantly widening range of contexts would move the signal closer to becoming a true symbol – closer to the kind of meaning exemplified by the modern word 'elephant'". Note in this connec-

This is clearly not the place to discuss the various pros and cons of this theory with respect to its competitors.[35] However, the human tendency (with which we are apparently born) to analyse and segment linguistic utterances even beyond what is objectively meaningful should count as an argument in its favour.[36]

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tion that a recent publication (Schel et al. 2013) demonstrates that "some chimpanzee alarm calls show numerous hallmarks of intentional communication".

35   See Bronkhorst 2012, 55-69.

36   Note also Arbib 2012, 265: "The process of fractionation continues even in modern languages as words get decomposed to new words or word-stems: 'helicopter' yields 'copter', even though it was formed as 'helico + pter (wing)'; 'cybernetics' yields 'cyber-', even though its etymology involves the stem 'cybern-' (as in 'govern'); web + log –> blog, and kangaroo –> roo –> roobar (a device on the front of Australian country vehicles for protection in case of a collision with a kangaroo); hamburger (= bun typical of Hamburg) –> cheeseburger, veggieburger, and so on". Arbib, Iriki (2013, 490) speak of "an adaptive pressure to speed the production and recognition for [...] distinctions as a basis for acquiring a lexicon and a (proto)syntax".

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From Standard Marker to Adaptor: The Case of Vedic *iva*

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Abstract   In Early Vedic, the particle *iva* primarily functions as a standard marker of similative constructions; in Middle Vedic, *iva* retains its function of marking comparison of equality but also behaves as an adaptor, i.e. an approximation marker which flags the semantically loose use of a lexical expression. Informed by cross-linguistic evidence in the domain of approximation, this paper traces *iva*'s development from standard marker to adaptor within the oldest layer of Vedic literature, represented by the *Ṛgveda*. The analysis is carried out from a grammaticalization perspective, detecting the different steps that led to the emergence of the new function.

Keywords   Grammaticalization. Similative constructions. Approximation. Vedic Sanskrit. Ṛgveda.

Summary   1 Introduction. – 2 Approximation. – 3 Ṛgvedic Similative Constrictions. – 4 The Approximative Function of *iva*. – 4.1 Approximative *iva* in Vedic Prose. – 4.2 Approximative *iva* in the ṚV. – 5 Varying Hypotheses on *iva*'s Original Function. – 5.1 Two Hypotheses from the Literature. – 5.2 Revisited Hypotheses. – 6 From Standard Marker to Adaptor. – 6.1 Bridging Context 1: Similative Constructions Whose Comparee Is a Referential Null Argument. – 6.2 Bridging Context 2: Mismatches in Argument Structure of Comparee and Standard. – 6.3 Bridging Context 3: Predicative Similative Constructions with or Without Copula. – 6.4 Bridging Context 4: Similative Constructions Whose Standard is a Substantivised Adjective or Participle. – 6.5 Interim Summary. – 6.6 Approximating *ná*? – 7 Summary and Conclusion.

1 Introduction

In Early Vedic, the language attested in the *Ṛgveda* (ṚV), the particle *iva* primarily functions as a standard marker of similative constructions, as in example (1); in such constructions, *iva* is found in complementary distribution with *ná* and, more rarely, with *yáthā*. In Middle Vedic, the language of Vedic prose, *iva* retains its function of marking comparison of equality, but also behaves as an adaptor, i.e. an approximation marker which flags the semantically loose use of a lexical expression (Prince et al. 1982), as shown in example (2):

(1) ṚV 1.1.9ab

sá	*naḥ*	***pitā́***	***iva***	***sūnáve***
as_such	1PL.DAT	father.SG	like	son.DAT
ágne	*sūpāyanó*	*bhava*		
agni.VOC	easily_accessible.NOM	be.IMPV.PRS.2SG		

'Like a father for a son, be of easy approach for us, o Agni'.[*]

[*] If not differently stated, translations of Ṛgvedic passages are taken from Jamison, Brereton 2014.

(2) ŚB 11.1.6.9

sasṛjānāya	***tama***	***iva***	*abhūd*
create.CVB	darkness(N).NOM	like	be.AOR.3SG

"Having created (the Asuras), a kind of darkness has come to be". (Brereton 1982, 444)

Since the approximative function of *iva* can already be seen in some Ṛgvedic passages, there is disagreement in the literature as to which of the two functions, the comparative or the approximative, was the original role of the particle.

    This paper aims to make a case for the development of *iva* from a standard marker of similative constructions into an adaptor, and to trace this development within the ṚV.[1] This direction of change has

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[1] Due to its complex internal chronology, the ṚV constitutes a diachronic corpus and lends itself to the study of language change. The division of the ṚV into ten books (*maṇḍala*, lit. 'circle') in fact reflects its internal chronology. The core of the collection, its oldest part, are books II to VII (the so-called "Family Books"), whereas book X is the most recent. Book VIII and I are for the most part younger than the Family Books. Finally, book IX differs from the others in that it is organised thematically: it is a liturgical collection of hymns to the god Soma Pavamāna ('self-purifying soma'). Invaluable work on the organisation and history of the ṚV was done by Bergaigne (1886; 1887a) and Oldenberg (1888, 191-270). For a summary and further explanation see Witzel 1995; 1997.

already been suggested by Viti (2002, 71 fn. 16), who, however, does not explore it further. The analysis is carried out from a grammaticalization perspective, tracing the sequential steps that led to the emergence of the new function.

The paper is organised as follows. In section 2, I review the literature on approximation, focusing on the most common sources of adaptors cross-linguistically and on the new functions they lay the groundwork for. In section 3, I introduce Ṛgvedic similative constructions marked by *iva* and by the two other particles, *ná* and *yáthā*; in this section, I also present the most widely accepted hypotheses regarding the origin of the three particles and the developments they underwent in Middle Vedic texts. In section 4.1, I suggest that the different functions performed by *iva* in Vedic prose correspond to those attested cross-linguistically for adaptors; in section 4.2, I describe *iva*'s approximative use as attested in the ṚV. In section 5, I summarise different hypotheses that have been advanced in the literature regarding the original function of *iva* (section 5.1) and reevaluate them based on comparative as well as textual evidence (section 5.2). In section 6, I trace the grammaticalization path that led the standard marker *iva* to acquire an approximative function; this section describes four different contexts that may have led to the emergence of the new function and to its progressive conventionalisation. Section 7 summarises the results.

2 Approximation

In the domain of hedging, Prince et al. (1982) distinguish between approximators and shields. This distinction reflects a fundamental difference as to the linguistic level they operate on: approximators modify the propositional content of an utterance as in (3), whereas shields operate on the pragmatic level by weakening the epistemic force of an utterance, as in the case of plausibility shields (4), or by indicating less reliable types of information sources, as in the case of attribution shields (Prince et al. 1982; Mihatsch 2009, 66):

(3)   *His feet were **sort of** blue*

(4)   ***I think** his feet were blue*
        (Prince et al. 1982, 85)

Despite this distinction, many markers show ambiguous uses, and often approximator functions can arise as implicatures of shields and vice versa (see e.g. Kaltenböck 2010 on the English shield *I think*).

Approximation markers are in turn subdivided into adaptors and rounders: the former trigger loose readings of a lexical expression,

as English *like* or *sort of,* whereas the latter indicate imprecise numerical values, as English *about* (Prince et al. 1982, 93).

Diachronically, rounders and adaptors usually emerge from different sources. While typical sources for rounders are spatial expressions, many adaptors share a source based on the notion of resemblance. The most common sources of adaptors are standard markers of similative constructions which, implying only a partial resemblance, themselves contain an approximation. This is the case with French *comme* in (5), Portuguese *como*, Spanish *como*, Italian *come*, all going back to the Latin standard marker *quomodo* 'in which way'; the same holds for Portuguese *quase*, Spanish *casi* and Italian *quasi* 'almost', all from Latin *quasi* 'as if'. English *like*, Swedish *liksom*, and marginally German *wie* also share the same path from qualitative similarity to approximation. Outside of the European language domain, Fleischman (1999) observes equivalent paths in Bislama, Japanese, Lahu, and Hebrew (see also Ziv 1998). As we shall see in detail below, when standard markers lose their syntactic and semantic relationality, they become modifiers of noun phrases, signalling their semantically loose use:

(5) *on voit **comme** une sorte de gros nid*
     'You can see like a sort of big nest'.
     (Mihatsch 2010a, 104)

Less common, but semantically very similar, is the emergence of adaptors from qualitative deictics (see Mihatsch 2010b, 270-1), as in the case of English *such*, *like that*, German *so*, French *comme ça*, *tel*, Portuguese *assim*, *tal*, Spanish *así*, *tal*, and Italian *così*, *tale*. All these items establish a relation of similarity between a comparee and a standard of comparison retrieved by situational deixis, by anaphorical relations to a preceding or following unit, or by reference to knowledge shared by speaker and hearer. The path from deixis to approximation is made clear by example (6), reporting a request by a client in a bakery shop: while in the request we could imagine a pointing gesture and thus interpret *so* deictically, the recorded answer "it's only available at noon" clearly suggests that an approximative interpretation is needed here, rather than a deictic one.

(6) A: *Geben Sie mir **so'n** Streuselapfel*
     'Give me **such** a crumbly apple/a crumbly apple **like that**'
     B: *Das gibt's erst mittags, wissen Sie?*
     'It's only available at noon, you know?'
     (Lovik 1990, 122-3; in Mihatsch 2010a, 104)

Finally, a syntactically and semantically different path leads from taxonomic nouns to adaptors, instantiated by English *sort of* and *kind*

of, French *espèce de, genre de, sorte de,* Portugue *espécie de, tipo de, gênero de,* Spanish *especie de,* Italian *specie di, tipo di* (see Mihatsch 2007 and Voghera 2013 and 2017 for comparative studies; see Mihatsch 2010a, 105 for relevant literature).

In distinction from the examples presented above, some paths are shared by both rounders and adaptors. Take, for instance, the following general extenders, corresponding to English *or something like this* (Overstreet 1999; Cheshire 2007):

(7) *j'avais euh quatorze ans **ou quelque chose comme ca***
     'I was fourteen years old or something like that'.

(8) *habría que construir una especie de cómo le diría yo? como de cobertizo **o algo así***
     'One should build a kind of how shall I say like a shed or something like that'.
     (Mihatsch 2010a, 108)

While rounders usually do not develop other functions, subsequent changes occur often in the case of adaptors. A new function developed from adaptors is the one of signalling figurative speech, which derives from the fact that metaphors are also based on similarity, although across two conceptual domains. Take for instance example (9) from Italian, in which *come* ('like') flags a figurative reading:

(9) *i francesi hanno voluto **come** pagare un debito verso il loro poverissimo ciclismo*
     'The French wanted to like pay a debt toward their poor cyclism'.
     (Mihatsch 2010a, 111)

Another function of adaptors relating to signalling inappropriateness of a word due to semantic deviation is one of flagging changes in register. Furthermore, adaptors may be used as shields for pragmatic mitigation as in French *Y'a comme un problème* 'there is like a problem' (Mihatsch 2009). In some languages such as Spanish and Portuguese, the same adaptors that have developed shield functions are also employed as rounders (cf. Spanish *como*; Mihatsch 2010a, 112). According to Mihatsch (2010a, 113), the transition of the adaptor towards the rounder function comes about precisely through the intermediate employment of the term as a shield, leading to syntactic flexibilization of the term and thus allowing it to occur with quantifying expressions.

In light of these considerations, Mihatsch proposes the following semantic map of approximation, a domain in which unidirectionality is the rule (e.g. from similarity to adaptor to rounder, from shield to rounder) and bidirectionality is the exception (between adaptors and shields):
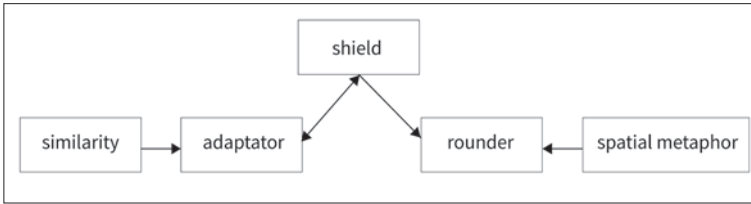
3   Ṛgvedic Similative Constrictions

Similative and equative constructions encode similarity between a comparee (CPREE) and a standard (STAND) with respect to some action or property, called a parameter (PAR), and by means of a standard marker (STM; Haspelmath, Buchholz 1998; Treis 2018).[2] Similative constructions encode qualitative comparison, or comparison of manner (10a); equative constructions encode quantitative comparison of equality (10b).

(10)

a. | *Peter* | *behaves* | *like* | *a child.* | | |
|---|---|---|---|---|---|
| CPREE | PAR | STM | STAND | | |

b. | *Peter* | *is* | *as* | *tall* | *as* | *Susan.* |
|---|---|---|---|---|---|
| CPREE | | PM | PAR | STM | STAND |

In the ṚV, constructions introduced by the standard markers *ná, iva,* and *yáthā* constitute the main strategy for the encoding of comparison of equality. These are characterised by systematic ellipsis of the verb in the standard and by case transparency (Haspelmath, Buchholz 1998, 307), i.e. formal and functional parallelism between comparee and standard (Bergaigne 1887b; Jamison 1982; Pinault 1997a; Kulikov 2021). In such constructions, the standard marker follows the standard of comparison or, when this is a complex phrase, the first element of the standard. Qualitative and quantitative comparison are encoded by the same constructions and are therefore nearly impossible to distinguish (henceforth: similatives). Ṛgvedic similatives occur in different configurations of comparee(s) and standard(s). Single similatives can take an adjectival predicate as parameter or a verbal one, as in (11):

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2   Some languages and some constructions also feature a parameter maker (PM).

(11) ṚV 10.13.1b

ví	*ślóka*	*etu*	***pathyā̀***	***iva***	*sūréḥ*
LP	signal_call.NOM	go.IMPV.3SG	pathway.NOM	like	patron.GEN
	CPREE	PAR	STAND	STM	

'Let the signal-call of the patron go forth afar like a pathway'.

Double similatives are characterised by the presence of two parallel elements in the comparee and in the standard, and thus have a gapping structure (12). Less often, similatives may be triple, with comparee and standard consisting of three elements each, or the similative marker can be employed predicatively, as in (13):

(12) ṚV 6.19.3cd

yūthā̀	***iva***	***paśváḥ***	***paśupā̀ …***	*asmā́m̐*	*indra*
flock.ACC.PL	like	cattle.GEN	herdsman.NOM	1PL.ACC	Indra.VOC
STAND$_j$-	STM	-STAND$_j$	STAND$_i$	CPREE$_j$	CPREE$_i$
abhí	*ā́*	*vavṛtsuva*			
LP	LP	turn.IMPV.PF.2SG.MID			
		PAR			

'Like a herdsman to his flocks of livestock o Indra, turn here to us'.

(13) ṚV 7.33.8a

sū́ryasya	***iva***	***vakṣátho***	*jyótir*	*eṣā́m̐*
sun.GEN	like	waxing.NOM	light(N).NOM	3PL.GEN
STAND-	STM	-STAND	CPREE	

'Their light (is) like the waxing of the sun'.

As shown by *pathyā̀ iva* 'like a pathway' in (11), *yūthā́ iva paśváḥ paśupā́* 'like a herdsman to (his) flocks of livestock' in (12), and *sū́ryasya iva vakṣátho* 'like the waxing of the sun' in (13), standards of similative constructions of this type are virtually always generic. Rather than referring to individual discourse referents, generic standards refer to a class that possesses the property in question to a highly salient degree or which is the prototypical participant of the described event (Haspelmath, Buchholz 1998; cf. "frozen similes" in Gibbs 2007, 699). Thus, we can say that Ṛgvedic similative constructions of this type specialise for figurative comparison and can be defined as similes in all respects.

From what we have seen so far, we can conclude that Ṛgvedic expressions introduced by *ná*, *iva*, and *yáthā*, constitute a single kind

of coherent construction from the point of view of both syntax and semantics. Syntactically, they have a syntagmatic nature and present clitic standard markers, whose distribution is determined by the ending of the previous word as well as by its morphological category (Pinault 1997a); semantically, such constructions are specialised for figurative comparison and can be defined as similes in all respects.

Despite their common syntactic and semantic features, the three particles employed in equative constructions differ with respect to their origin, their frequency within the ṚV, and in their later developments. The most frequent comparative particle in the ṚV is *ná*. In this text, the particle *ná* is used both as a negative particle and as a standard marker, its polysemy resulting from a semantic shift from negation to comparison. Equative constructions marked by *ná* emerged from the so-called negative parallelism (Pinault 1985) via ellipsis of identical verbs and cliticization of *ná*. In the comparative function, *ná* occurs 1,330 times in the ṚV but its frequency drastically decreases in the *Atharvaveda* (45 occurrences, of which 14 are quotations from the ṚV), and eventually disappears in Middle Vedic, where it is completely replaced by *iva* and *yathā*.

According to the traditional view (KEWAia, EWAia, s.v. *iva*), the comparative particle *iva* derives from the combination of the demonstrative stem *h_1i-* with the PIE disjunctive particle *$u̯e$* 'or', but different hypotheses have been proposed as to its etymology as well as its original function (see section 5.1). In the ṚV, *iva* is attested 1,023 times, of which between 100 and 170 also allow an approximative reading.[3] In contrast to *ná*, *iva* is gaining productivity in the ṚV (Pinault 1997a) and becomes the most productive marker of similative constructions in Middle Vedic as well as in Classical Sanskrit.

The particle *yáthā*, with its unaccented variant *yathā*, is a reflex of the combination of the relative stem with the manner suffix *-thā* 'in which way'. Syntagmatic comparison introduced by *yáthā/yathā* derives from subordinate clauses of manner via elision of identical verbs and cliticization of the particle. In the ṚV, we find 76 syntagmatic equatives marked by *yáthā* and 87 comparative clauses of manner (Biagetti 2021; but cf. Hettrich 1988, 262-78).[4] In Middle Vedic and Classical Sanskrit, *yáthā* survives as a standard marker; unlike *iva*, which is limited to syntagmatic similatives, *yátha* introduces both syntagmatic and clausal comparison.

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3 It is hard to provide the exact frequency with which *iva* occurs in this function, since commentaries and translations often differ in the interpretation of the respective passages.

4 Note that the difference between clausal and syntagmatic comparison is not limited to the presence vs absence of a verb: while in the former *yáthā* functions as a subordinator and occurs in clause-initial position, in the latter *yáthā/yathā* has a clitic behaviour and follows the standard.

4 The Approximative Function of *iva*

4.1 Approximative *iva* in Vedic Prose

In Vedic studies, the employment of *iva* outside of similative constructions has been described as having an indefinite function, but the descriptions of the contexts of usage, provided in particular by Brereton (1982) for Vedic prose and by Pinault (2004) for the ṚV, can be assimilated to those described for adaptors in section 2. Just like adaptors, in Vedic prose, *iva* can occur with different lexical classes (cf. example (2) with a noun and (14) with a verb) flagging the semantically loose use of the preceding word. Furthermore, *iva* seems to have developed pragmatic functions often developed by adaptors.

For instance, in the *Chāndogya Upaniṣad* (Ch.U.), Uddālaka tells Śvetaketu to examine the inside of a fig and to describe what he sees. The latter's response is provided in (15), where *iva* functions as a moderator ('quite'), i.e. as a scalar modifier which approximates an average range on a scale (Paradis 2000, 149).

(14) ŚB 11.2.7.33

tasmād	*dakṣiṇaṃ*	*vedyantam*	***adhispṛśya***	***iva***	*āsīta*
therefore	souther.ACC	altar_border.ACC	touch.ABS	like	seat.OPT.3SG.MID

"Thereupon, after touching in some way the southern border of the altar, he should sit".

(Brereton 1982, 446)

(15) Ch.U. 6.12.1

aṇvya	***iva***	*imā*	*dhānā*
fine.NOM.PL.F	like	DEM.NOM.PL.F	seed(F).NOM.PL

"The quite fine seeds here".

(Brereton 1982, 446)

In example (16) from the *Gopatha-Brāhmaṇa* (GB), a double *iva* signals the markedness of the preceding adjectives, which derives from their being in opposition to each other and to the expected conclusion: though the man is large, and the distance is small, night travel is still frightening. As we have seen above, adaptors often serve to signal marked expressions, such as figurative speech, and stylistic discrepancies.

(16) GB 2.5.1

tasmād dhāpy	*etarhi*	**bhūyān**	**iva**	*naktaṃ*	
therefore	at_present	big.NOM	like	by_night	
sa	*yāvan*	**mātram**	**iva**	*apakramya*	*bibheti*
3SG.NOM	rider.NOM	short.ACC	like	distance	be_afraid.PRS.3SG

"Therefore, even today, (although) **quite big**, he who travels even a **quite short** distance at night becomes afraid".

(Brereton 1982, 447)

In another passage from the Ch.U. 6, reported by Brereton (1982), Āruni tries to show his son Śvetaketu that different objects can be explained as combinations of three basic elements: heat, water, and food. Understanding this, the great householders from of old were able to recognise everything that was presented to them. In (17), Āruni summarises the insights of these householders. In the first three sentences, the particle *iva* follows the adjective indicating the colour (*rohitam* 'red', *śuklam* 'white', *kṛṣṇam* 'black'), marking it as not necessarily close to the prototype (see the 'somewhat' in the translation); eventually, something could be *avijñātam iva* 'somewhat indistinguishable', but the householders were nevertheless able to recognise it as the combination of the three elements. Note that the quotative particle *iti* 'thus, so' does not only follow the direct speech, but also the expression of the householders' insight. This suggests that *iva* functions here as an attribution shield, indicating an indirect source of information.[5]

(17) Ch.U. 6.4
   yad u **rohitam ivā***bhūd* <u>*iti*</u> *tejasas tad rūpam iti tad vidāṃcakruḥ /*
   yad u **śuklam ivā***bhūd* <u>*ity*</u> *apāṃ rūpam iti tad vidāṃcakruḥ /*
   yad u **kṛṣṇam ivā***bhūd* <u>*ity*</u> *annasya rūpam iti tad vidāṃcakruḥ //*
   yad v **avijñātam ivā***bhūd* <u>*ity*</u> *etāsām eva devatānāṃ samāsa iti tad vidāṃcakruḥ /*
   ["The red appearance of a fire is, in fact, the appearance of heat, the white, that of water, and the black, that of food". … It was, indeed, this that they knew, those extremely wealthy and immensely learned householders of old. …]
   When something was **somewhat red**, they knew: 'That is the appearance of heat';
   when something was **somewhat white**, they knew: 'That is the appearance of water';
   when something was **somewhat black**, they knew: 'That is the appearance of food';
   and when something was **somewhat indistinct**, they knew: 'That is a combination of these same three deities'".

(adapted from Olivelle 1998)

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5 Brereton attributes a slightly different function to *iva* in this passage. According to him, the function of *iva* is to generalise on the basis of the specific examples given before: 'any red appearance' is a manifestation of heat, etc.

4.2   Approximative *iva* in the ṚV

As mentioned in section 3, *iva*'s approximative function is attested already in the ṚV, where it is much rarer than it will later become in Vedic prose. Pinault recognises an approximative use in 171 out of 1023 occurrences of *iva* in this text, which he reports in full in his 2004 article. Geldner (1951), as well as Jamison and Brereton (2014) tend to infer missing elements of what they consider to be a similative construction; Pinault (2004), on the other hand, refrains from supplying a comparee when this is not explicitly expressed and thus interprets *iva* as an adaptor in a higher number of cases. For instance, in example (18), Jamison and Brereton interpret *hradáṁ kulyā́ iva* 'as brooks (reach) a lake' as the standard of a simile and supply *your resolve* as comparee, suggested to them by the singular *krátum* 'resolve' in *pāda* b. In contrast, Pinault (2004, 291) interprets *kulyā́* as the subject of *aśata* and *iva* as an approximator signalling that these streams are not real streams, but praising words that invigorate Indra (the sea).

(18) ṚV 3.45.3cd

prá	*sugopā́*		*yávasaṁ*	*dhenávo*	*yathā*
LP	with_good_herdsman.NOM.PL		pasturage(N).ACC	cow.NOM.PL	like
hradáṁ	***kulyā́***		***iva***	*aśata*	
lake.ACC	brook.NOM.PL		like	reach.AOR.3PL.MID	

1. "[Your resolve (***krátum***), deep like pools – you foster it, like cows.] As milk-cows with a good herdsman reach pasturage, as brooks reach a lake, (so your resolves) have reached fulfillment". (Jamison, Brereton 2014)
2. "As milk-cows provided with a good herdsman (reach) the pasture, some kind of streams have reached the sea". (Pinault 2004, 291)

As in Vedic prose, in the ṚV approximative *iva* occurs in combination with nouns or substantivised adjectives (approx. 60 occurrences according to Pinault 2004), in predicative constructions with or without copula, and with verbs such as 'appear' (approx. 40 occurrences), or in combination with adjectives (approx. 30 occurrences). In this function, *iva* occurs more rarely with adverbs and verbs (approx. 20 and 8 occurrences respectively) and only a couple of times with numerals (in which case it functions as a rounder). However, in this text, the particle takes a much smaller range of nuances than those listed in section 2 (based on Mihatsch 2010a) and actually attested in Vedic prose. In most cases in which *iva* accepts an approximative interpretation in the ṚV, usually rendered as 'as it were'/'gleichsam' by translators, the function of the particle is to signal figurative speech, as the following discussion of examples (19) and (20) illustrates.

In (19), following Pinault, interpreting *iva* as an adaptor seems to be the most sensible choice.[6] Since the verse is addressed to Agni, *iva* seems to have the function of flagging the metaphorical expression of the fireplace as a 'seat' or 'abode' that men have built for the god.

(19)   R̥V 1.67.10b

sádma	***iva***	*dhī́rāḥ*	*sammā́ya*	*cakruḥ*
seat(N).ACC	like	clever.NOM.PL	together_build.ABS	make.PF.3PL

1. "The clever ones made (for Agni) some kind of seat by building together". (Pinault 2004, 291)
2. 'Like clever men an abode, the wise have made a seat (for him), having measured it out completely'. (Jamison, Brereton 2014)

In example (20), *iva* signals the figurative meaning of the participle *jájhjhatīr* 'laughing'/'giggling', which is a synesthesia for the lightning flashes following the Maruts.

(20) R̥V 5.52.6cd

ánv	*enā́m̐*	*áha*	*vidyúto*
LP	3PL.ACC	PTC	lightning(F).NOM
marúto	***jájhjhatīr***	***iva***	
Marut.ACC.PL	giggling.NOM.F	like	

1. "After these ones, the Maruts, indeed (comes) the lightning, somehow laughing". (Pinault 2004, 297)
2. "Following them (came) the lightning flashes – (following) the Maruts like giggling (girls)". (Jamison, Brereton 2014)

In (21), Indra's slaying of Vr̥tra is expressed by the clause *sasántaṁ vájreṇā ábodhayaḥ áhim* 'you awakened the sleeping serpent with the mace'. As suggested by Jamison (2007, 110-12; 2021, *ad loc.*), the fact

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6   In this example, a comparee for a hypothetic simile can be recovered neither from the linguistic context, nor from the formulaic system, but only by constructing, somewhat forcibly, *sádman-* 'seat, abode' and *dhíra-* 'clever' both with the standard and with the comparee, as in the translation by Jamison and Brereton. The only simile that could support this interpretation is the one in i), where *rátham* 'chariot' could be the counterpart of *sádma* 'seat' in R̥V 1.67.10ab: here however, a comparee rendered with 'them' in the translation is recoverable from *bráhma* 'sacred fromulations' in *pāda* a.
i.   R̥V 5.29.15cd
     vástreva bhadrā́ súkr̥tā vasūyū́
     ráthaṁ ná dhī́raḥ suápā atakṣam
     "Like garments, lovely and well made, like a clever artisan a chariot have I fashioned them".
     (adapted from Jamison, Brereton 2014)

that the action in this clause is not to be taken literally is signalled by the presence of *iva* in the main clause, which introduces the heroic deed (*vīryàm*) depicted in *pāda* b; since in this case *iva* follows the preverb *prá*, it has scope over the whole sentence.

(21) ṚV 1.103.7ab

tád	*indra*	***prá***	***iva***	***vīryàm̐***	***cakartha***
3SG.ACC.N	Indra.VOC	LP	like	heroic_deed(N).ACC	do.PF.2SG
yát	*sasántam̐*	*vájreṇā*	*ábodhayó*	*áhim*	
REL.ACC.N	sleep.PTCP.ACC	mace.INST.SG	awake.IMPF.2SG	serpent.ACC	

1."You made quite a virile prowess, o Indra, that you wakened the sleeping serpent with your club". (Pinault 2004, 299)
2. "This heroic deed you carried out, Indra—that/when you "awakened" the sleeping serpent with your mace, as it were". (Jamison, Brereton 2014)

When it occurs after a verb, *iva* sometimes functions as a shield for pragmatic mitigation. In example (22), Indra is praised for his help in winning more territory for the devotees, but he seems to be withholding the wealth they expect. The poet's reproach is, however, mitigated by *iva*, which functions as a speech act hedge.

(22) ṚV 7.37.6ab

vāsáyasi	***iva***	*vedhásas*	*tuvám̐*	*naḥ*
cause_to_wait.2SG	like	adept.ACC.PL	2SG.GEN	1PL.ACC
kadā́	*na*	*indra*	*vácaso*	*bubodhaḥ*
when	1PL.GEN	Indra.VOC	speech.GEN.SG	notice.SUBJ.PF.2SG

"You seem to be causing us, your ritual adepts, to bide our time. When will you take notice of our speech, Indra?" (Jamison, Brereton 2014)[*]

[*] This passage is not translated by Pinault (2004) but listed among cases of approximating *iva* occurring with a noun.

Finally, while with adverbs of manner *iva* signals a figurative reading, with adverbs of quantity it can function as a moderator, much like English *quite* or *rather*.[7] One instance of the latter use is *śánair 'iva* 'quite softly, softly-like' in ṚV 8.91.3cd.

In brief, among all the analysed occurrences, in most cases in which *iva* accepts an approximative reading, its function is to signal

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[7] For Vedic prose, Brereton (1982, 446) describes this function of *iva* after adjectives indicating quantity or size, and the same use is recognised by Pinault for combinations of adjectives with *iva* in the ṚV. However, all cases rendered in this way by Pinault also allow a comparative interpretation which I have chosen not to discuss here.

that the preceding term is imprecise, as it expresses the referent in a figurative way. This function is regularly found after nouns (19), adjectives, and participles (20); with verbs and adverbs, along with indicating a figurative reading, *iva* can function as shield for pragmatic mitigation, as in (22), or as a moderator.

5 Varying Hypotheses on *iva*'s Original Function

5.1 Two Hypotheses from the Literature

Before tracing the grammaticalization process that led *iva* to develop its adaptor function, in this section I review different hypotheses regarding the original function of the particle and reevaluate them based on comparative as well as textual evidence; as we will see, two opposite hypotheses advanced in the literature presuppose different etymologies for *iva*.

The fact that *iva*'s approximative use is already attested in the ṚV led Pinault (1997a, 360-1; 2004) to hypothesise that this was the original function of the particle, which only later developed a comparative function. Pinault suggests that when *iva* had scope on a noun, the difference between approximation and similarity was negligible and the particle could be reinterpreted as marking the standard of comparison. More precisely, the comparative function of *iva* might have developed from indefinite identifications such as (23), as soon as the context provided a term that was understood as the parameter of comparison; cf. examples 23b and 23c.

(23)

a. **śyená*   *iva*   *(asti)*
    eagle.NOM   like   (be.PRS.3SG)
    'He is some kind of eagle/an eagle to some extent'

b. *śyená*   *iva*   *jávasā*
    eagle.NOM   like   swiftness.INST
    "He is some kind of eagle by his swiftness", cf. *śyenásya jávasā* "with an eagle's swiftness" (ṚV 1.118.11a, 5.78.4c), *śyenó javásā* "falcon … with swiftness" (ṚV 4.27.1d)

c. **śyená*   *iva*   *jūtáḥ*
    eagle.NOM   like   impel.PPP.NOM
    "He is provided with swiftness/swift like an eagle", cf. *śyená-jūta-* 'eagle-swift' (ṚV 9.89.2c)

(Pinault 2004, 303)

According to Pinault, the development of formulaic expressions of comparison in the ṚV bleached the distinction between *ná* and *iva*, which became interchangeable in this function; this accounts for the higher frequency of comparative *iva* in the ṚV with respect to the original approximate function.[8]

Turning to etymology, Pinault suggests that *iva*'s first element **(H)i* (related to the anaphoric stem **Hyó-*) expressed anaphora, whereas the second element **-u̯e* marked opposition, as in the pronoun *tva-* 'the one (as opposed to another)'. Accordingly, he proposes the following reconstruction for the phrase *áśva iva* 'like a horse', where the particle **-u̯e* adds indefiniteness to the anaphoric reference:

(24)   a.   **(H₁)ékwo-s Hyó-s* 'which horse'
       b.   **(H₁)ékwo-s Hi-u̯e* 'which horse of some sort, some kind of horse'

<div align="right">(Pinault 2004, 304)</div>

For the development of the particle *iva*, Viti (2002, 70-1) proposes the opposite direction to the one suggested by Pinault, namely from standard marker of similative constructions to approximation marker. First, Viti suggests that the original function of *iva* should be looked for in the ṚV, and not in the later prose texts, in which comparative *ná* has disappeared. Second, she holds that the meaning attested in the *Brāhmaṇas* can easily derive from comparison of equality which, as a proposition of similarity and not of tautology, always entails a certain degree of approximation: therefore, the passage from 'as' to 'so to speak' would semantically be the most plausible.

Viti's hypothesis, which is accepted in this article, is based on the traditional view of *iva*'s etymology (KEWAia and EWAia s.v. *iva*): as mentioned in section 3, this considers *iva* a reflex of the combination of the demonstrative stem **h₁i-* with the PIE disjunctive particle **u̯e* 'or'. The former is attested in Vedic and Sanskrit demonstrative pronouns *ay-am*, *iy-am*, *i-d-am*, as well as in Latin *i-s*, *i-d*, among others. For the latter, compare Sanskrit *vā* 'or', AG *ḗ* 'like' from **ēu̯é*, Latin *-ve* 'or' and *c-eu* 'like'.[9] Watkins (1973, 202-6) considers the Latin standard marker *ceu* a cognate of Vedic *iva*, and reconstructs it as a

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[8]   For two decades, Pinault has studied Ṛgvedic similes providing invaluable insights on the metrical distribution of the two particles *ná* and *iva* (1997a) as well as on the relationship between the comparative and negative use of *ná* (1985; 1997b). On the formulaic nature of Ṛgvedic similes, see especially Pinault 1985, 110-11 on the formula *samudrá- ná/iva* 'like an ocean' and Pinault 1997a, 363-5 on the formula 'like a father to his son'. Other formulaic similes are described in Biagetti 2021, 361-81.

[9]   Since demonstrative pronouns, and especially proximal or person pronouns, make their referents accessible through deixis, Viti (2002, 70-1) considers Mayrhofer's etymology of *iva* as further evidence for the function of individuation that she recognises in the use of *iva* in opposition to *ná*.

combination of the PIE particle *$\acute{k}e$- 'this, here' (Lat -*ce* 'here') and *(h_1)i-μe 'as' (see also de Vaan 2008, 112).

For the sake of completeness, I shall mention Dunkel's more recent proposal on the etymology of *iva* (LIPP, 763, 766, with fnn. 19, 21), according to which *iva* is the reflex of a combination of two comparative particles, namely PIE *h_2i- 'if; as' (?) (346-8) and *(s)ua* 'like, as'.

5.2 Revisited Hypotheses

Of the two etymologies presented above, considering *iva* as combination of the demonstrative stem *h_1i- with the disjunctive particle *μe 'or' finds the greatest support in comparative evidence. Besides being substantiated by the AG and Latin parallels listed above, the development of deictics such as demonstrative pronouns and adjectives into parameter and standard markers is well attested both within and outside the IE domain (König 2017). Vedic deictics have a quite transparent formal make-up, in that the first element expresses the position of the referent with respect to the *origo*, while the second element expresses the relevant ontological dimension: for instance, while *í-yant-* is a degree adjective expressing proximal deixis, *tā́-vant-* is likewise a degree adjective but expresses distal deixis. Thus, while it is clear that *i-va* expresses proximal deixis, the ontological dimension remains underspecified and the original value of the particle *h_1i-μe may be rendered either as 'or this' or as 'or so'.

Turning to *iva*'s second element *μe 'or', the presence of disjunctive particles within standard marker also finds parallels in other languages: besides AG *ḗ* (Chantraine 1963, 152) and Gothic *þau* (Benveniste 1948, 140), Stassen (1985, 62) reports usages of *weder* as standard marker in some Swiss and Middle High German dialects (Small 1923, 36); similarly, in several East Flemish and West Flemish dialects there is a comparative particle *of* which corresponds to disjunctive *of* in Standard Dutch and Standard Flemish (Bergmans 1982, 78).

In turn, the etymology of *iva* as a reflex of PIE *h_1i-μe 'or this'/'or so' opens up two possible paths in its development while excluding a third one:

1. the comparative function and the approximative one emerged independently from one another, respectively from the anaphoric/cataphoric and recognitional function of the deictic;
2. the approximative function, and more precisely the adaptor function, developed from the standard marker of similative constructions (regardless of the origin of the latter).

The first hypothesis is suggested by recent studies in the domain of deixis. Mihatsch (2010a, and especially 2010b) has shown that deictics are a common source for adaptors. König (2017) has demonstrat-

ed that the comparative and the approximative functions can emerge from the endophoric employment of deictics, independently from one another and following different grammaticalization paths: the comparative function develops from the anaphoric function of deictics, whereas the approximative function emerges from their recognitional function **[fig. 2]**.
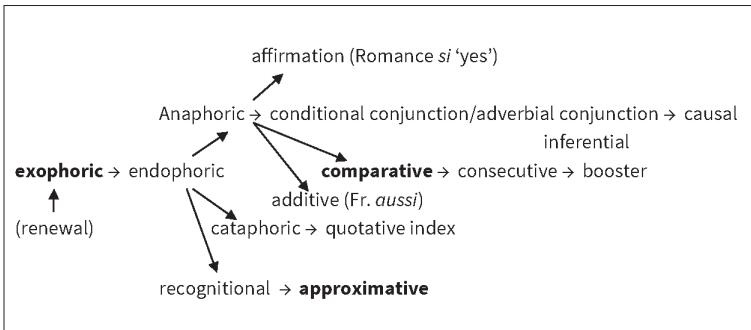
Paths of grammaticalization taking demonstratives of manner and degree as source (König 2017)

The second hypothesis comes from the cross-linguistic observation that standard markers are a common source of adaptors (see section 2).

To date, the opposite direction of change, namely from approximation marker to standard marker, has apparently not been attested. Thus, unless we accept that Vedic constitutes an exception to the unidirectionality of Mihatsch's semantic map of approximation (2010a, fig. 1), Pinault's hypothesis on the development of *iva* (section 5.1) cannot be considered further. Let us now examine hypotheses 1) and 2).

According to König's (2017) semantic map of deixis **[fig. 2]**, *iva*'s approximative functions might have developed from the recognitional function of the deictic. The term 'recognitional', first introduced by Himmelmann (1997, 61), is used for such cases in which a deictic marks a referent that is newly introduced in the discourse but constitutes known information for speaker and addressee. This function is typical of the German all-purpose manner deictic *so* in prenominal position, where it is often fused with an indefinite article (*son/sone*). In example (25a), *so* is employed by the speaker to remind the hearer of a referent (the *Biergarten*). The semantic dimension expressed by *so* in cases like this is that of quality and the hearer has to find the exact type of referent in his memory. If the addressee is asked to find a suitable referent based on general knowledge rather than from his memory, as in (25b), the deictic takes an approximative function (König 2017).

(25) a. *Wir haben doch damals **so(eine)n** Biergarten besucht.*
'You remember this biergarten we went to on that day?'
b. *Ich möchte **son** Kleber.*
'I would like this kind of glue'.

The particle *iva* never takes a recognitional function in the ṚV nor in younger texts, and thus the emergence of *iva*'s approximative functions from the recognitional function cannot be accepted, at least based on textual evidence.

Another possibility for the independent development of approximative *iva* is that the particle originally functioned as a general extender. General extenders (GE)[10] are a group of expressions characterised by a syntactic structure ['and/or' + non-specific NP] which occur at the end of a list, or after a single phrase, to indicate the existence of additional referents (Overstreet 1999, 3); Mauri and Sansò (2018a; 2018b) list them among syntactic strategies that convey *ad hoc* categorisation. As we have seen in section 2, GEs are a common source of approximators and rounders (cf. examples 7 and 8). Both the formal and, particularly, the semantic make-up of the particle *iva* resembles that of disjunctive GEs like German *oder so*, or Spanish *o algo así*, which also contain a disjunctive marker in correspondence with *-va* < *$\textit{*u̯e}$ 'or' found in *iva*.[11]

In one passage from the ṚV, *iva* seems to occur in a generalising GE (Benigni 2018, 113), that is a GE followed by an indefinite generic noun, which is a hyperonym of the elements contained in the list. The list incorporating the three items *kṣatrá-* 'power', *śrávas-* 'glory', and *iṣṭí-* 'conquest' in (26) is indeed followed by the hyperonym *ártha-* 'or any (other kind of) goal'.[12]

(26) ṚV 1.113.6

kṣatrā́ya	tvaṁ	śrávase	tvám	mahīyā́	
power.DAT	INDF	glory.DAT	INDF	great.DAT	
iṣṭáye	tvám	**ártham**	**iva**	tvám	ityaí
conquest.DAT	INDF	goal.ACC	like	INDF	go.DAT

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10   There is great terminological variation in the definition of these forms, which are also called *set marking tags* (Dines 1980), *generalised list completers* (Jefferson 1990), *extension particles* (Dubois 1992), *vague category identifiers* (Channell 1994), and *extender tags* (Carroll 2008).

11   GE often undergo grammaticalization processes which involve phonetic reduction, univerbation (cf. Italian *eccetera* < Latin *et cetera*, Dutch *enzovoorts* < *en* + *zo* + *voorts*), decategorization, and semantic bleaching, all processes that may explain *iva*'s reduced form (Mauri, Sansò 2018a; 2018b; Benigni 2018; Kim 2020).

12   In this example, the list is constructed based on the repetition of the indefinite pronoun *tva-* 'one', which contributes to the indefinite reading of the passage.

vísadr̥śā	*jīvitā́*	*abhipracákṣa*	
different.ACC.PL	life.ACC.PL	look.DAT	
uṣā́	*ajīgar*	*bhúvanāni*	*víśvā*
Dawn.NOM	wake.AOR.3SG	creature.ACC.PL	all.ACC.PL

"Dawn woke all the creatures up, urging this one to power, this one to glory, this one to a great conquest, this one **to go to any (other) kind of goal**, in order to look for the various ways of living". (Pinault 2004, 292)

Example (26) is, however, the only clear instance of *iva* occurring at the end of a list;[13] in all other cases listed by Pinault (2004), *iva* occurs after a single phrase, but it never conveys *ad hoc* categorisation. Thus, despite being supported by comparative evidence, the emergence of *iva*'s approximative function from its original deictic function (hypothesis 1) is not confirmed by textual evidence. Although the etymology alone might be enough to evidence this development, accepting this hypothesis is problematic because in other languages, the adaptor use tends to coexist with the recognitional function of the manner deictic or with its use in GE (cf. examples from section 2; cf. also Mihatsch 2010b, 272-6).

Since the hypothesis of the independent emergence of *iva*'s approximative function from the deictic one is not supported by textual evidence, we are left with hypothesis 2), according to which the approximative use developed out of *iva*'s employment in similative constructions. Section 6 traces the different steps in this development.

6 From Standard Marker to Adaptor

In this section, I test whether there is evidence in the R̥V that the adaptor function developed from the one of standard marker.

An important indicator supporting this direction of change is provided by the very function of *iva* of reporting figurative speech as presented in section 4.2. We have seen with Mihatsch (2010a, 111) that this function usually develops from the semantic approximative use with metaphors; indeed, just like lexical approximation, metaphors are based on similarity, although across two conceptual domains. In section 4.2, we have seen that in most cases in which *iva* accepts an approximative interpretation in the R̥V, the function of the particle is to signal figurative speech; in contrast, other functions associated with adaptors are only marginally attested. Now, taking into account the fact that adaptors often derive from standard markers of

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13 The only other possible candidate is R̥V 8.3.16ab, but here the interpretation of *iva* as a GE is complicated by syntactic and semantics issues (for a detailed discussion, see Biagetti 2021, 298).

similative constructions,[14] and also considering that Ṛgvedic similative constructions are specialised for figurative comparison (section 3), the passage from standard marker of similes to markers of figurative speech seems the most plausible development for *iva*. From there, it is just a small step to move on to a marker signalling the inappropriateness of a term, not only due to semantic deviations, but also due to the need for pragmatic mitigation; only after these steps had occurred did the particle develop into a rounder, a function that is only attested a couple of times in the ṚV.

The proposition above accounts for the semantics of the source construction that gave rise to the implicatures underlying the functional change; now we need to trace the different steps leading to the new function. Ambiguous utterances play a crucial role in the analysis of such processes: drawing from Evans and Wilkins (1998, 5), Heine (2002, 85 f.) calls such ambiguous contexts "bridging contexts". Bridging contexts trigger an inferential mechanism that leads to replacing the source meaning with another meaning, the target meaning, that offers a more plausible interpretation of a given utterance; in these contexts, the target meaning is the one which is most likely to be inferred, but an interpretation in terms of the source meaning cannot be entirely ruled out.

Since Ṛgvedic similative constructions are always syntagmatic, the development must have started from combinations of nouns with *iva*, and then have spread to other parts of speech; if combinations of *iva* with verbs and adverbs did indeed develop after those with nouns and (substantivised) adjectives, this progression would also explain why the former display a comparatively more varied range of functions, despite being less frequent.

In similatives, *iva* situates a trajector, the comparee, in relation to a landmark, the standard. The change occurring in the emergence of the approximative function consists in the loss of *iva*'s relational function: the comparee disappears, the standard introduced by *iva* remains, and *iva* becomes a modifier of the latter. At this point, since it no longer makes sense to refer to a standard since there is no comparee, we should speak instead of an NP modified by an adaptor.

As we have seen above, a bridging context should allow both interpretations – the relational as well as the modifying function. As argued by Heine (2002, 85), often more than one possible bridging context can be detected. This is also true in the case of *iva*, for which at least four possible bridges exist:

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14 Since similative comparison expresses qualitative similarity of processes and entities and, unlike equative comparison of quantity, is always approximative, the function of *iva* as a marker of similative comparison must be the source of the new adaptor function (cf. Mihatsch 2009, 70-1 on Romance adaptors).

1. similive constructions whose comparee is a referential null argument;
2. mismatches in argument structure of comparee and standard;
3. predicative similative constructions with or without copula;
4. similative constructions whose standard is a substantivised adjective or participle.

6.1 Bridging Context 1: Similative Constructions Whose Comparee Is a Referential Null Argument

In section 4.1, we have seen that while Geldner (1951) and Jamison and Brereton (2014) tend to supply overt comparees in what they consider to be similes, Pinault refrains from such additions and interprets *iva* as an adaptor in all cases in which a comparee is not overtly expressed. In fact, many such cases can be interpreted as bridging contexts of the first type: these are similative constructions whose comparee is a referential null argument, which may lead to a reinterpretation of the standard as the actual argument of the verb and of *iva* as its modifier.

Vedic is a pro-drop language which allows both null subjects and null objects. While null subjects are at least partially recoverable through verbal morphology, definite referential direct objects can be omitted even if they are not indexed on the verb. The distribution of definite referential null objects in Vedic is described in Keydana (2009) and, with a comparison to the situation found in AG, in Keydana and Luraghi (2014).

In Vedic, null objects occur frequently in coordination. Furthermore, they occur with participles or infinitives embedded into finite sentences, due to argument sharing: take for instance the participle *iyakṣáve* 'for the one who seeks' in (27), whose null object (Ø) is coreferent with the subject of the main clause *tvám* 'you'.

(27) ṚV 10.4.1cd

dhánvann	***iva***	***pra-pā́***		*asi*	***tvám***$_i$	*agna*
desert(N).LOC	like	first-drink(F).NOM		be.2SG	2SG.NOM	Agni.VOC
iyakṣáve		*pūráve*	*Ø*$_i$	*pratna*	*rājan*	
seeking_to_gain.DAT		Pūru.NOM		first.VOC	king.VOC	

'You are like the first drink in a wasteland, o Agni, for Pūru who seeks to attain (you), you age-old-king'.

A further type of referential null objects has no special syntactic constraints and is determined by discourse conditions. In the ṚV, such null objects can be used anaphorically, as in (28), cataphorically, as

in (29), or even refer to participants of the speech act.[15] Referents of null arguments are most often subjects (cf. *tvám* in 27) or objects (cf. *támo* in 29), but can also be other types of arguments and adjuncts (cf. the infinitival dative antecedent *sómapītaye* in 28).

(28) ṚV 1.23.7

marútvantaṁ	*havāmahe*		
with_Maruts.ACC.SG	call.1PL.MID		
índram	*ā́*	***sómapītaye*ᵢ**	
Indra.ACC	here	soma-drinking.DAT	
sajū́r	*gaṇéna*	**Ø**ᵢ	*tṛmpatu*
together	band.INST.SG		enjoy.IMPV.3SG

"Indra with the Maruts we call hither for soma drinking. Together with (his) band he shall enjoy [the drinking]".

(Keydana, Luraghi 2014, 126)

(29) ṚV 6.64.3cd

ápa	*jate*	**Ø**ᵢ	*śū́ro*	*ástā*	*iva*	*śátrūn*
LP	drive.3SG		champion.NOM	archer.NOM.SG	like	enemy.ACC.PL
bā́dhate	***támo*ᵢ**	*ajiró*	*ná*	*vólhā*		
repel.3SG.MID	darkness(N).ACC	agile.NOM	like	driver.NOM		

"She drives away [the darkness] like a champion archer the enemies. She besieges the darkness like a deft driver".

(adapted from Keydana, Luraghi 2014, 126)

In order to understand how null objects may have played a role in the reanalysis of *iva* as a modifier of the NP_STAND, let us consider example (30). Considering *pāda*s d and e in isolation, we are forced to interpret *vrajáṁ gávām* 'pen of cattle' as the object of the participle *síṣāsann* 'wishing to win' and *iva* as a modifier of the object noun phrase: 'wishing to win the pen of cattle, so to speak'. However, taking the whole sentence into consideration (*pāda*s d to g), we find that the null object of *síṣāsann* can refer to the object of *ápāvṛṇod*, *íṣaḥ* 'nourishments', due to argument sharing; since the participle now has a direct object, *vrajáṁ gávām* must be interpreted as the standard of a simile and *iva* as the standard marker.

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15 Due to peculiarities of the textual genre of Ṛgvedic hymns, it is hard to establish which discourse-related conditions determine discourse null-anaphors (see Keydana 2009, 134-5; Dahl 2010); the only thing we can say with certainty is that discourse-conditioned null objects always denote referents which belong to the common ground.

(30) ṚV 1.130.3d-g

vrajáṁ	*vajrī́*	***gávām***	***iva***
pen.ACC	mace_possessor.NOM	COW(F).GEN.PL	like

síṣāsann	***Ø***ᵢ	*áṅgiras-tamaḥ*		
gain.DES.PTCP.PRS.NOM.SG.M		Aṅgiras-SDG.NOM.SG.M		

ápa	*avṛṇod*	***íṣa***ᵢ		*índraḥ*	*párīvṛtā*
LP	(un)cover.IMPF.3SG	nourishment(F).ACC.PL		Indra.NOM	enclosed.ACC.PL.F

dvā́ra	*íṣaḥ*	*párīvṛtāḥ*
door(F).ACC.PL	nourishment(F).ACC.PL	enclosed.ACC.PL.F

1. <u>Source meaning</u>: "[He found the depository of heaven, deposited in hiding, enveloped in the stone like the embryo of a bird (in an egg) – within the boundless stone.] The possessor of the mace, the best Aṅgiras, **seeking to win (them) like a pen of cattle** – Indra uncovered the nourishments that were enclosed – (opened) the doors to the nourishments that were enclosed". (Jamison, Brereton 2014)

2. <u>Target meaning</u>: "The possessor of the mace, the best Aṅgiras, **seeking to win a pen of cattle, as it were** – Indra uncovered the nourishments that were enclosed".[*]

[*] This passage is not translated by Pinault (2004) but listed among cases of approximating *iva* occurring with a noun.

Both analyses are possible from a syntactic and semantic point of view, provided that if the target meaning is chosen, *iva* is interpreted as signalling the figurative meaning of the utterance. The verse narrates the myth of Indra's liberation of the cows hidden in a cave known as Vala: thus, if we analyse the 'pen of cattle' in *pāda* d as the object of the participle, we will have to understand it as standing metaphorically – and somewhat ironically – for the Vala cave.[16] Since the syntactic and semantic context of the verse allows two interpretations – the relational and the modifying function of *iva* – we can consider it to be a bridging context for the emergence of the approximative function from the comparative one.[17]

More often, the comparee represents a null argument which anaphorically or cataphorically refers to other mentioned constituents (discourse-related null argument). One example of anaphoric use is provided in (31); other examples are ṚV 1.127.4de, ṚV 4.5.8c, ṚV 9.112.3, among many others. If we consider *pāda* c of example (31) in isolation, we can only interpret *gopā́* 'herdsman' and *yūthā́ paśváḥ*

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[16] Note that *íṣ-* (*íṣaḥ* 'nourishments') also means 'milk, milk drink', and must stand metonymically for the cows providing milk.

[17] In this case, two factors make the target meaning the one which is more likely to be inferred: a) the missing correspondence in number between the singular standard *vrajáṁ gávām* and the plural comparee *íṣaḥ*, and b) the striking logical correspondence between the Vala cave enclosing the cows and a cattle-pen: indeed only interpreting *vrajáṁ gávām* as the object of *síṣāsann* makes Vala and the cattle-pen co-referent, whereas the source meaning would require the cattle-pen to be compared to the nourishments.

'flocks of livestock' as the subject and object of *ví unoti* 'urges'; consequently, *iva* should be interpreted as a modifier of *yūthā́*: 'the herdsman has urged some kind of flocks of livestock'. Taking the whole verse into consideration, it becomes clear that the verb *ví unoti* lacks both subject and object and that their antecedents are *índraḥ* 'Indra' and *ráthāya* 'for (his) chariot' in *pāda* a, respectively. Instead, *gopā́* 'herdsman' and *yūthā́ paśváḥ* 'flocks of livestock' constitute the standard of the simile introduced by the standard marker *iva*.

(31) ṚV 5.31.1ac

índro_i	**ráthāya**_j	*pravátaṁ*	*kṛṇoti …*			
Indra.NOM	chariot.DAT	slope.ACC	make.3SG			
yūthā́	**iva**	**paśvó**	**Ø**_i**Ø**_j	*ví*	*unoti*	*gopā́*
flock.ACC.PL	like	cattle.GEN	LP	urge.PRS.3SG		herdsman.NOM
áriṣṭo	*yāti*	*prathamáḥ síṣāsan*				
invulnerable.NOM	drive.3SG	first.NOM	win.DES.PTCP.NOM			

1. <u>Source meaning</u>: "Indra makes an easy slope for his chariot […]. **Like a herdsman the flocks of livestock**, he (Indra, *índro* in *pāda* a) urges (his chariot, *rátha-* in *pāda* a).[*] Invulnerable, he drives as the first to seek winnings". (Adapted from Jamison, Brereton 2014)

2. <u>Target meaning</u>: (*pāda* c) "The herdsman urges the flocks of livestock, as it were".[**]

[*] The translation of *pāda* c is by the Author. Jamison, Brereton 2014 have: "Like a herdsman separating the flocks of livestock, he keeps (his chariot) separate (from the others)".

[**] This passage is not translated by Pinault (2004) but listed among cases of approximating *iva* occurring with a noun.

Again, while both interpretations are syntactically possible, the latter makes only sense if we interpret *iva* as signalling the figurative meaning of the utterance: in this case, the metaphor maps the herdsman onto Indra and the flocks onto the chariot.[18]

In example (32), the target meaning is foregrounded because the only available antecedent for the subject of *aśata*.3PL '(they) have reached', *krátum*.SG 'resolve', does not agree in number with the verb: this triggers a reinterpretation of *hradáṁ* 'lake' and *kulyā́* 'brooks/rivers' respectively as goal and subject of the verb and of *iva* as flagging their figurative meaning:

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18 Considering the wide use of metaphors in the ṚV, neither the interpretation of *pāda* c as a simile nor as a metaphor can be excluded; however, two factors weigh in favour the former interpretation. These are a) the presence of possible antecedents for the null arguments in the preceding *pādas,* and b) the kind of mapping triggered by the metaphorical reading: although metaphors are ubiquitous in the ṚV, the mapping described above is acceptable for a simile, as it represents an image mapping for the act of 'urging'/'impelling' a chariot or a flock, but less acceptable for a metaphor, as the gods are usually represented as herdsmen for their protective function towards men, not in relation to their chariot.

(32) ṚV 3.45.3

gambhīrā́m̐	*udadhī́m̐r*	*iva*		
deep.ACC.PL	pool.ACC.PL	like		
krátum	*puṣyasi*	*gā́*	*iva*	
resolve.ACC.**SG**	foster.2SG	COW.ACC.PL	like	
prá	*sugopā́*	*yávasaṁ*	*dhenávo*	*yathā*
LP	with_good_herdsman.NOM.PL	pasturage.(N).ACC	COW.NOM.PL	like
hradáṁ	***kulyā́***	***iva***	*aśata*	
lake.ACC	brook.NOM.PL	like	reach.AOR.3**PL**.MID	

1. <u>Source meaning</u>: "Your resolve, deep like pools—you foster it, like milk-cows. As milk-cows with a good herdsman reach pasturage, **as brooks reach a lake**, (so your resolves) have reached fulfillment". (Jamison, Brereton 2014)
2. <u>Target meaning</u>: (*pāda*s cd) "As milk-cows provided with a good herdsman (reach) the pasture, **some kind of streams have reached the sea**". (Pinault 2004, 291)

Example (33) is an instance of the cataphoric use of null objects within similes. This time, the passage is complicated by several syntactic and semantic difficulties,[19] but the ambiguity regarding the use of *iva* should be clear. As in the examples seen above, *yūthā́ iva* may either be analysed as the object of the main verb *ā́ akhyad* '(he) has watched over', or as the standard of a simile; in the latter case, the verb must be interpreted as having a null object which cataphorically refers to the genitive *devā́nāṁ* 'of the gods' in the following *pāda*.[20]

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19 Two points are relevant here: starting from the main verb, Geldner takes *ā́ √khyā-* as meaning 'count', but Renau points out that this sense is not found earlier than the ŚB. Jamison (2021, *ad loc.*) points to the parallel passage *sáṁ yó yūthéva jánimāni cáṣṭe* 'who surveys the tribes (of men), like herds' (ṚV 7.60.3), where the verb *sám √cakṣ-* 'look over, observe' strongly suggests an interpretation as 'watch over' also for the verb in (33). That passage also suggests taking *jánima* in b as the object of *ā́ akhyat* and as counterpart of the standard *yūthā́*. See Oldenberg (1907), and Jamison (2021, *ad loc.*) for a detailed discussion.

20 As shown by Keydana (2009) and Keydana and Luraghi (2014), null objects do not necessarily refer to subjects or objects but can also refer to other constituents. Taking the genitive *devā́nāṁ* 'of the gods' as referent of the null object allows preserving the parallelism between the plural standard (*yūthā́* 'flocks') and the plural comparee. However, the whole phrase *devā́nāṁ jánima* 'the generation of the gods' or even *devā́nāṁ yáj jánima ánti* 'the generation of the gods that was nearby' could be taken as antecedent. Note that in verses 3 and 4 the poet asked Agni to bring only a selection of gods to the sacrifice and the 'generation of the gods that was nearby' could refer to the gods that come to the sacrifice.

(33) ṚV 4.2.18ab

*ắ   yūthắ   iva   kṣumáti   paśvó   Ø*ᵢ *akhyad*
LP herd(N).ACC.PL   like   cattle_rich.LOC   livestock.GEN   watch.AOR.3SG

devắnāmᵢ *yáj   jánima   ánti   ugra*
god.GEN.PL REL.NOM.N race(N).ACC   nearby strong.VOC

1. <u>Source meaning</u>: "He [=Agni?] watched over them **like (a herdsman) the herds of livestock in a cattle-rich (pasture)** – watched over the race of gods that was nearby, o strong one". (Jamison, Brereton 2014)

2. <u>Target meaning</u>: "He **has considered somehow herds of cattle** at home of a man rich in cattle, when the generations of gods were near (him), o mighty one". (Pinault 2004, 291)

Now that we have found possible bridging contexts that may have favored the development of *iva*'s approximating function from the comparative one, we should see whether the ṚV contains instances of the so-called switch contexts. Switch contexts are incompatible with some salient property of the source meaning, so that the target meaning provides the only possible interpretation; however, unlike conventional meanings, meanings appearing in switch contexts are confined to such contexts (Heine 2002).

One instance of a possible switch context is provided by example (19), repeated here as (34). As we have seen in section 4.2, if we want to interpret *dhī́rāḥ* 'clever (artisans)' and *sádma* 'seat' as making up the standard of a simile, we notice that neither the linguistic context nor the formulaic system provides a suitable antecedent for the null subject and object of the verb *cakrúḥ* 'they fashioned'; thus, we would have to forcibly construct *dhī́rāḥ* and *sádma* both as the standard and as the comparee, as in the translation by Jamison and Brereton. The lack of available antecedents for the null arguments makes this passage incompatible with the source meaning (i.e. *iva* situating the comparee in relation to the standard), so that the approximative meaning rendered by Pinault's translation provides the only probable interpretation.

(34) ṚV 1.67.10b

cíttir   apā́m   dame   viśvā́yuḥ
bright.NOM water.GEN.PL house.LOC whole_life.NOM

sádma   iva   dhī́rāḥ   *sammā́ya   cakrúḥ*
seat.ACC   like   clever.NOM.PL   measure.ABS   make.PF.3PL

1. *<u>Source meaning</u>: "(He is) the bright apparition in the house of the waters through his whole lifetime. Like clever men an abode, the wise have made a seat (for him), having measured it out completely". (Jamison, Brereton 2014)

2. <u>Target meaning</u>: (*pāda* b) "The clever ones made (for him, Agni) **some kind of seat** by building together". (Pinault 2004, 291)

6.2 Bridging Context 2: Mismatches in Argument Structure of Comparee and Standard

A second bridging context can be recognised in similes that present mismatches in the argument structure of standard and comparee. *Pāda* c in (35) is a case in point: we can either interpret *vā́jam iva* as the standard and standard marker of a simile 'as if to a prize' or as the goal of the verb *asarat* 'has flowed'. The former option entails constructing the verb √*sṛ*- 'to flow' absolutely in the comparee and with a goal argument in the standard; mismatches in argument structure constructions are well attested in Ṛgvedic similes introduced not only by *iva*, but also by *ná* and *yáthā*/*yathā* (as comprehensively demonstrated by Jamison 1982), which makes the comparative meaning of *iva* in this example syntactically and semantically possible.[21] On the other hand, the latter option entails interpreting *vā́jam* metaphorically as the goal of Soma; this is also a possible reading, for in book IX the mixing of the soma juice with water and then with milk is often presented metaphorically as a racing horse or a chariot running towards a prize.

(35) ṚV 9.37.5

sá	*vṛtra-hā́*		*vṛṣā*	*sutó*
3SG.NOM	Vṛtra-smasher.NOM		bull.NOM.SG	press.PPP.NOM
varivo-víd		*ádābhiyaḥ*		
wide_space-finder.NOM		undecivable.NOM		
sómo	***vā́jam***		***iva***	*asarat*
Soma.NOM	prize.ACC		like	flow.AOR.3SG

1. <u>Source meaning</u>: "He, the Vṛtra-smasher, the bull, finding the wide realm when pressed, undeceivable – Soma has flowed **as if to a prize**". (Jamison, Brereton 2014)
2. <u>Target meaning</u>: (*pāda* c) "The soma has run **towards some kind of prize**". (Pinault 2004)

As in the preceding example, in (36) we can analyse *padā́* 'by foot' as the only element constituting the standard of a simile introduced by *iva*, as in standard translations; alternatively, we can interpret it as an adjunct of the verb *ā́ gáchasi* 'you come here', in which case *iva*

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21   Note that the full simile is found in ṚV 9.62.16; according to Pinault, this is due to the formulaic system and does not necessarily mean that the one in ṚV 9.37.5 is also a simile.

ii.   *pávamānaḥ sutó nṛ́bhiḥ*
      *sómo **vā́jam iva** sarat*
      amū́ṣu śákmanā sádam
      'Purifying himself, pressed by men, Soma has flowed, as if to a prize (*vā́jam iva*), to sit in the cups, through his mastery'.

functions as an adaptor: 'come here along the slope of your intentions by foot, as it were'. Jamison (2021, *ad loc*.) suggests that 'along the slope of your intentions' (*pravátā … krátūnām*) means that the journey to the sacrifice is an easy one for Indra because it is in accord with his intentions; if this is true, *padā́ iva* could suggest that the journey is so easy that it can be undertaken on foot. Although both readings of *iva* are syntactically and semantically possible, the whole sentence is metaphoric (cf. 'along the slope of your intentions'), so reading *iva* as a marker of figurative speech offers a more plausible interpretation of the whole passage.[22]

(36) ṚV 4.31.5ab

pravátā	*hí*	*krátūnaam*		
slope(F).INST	PTC	intention.GEN.PL		
ā́	*hā*	***padā́***	***iva***	*gáchasi*
LP	PTC	foot(N).INST	like	come.PRS.2SG
ábhakṣi	*sū́riye*	*sácā*		
receive.AOR.1SG.MID	sun.LOC	with		

1. <u>Source meaning</u>: "For [through the days][*] you (Indra) come here along the slope of your intentions, **as if by foot**. I have taken my share in company with the sun(rise)". (Jamison, Brereton 2014) / "Denn du kommst nach dem Zug deiner Gedanken **als wäre er dein Fuß**. Ich habe meinen Anteil an der aufgehenden Sonne bekommen". (Geldner 1951)

2. <u>Target meaning</u>: For [through the days] you (Indra) come here along the slope of your intentions **by foot, as it were**. I have taken my share in company with the sun(rise)".[**]

[*] In *pāda* b, Jamison (2021, *ad loc*.) reads *ā́hā* instead of *ā́ hā*, and analyses this sequence as *ā́* 'here' + *áhā*(N). ACC.PL 'days'. The reason for doing so is that this is one of only two supposed examples of the particle *ha* with long vowel (the other one, ṚV 5.41.7 also follows *ā́* and can be analysed in the same way). Jamison argues that the *ā̄*-final version of *ha* is *ghā* and that, while *ha* occurs only once elsewhere after the preverb *ā́* (ṚV 8.9.18 *ā́ hāyám*), *ghā* is found commonly after *ā́* (cf. ṚV 1.30.8, 1.48.5, etc.). Note that, accepting van Nooten and Holland's (1994) reading of the passage as reported in example (36), 'through the days' should be removed from the translation.

[**] This passage is not translated by Pinault but listed among cases of approximating *iva* occurring with a noun.

[22] Jamison (2021, *ad loc*.) also offers an alternative interpretation: after a verse in which the poet calls on Indra to come here (verse 4), the reference to going 'by foot' in verse 5 might suggest that Indra is tarrying on his journey and thus constitutes the poet's mild reproach to the god. If this verse is meant to reproach the god for his delay, interpretating *iva* as an adaptor would be the preferred choice: indeed, as we have seen in example (22), *iva* can take the function of a shield for pragmatic mitigation and be employed to mitigate a reproach.

6.3 Bridging Context 3: Predicative Similative Constructions with or Without Copula

A third bridging context can be recognised in copula constructions of the type NP$_{CPREE}$ *is like* NP$_{STAND}$ that are ambiguous between the two readings. A case in point is the *pāda* in (37), which can be interpreted either as a predicative similative construction of the type CPREE *is like* STAND, or as the approximation of a predicational copula construction (Brook-Rose 1958; Sullivan 2013).[23] In either case, the passage has a figurative meaning in that the 'place' or 'abode of the dawns' probably refers to a place rich in cattle. Dawn's radiant beams are indeed described as herds of cattle (cf. ṚV 4.52.2-4) and the goddess Dawn is called the mother of kine (cf. ṚV 4.52.2, 7.77.2). Furthermore, the following *pādas* refer to possessors of livestock (*kṣumántaḥ*) assembled for the praise of the singer and to a prize (*vā́jāḥ*) that should approach the poet as a reward for his song: note that prizes often consist of cattle in the ṚV. Thus, if *iva* is read as a standard marker, the passage instantiates a broad-scope simile, i.e. a simile that does not specify the attribute or dimension relevant for mapping (Moder 2008); if, instead, *iva* is analysed as an adaptor, the *pāda* instantiates a predicational metaphor and *iva* has the function of signalling figurative speech. Note that the difference between broad-scope similes and predicational metaphors is very subtle and that there is much disagreement in the literature as to its nature (see Moder 2008 and Dancygier, Sweetser 2015, 137-48 for a summary of the debate).

(37) ṚV 10.31.5a

iyáṁ	*sā́*	*bhūyā*	**uṣásām**	**iva**	**kṣā́**
DEM.NOM.F	3SG.NOM.F	earth(F).NOM	dawn(F).GEN.PL	like	abode(F).NOM

1. Source meaning: "Might this earth here be **like (the place) of the dawns**. [When the possessors (*kṣumántaḥ*) of livestock (*vā́jāḥ*) have assembled here with their strength, desiring to partake of the praise of this singer, let the powerful prizes approach us]". (Jamison, Brereton 2014)
2. Target meaning: "Might this here be **the abode of the dawns, as it were**". (Author's translation)*

* This passage is not translated by Pinault (2004), but listed among examples of *iva* occurring within copula constructions.

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23 The term "predicational" in Predicational copula construction is not the same as "predicative" that we employ for similes of the type CPREE *is like* STAND. Predicational copula constructions are a particular kind of copula constructions that predicate a property of the subject, as in *Linda is an excellent teacher*; they differ from Specificational copula constructions, which specify role-value mappings (e.g. *The department chair is Linda*), and from Identificational copula constructions, which express identity between two entities (e.g. *The woman on the balcony is Linda*; Sullivan 2013, 104-10; Dancygier, Sweetser 2014, 136-7).

Recall that Pinault (2004, 303) sees predicational copula constructions like the one above as the starting point for the emergence of the comparative function of *iva* from the approximative one. In his view, this development took place as soon as the context provided a term that was understood as the parameter for comparison: cf. the reconstructed path **śyená iva (asti)* 'he is some kind of eagle' > *śyená iva jávasā* 'he is some kind of eagle by his swiftness' > *śyená iva jūtáḥ 'he is swift like an eagle' (section 5.1). The fact that the approximative value is not shared by any example of the competing particle *ná* is taken by Pinault as evidence for the hypothesis that *iva*'s approximative function preceded the comparative one.

It must be noted, however, that *ná* does occur in all bridging contexts detected for *iva*, except for predicational copula constructions (see section 6.6). Since predicative similatives lack an explicit parameter of comparison, the absence of *ná* from such constructions may result from its origin in the negative parallelism, in which the parameter is explicitly mentioned (see Pinault 1985).[24] Note furthermore that predicational copula constructions marked by *iva* are also quite rare, amounting to only around 20 occurrences.[25]

Similes can take substantivised adjectives as standards; when these occur in predicational copula constructions, an interpretation of the adjective as a quality of the subject is preferred over a comparison between a standard and a comparee. At this point, *iva* likely loses its relational function and becomes a modifier of the adjectival predicate. In example (38), the adjective *anāśastā́* 'hopeless' may be interpreted as a substantivised adjective functioning as a standard (cf. Geldner's *wie Hoffnungslose* 'like hopeless people') or as an attribute of the poets. In the latter case, *iva* may be seen as marking the contrast between the adjective and the verb *śaṁsaya* 'give hope', both construed on the root √*śaṁs-* 'wish, hope'; for this function of adaptors, see example (16) in section 4.1. A very similar pattern is found in ṚV 2.41.16b-d, where *apraśastá iva* 'unlauded' is contrasted with the verbal phrase *práśastim ... nas kṛdhi* 'make a laud for us'.

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24   One instance of *ná* in a predicational copula construction may be recognised in ṚV 5.10.5.

25   With the verb √*as-* 'be', we find: ṚV 1.29.1ab, 1.164.37ab, 2.41.16cd, 6.58.1ab, 8.20.20a (??), 10.4.1cd, and 10.94.10c. With the verb √*bhū* 'be, become': ṚV 1.175.6a-c (= 1.176.6), 8.1.13ab, 10.31.5ab, 10.33.3d. Furthermore, Pinault (2004) reports the following cases without copula, although some allow interpretations different from the predicative one: ṚV 1.59.4a (?), 1.122.1c, 1.124.7 (?), 1.128.1de.

(38) ṚV 1.29.1ab

yác	*cid*	*dhí*		*satya*	*somapā*
when	PTC	PTC		true.VOC	soma-drinker.VOC
anāśastā́	***iva***	*smási*			
hopeless.NOM.PL	like	be.PRS.1PL			
ā́	*tū́*	*na*		*indra*	*śaṁsaya*
LP	PTC	1PL.DAT		Indra.VOC	wish.CAUS.IMPV.2SG
góṣu	*áśveṣu*	*śubhríṣu*			
cow(f).LOC.PL	horse.LOC.PL	resplendent.LOC.PL			
sahásreṣu	*tuvī-magha*				
thousand.LOC.PL.N	powerfully-generous.VOC				

1. Source meaning: "Wenn wir auch **wie Hoffnungslose** sind, du bewährter Somatrinker, so mach uns doch Hoffnung auf tausend schmucke Kühe und Rosse, o freigebiger Indra!" (Geldner 1951)

2. Target meaning: "Even when we are **devoid of hope, as it were**, o you true drinker of soma, give us hope for resplendent cows and horses in the thousands, o powerfully generous Indra". (Jamison, Brereton 2014)[*]

[*] This passage is not translated by Pinault (2004), but listed among examples of *iva* occurring within copula constructions.

6.4 Bridging Context 4: Similative Constructions Whose Standard is a Substantivised Adjective or Participle

Related to the bridging context presented above, a fourth kind of bridge represented by similes whose standard is a substantivised adjective or participle can be found. In example (39), the adjective *vāśrā́* 'bawling' can be interpreted either as the standard of comparison ('like a bawling one', i.e. like a cow), or as a secondary predicate modifying the comparee, in which case *iva* marks the figurative reading of the adjective as referring to the lighting (another case of synesthesia, like *jájhjhatīr* 'laughing' in example (20).

(39) ṚV 1.38.8a

vāśrā́	***iva***	*vidyún*	*mimāti*
bawling.NOM	like	lightning.NOM	bellow.PRS.3SG

1. Source meaning: "**Like a bawling (cow)** the lightning bellows". (Jamison, Brereton 2014)

2. Target meaning: "The lightning bellows, **as if bawling**". (Author's translation)

Similarly, in example (40), the participial phrase *vidúṣī … víśvam* 'knowing all' can be interpreted either as standard ('like ones who know all') or as an attribute of the comparee.

(40) ṚV 5.41.7cd

uṣā́sā-náktā		**vidúṣī**		*iva*	*víśvam*
dawn-night(F).NOM.DU		know.PTCP.PF.NOM.F		like	all.ACC.N
ā́	*hā*	*vahato*		*mártiyāya*	*yajñám*
LP	PTC	convey.PRS.2DU		mortal.DAT	sacrifice.ACC

1. Source meaning: "Night and Dawn, **like ones who know all**, through the days convey the sacrifice here for the mortal". (Jamison, Brereton 2014)
2. Target meaning: "Dawn and Night, **knowing to some extent everything**, convey the sacrifice for the mortal". (Pinault 2004, 297)

This last bridging context may have opened the way for adjectives and participles in attributive position and for verbs. Take, for instance, example (41), where the presence of the standard marker *ná* following the standard *paśúṁ* 'piece of cattle' forces an interpretation of *iva* as a modifier of the participle *naṣṭám* in attributive position. In (42), *émi prasphuránn* might be taken as a single predicate modified by *iva*:

(41) ṚV 1.116.23

kṛṣṇiyā́ya …	*nāsatiyā*	*śácībhiḥ*		
Kṛṣṇiya.DAT	Nāsatyas.VOC.DU	power.INST.PL		
paśúṁ	*ná*	**naṣṭám**	*iva*	*dárśanāya*
animal.ACC	like	lost.ACC	like	seing.DAT
viṣṇāpúvaṁ	*dadathur*	*víśvakāya*		
Viṣṇāpū.ACC	give.PF.3PL	Viśvaka.DAT		

1. *Source meaning: "To Viśvaka Kṛṣṇiya […] o Nāsatyas, you gave by your powers Viṣṇāpū to be seen (once more), **like a lost animal**". (Jamison, Brereton 2014)
2. Target meaning: (*pāda* b) "… who has been **somehow lost** like a head of cattle". (Pinault 2004, 302)

(42) ṚV 7.89.2ab

yád	**émi**	**prasphuránn**	**iva**	
if	go.PRS.1SG	tremble.PTCP.NOM	like	
dṛtir	*ná*	*dhmātó*	*adrivaḥ*	*mṛṛḷā́*
bag.NOM	like	blow.PPP.NOM	with_stone.VOC	have_mercy.IMPV.2SG

1. Source meaning: "Wenn ich **wie ein Schlotternder gehe**, wie ein Schlauch aufgebläht…" (Geldner 1951)
2. Target meaning: "If I **go kicking, as it were**, inflated like a water-skin, o master of the pressing stones, be merciful!" (adapted from Jamison, Brereton 2014)

6.5   Interim Summary

Wrapping up, several bridging contexts can be detected in the ṚV that may have favoured the development of *iva*'s adaptor function from the comparative one. While context-induced inferences may remain confined to bridging contexts (variously described as "contextual meanings" or "pragmatic meanings"), those acquiring switch contexts may develop some greater frequency of use and may no longer be confined to a given context, thus turning into conventionalised meanings (cf. Hopper, Traugott 1993, 73-4; Heine 2002). In the ṚV, I was able to identify only a single switch context: this is represented by those cases where neither the linguistic context nor the discourse universe provides referents for a null compare, which triggers a reanalysis of the standard as the argument of the verb and of *iva* as its modifier.

To determine which factors may have prompted the switch context to develop greater frequency and eventually led to *iva*'s approximative function becoming conventionalised, we may hypothesise a decline in null arguments in the passage from Early to Middle Vedic. The decline in the use of null anaphora of referential arguments in the history of Latin and AG has been described by Luraghi (2010) and Ponti and Luraghi (2018), and belongs with a series of changes in the direction of configurationality that characterised the passage from ancient IE languages to more recent varieties (on configurationality, see Hale 1983, Austin, Bresnan 1996; on the development from non-configurationality to low-level configurationality in Indo-Aryan, see Reinöhl 2016). Although Reinöhl (2016, 36) reports that null arguments, "in particular null subjects, occur with great frequency in Vedic prose", a quantitative study comparing Early and Middle Vedic has not yet been conducted and might improve our understanding of the conventionalisation of *iva*'s approximative function.[26]

Whatever the factors that led to an increase in the frequency of the switch context may have been, we can hypothesise that the existence of bridging contexts such as 3 and 4 contributed to the diffusion of the adaptor function to other contexts, namely after non-substantivised adjectives and verbs. Following Mihatsch's (2009) semantic map of approximation, *iva* would later develop shield functions and finally be employed as a rounder after numerals, as also suggested by the rarity of this pattern in the ṚV.

Although grammaticalization is better described as a *continuum* from source to target meaning, *iva*'s development from a standard

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[26]   Note, however, that determining a change of this type is complicated by the textual genre of the ṚV. Indeed, a different frequency in the use of null anaphora in Early and Middle Vedic may result from the allegedly greater variety of syntactic patterns allowed by metrical texts as opposed to prose.

marker into adaptor can be conveniently described as a four-stage scenario, as in **table 1** (Heine 2002).

Table 1 Development of the adaptor function as a four-stage scenario (Heine 2002)

Stage	Example	Resulting meaning
I-Initial stage	**yūtʰā́**ᵢ *iva paśváḥ* **paśupā́**ᵢ … **asmā́m̐**ⱼ *indrābhí ā́* **vavr̥tsuva**ᵢ 'Like a herdsman to his flocks of livestock, o Indra, turn here to us'. (R̥V 6.19.3cd)	Source meaning
II-Bridging context	**índro**ᵢ *ráthāya*ⱼ *pravátam kr̥ṇoti yám adhyásthān maghávā vājayántam yūtʰā́ iva paśvó* **Øᵢ** **Øⱼ** *ví unoti gopā́* 'Like a herdsman the flocks of livestock, he (Indra, *índro*) urges (his chariot, *ráthāya*)'./ 'The herdsman urges the flocks of livestock, <u>as it were</u>'. (R̥V 5.31.1a-c)	Target meaning foregrounded
III-Switch context	**sádma iva dʰī́rāḥ** *sammā́ya cakruḥ* 'The clever ones made (for him, Agni) <u>some kind of seat</u> by building together'. / 'Like clever men an abode, the wise have made a seat (for him), having measured it out completely'. (R̥V 1.67.10b)	Source meaning backgrounded
IV- Conventionalisation	*iva* following adjectives in attributive position, verbs, adverbs, and eventually numerals (rounder function)	Target meaning

6.6   Approximating *ná*?

One peculiarity of some R̥gvedic similes should be mentioned as further evidence for the emergence of the adaptor use from the comparative one. Unlike Vedic prose, in which only *iva* is found in the adaptor function, the R̥V provides examples of bridging contexts in which *ná* is employed as standard marker, instead of *iva*. Take for instance example (43), where both *iva* and *ná* partake in Bridging context 1. Note that in this case, the null object 'hymn' of the verbs *úpa ā́ akaram* 'I have driven toward' and *vr̥ṇīṣvá* 'choose' is retrievable from the discourse context: in the closing of a hymn, as in the case of (43), the poet often summarises his homage to the god by renewing the offer of the hymn just concluded.

(43) ṚV 10.127.8

úpa	*te*	***gā́***	***iva***	*ā́*	*akaraṁ*
LP	2SG.ACC	COW.ACC.PL	like	LP	do.AOR.1SG
vr̥ṇīṣvá	*duhitar*	*divaḥ*			
choose.IMPV.2SG.MID	daughter.VOC	sky.GEN			
rā́tri	***stómaṁ***	***ná***	***jigyúṣe***		
Night.VOC	praise_song.ACC	like	victor.DAT		

1. Source meaning: "Right up to you have I driven (this hymn), **like cows** (to their pen). Choose it, o Daughter of Heaven, o Night—**like a praise song for a victor**". (Jamison, Brereton 2014)
2. Target meaning: "Right up to you have I driven **these cows, so to speak**. Choose, o Daughter of Heaven, o Night, **this praise song for a victor, so to speak**".

In some cases, neither linguistic context nor discourse participants provide an overt comparee for the simile: as we have seen for *iva*, this makes the bridging context into a switch context incompatible with the source meaning. In example (44), we find no available subject for the verb *vivyacuḥ* '(they) envelop' other than *samudrā́ saḥ* 'the seas': thus, we must interpret *ná* as modifying *samudrā́ saḥ*, probably signalling that it does not refer literally to the seas, but rather figuratively to the waters which are mixed with Soma (cf. Jamison, Brereton 2014's suggestion that the null subject 'they' refers to the water).

(44) ṚV 9.80.1d

samudrā́so	***ná***	*sávanāni*	*vivyacuḥ*
sea.NOM.PL	like	pressing(N).ACC.PL	envelop.PF.3PL

1. *Source meaning: "[It purifies itself—the stream of Soma, who has the gaze of men. With truth he summons the gods from heaven. With the roar of Br̥haspati he has flashed forth.] **Like seas** they [=the waters?] envelop the pressings". (Jamison, Brereton 2014)
2. Target meaning: "**The seas of some sort** envelop the pressings". (Author's translation)

In example (45), *ná* occurs in Bridging context 2. Indeed, the adjective *śivā́bhir* 'kind' and the participle *smáyamānābhir* 'smiling' can be either read as modifying an understood standard 'girls'/'female', or as an instrumental adjunct of the verb *ā́gāt* 'he has come'. In the latter case, *śivā́bhir ... smáyamānābhir* stands metaphorically for the lighting flashes of the thundercloud (the 'bull' in *pāda* b) and *ná* functions as an adaptor flagging the figurative meaning of the expression.[27]

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27   According to Jamison (2021, *ad loc.*), the smiling females of *pāda* c must be the lightning flashes (so also Geldner's translation); this interpretation is supported by *vidyútaḥ*

(45) ṚV 1.79.2

ā́	*te*	*suparṇā́*	*aminantaṁ*	*évaiḥ*
LP	2SG.GEN	fine-feather.NOM.PL	change.IMPF.3PL.MID	way.INST.PL

kṛṣṇó	*nonāva*	*vṛṣabhó*	*yádi*	*idám*
black.NOM	bellow.INTENS.PF.3SG	bull.NOM	if	DEM.NOM.N

śivā́bhir	***ná***	***smáyamānābhir***	*ā́gāt*
kind.INST.PL.F	like	smile.PTCP.PF.INST.PL.F	come.AOR.3SG

pátanti	*míha*	*stanáyanti*	*abhrā́*
fly.PRS.3PL	mist(F).NOM.PL	thunder.PRS.3PL	cloud(N).NOM.PL

1. Source meaning: "Your fine-feathered [lightning flashes] zigzagged along their ways. The black bull keeps bellowing. If he is really here, he has come here with his (lightning flashes) **like kindly, smiling (girls)**. The mists fly; the clouds thunder". (Jamison, Brereton 2014)
2. Target meaning: (*pāda* c) "He has come **with his kind, smiling girls, as it were**". (Author's translation)

When describing Bridging context 3, consisting of predicative similative constructions, we have seen that *ná* is not found in this context, but that predicational copula constructions with *iva* are also rare.

Finally, the particle *ná* is found in Bridging context 4, featuring a substantivised adjective or participle as standard. This is the case with the participle *kṛṇvānó* in (46):

(46) ṚV 9.107.26cd

janáyañ	*jyótir*	*mandánā*	*avīvaśad*
beget.PTCP.PRS.NOM	light.ACC	delighting.ACC.PL.F	bellow.AOR.3SG

gā́ḥ	***kṛṇvānó***	***ná***	***nirṇíjam***
cow(F).ACC.PL	make.PTCP.PRS.NOM.MID	like	adornment.ACC

1. Source meaning: "[Clothing himself in the waters, he (Soma) rushes around the cask, the drop being propelled by the pressers.] Begetting the light, he has made the delighting cows bellow, **as one making the cows into his fresh garment**". (adapted from Jamison, Brereton 2014)
2. Target meaning: "He has made the delighting cows bellow, **making the cows into his fresh garment, as it were**". (Author's translation)

The latter example makes clear how participial standards may have favoured the extension of the adaptor use with verbs: here, the target meaning offers the most suitable interpretation for the passage,

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… *jájjhatīr iva* 'lightning flashes … like giggling (girls)' in ṚV 5.52.6. Oldenberg (1897) suggests that these females are the rain showers, while Witzel and Gōto (2007) suggest that perhaps they are the dawns. The subject of *ā́gāt* is the black bull of *pāda* b, which metaphorically represents the thundercloud.

for it is not clear what the referent of the standard 'one making the cows into his fresh garment' could be. In some cases, such as (47), *ná* occurs after a finite verb, thus excluding the source meaning:

(47) ṚV 2.4.7ab

agníḥ	*śocíṣmāṁ*	*atasā́ni*	*uṣṇán*
Agni.NOM	shining.NOM	shrub.ACC.PL	burn.PTCP.PRS.NOM
kṛṣṇávyathir	***asvadayan***	***ná***	*bhū́ma*
having_black_path.NOM	sweeten.IMPF.3SG	like	ground.ACC

"Agni, enflamed, scorching the brushwood, with his black wayward course, **has 'sweetened', as it were**, the ground".

The examples above suggest that *ná* could also already have been developing into an adaptor in the ṚV. Besides its absence in Bridging context 3 which, as we have seen above, may be due to its origin and its combinatorial features, the lower incidence of approximating *ná* in the ṚV must be explained by its decreasing productivity;[28] this decrease must have caused cases of approximating *ná* to remain isolated in the ṚV and to disappear in Vedic prose, where the particle is only employed as a negation. As for *yáthā*, although it also occurs in some possible bridging contexts,[29] its paltry 76 occurrences prevent us from forming hypotheses about its development into an adaptor, at least in the ṚV. However, we know that such development did not take place in Vedic prose either, where *yáthā* is primarily employed as a subordinating conjunction (also for clausal comparison) and secondarily as a standard marker of syntagmatic similes.

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28 The factors that led to the decline of comparative *ná* have yet to be precisely determined. Pinault (1997a) suggests that the availability of a standard marker that provides a long syllable (-*Ceva* vs -*Ca ná*) may have played a role in the spread of *iva* at the expense of *ná*, and recognises two main processes that led to the gradual substitution of the former for the latter within the formulaic system. According to Viti (2002), the distribution of *ná* and *iva* in the ṚV is based on the individuation level of the referents denoted by the standard: if the standard is highly individuated, it is followed by *iva*, otherwise by *ná*. Accordingly, Viti (2002, 69) suggests that the expansion of *iva* at the expense of *ná* occurs out of semantic solidarity between nouns that normally take *iva* and others that would normally take *ná*: for instance, as inanimate nouns *híraṇya-* (n) 'gold', *cándra-* (n) 'id.', *ghṛṇi-* 'light, heat' would normally be marked by *ná*, but are marked by *iva* due to semantic solidarity with nouns naming stars and celestial bodies which often occur with *iva*.

29 Cf. for instance ṚV 1.130.6c-e, where *yáthā* seems to occur in Bridging context 1 with a syntactically determined null object (due to argument sharing). In ṚV 9.32.5, the particle occurs in what looks like Bridging context 2, since it marks an instrumental standard that has no counterpart in the comparee.

7   Summary and conclusion

In this paper, I have argued that the grammaticalization process that led the standard marker of similative constructions *iva* to be reanalysed as an adaptor is already apparent in the language of the RV.

First, I suggested that the different functions performed by *iva* in Vedic prose correspond to those identified cross-linguistically for adaptors, i.e. approximation markers that flag the semantically loose use of a lexical expression (section 4.1). The approximative function is already attested in the RV, but in this text the particle takes a much smaller range of nuances, its use being primarily one of flagging the figurative reading of the preceding noun or of the whole expression (section 4.2).

In section 5, I reconsidered the main hypotheses on the original function of *iva* in the light of cross-linguistic evidence. Starting from the etymology of *iva* as a reflex of the combination of the demonstrative stem *$*h_1i$- and of the PIE disjunctive particle *$*u̯e$ 'or', I considered the possibility that the comparative and the approximative functions emerged independently from *iva*'s deictic function. More precisely, I suggested that the adaptor function might have developed from the recognitional function of the deictic or from the employment of the particle as a disjunctive GE with the meaning 'or (something like) this', 'or so' and argued that neither hypothesis is supported by textual evidence. Indeed, *iva* is never employed as a recognitional deictic and, apart from one occurrence of *iva* within a generalising GE, no example seems to fit the function of GEs of conveying *ad hoc* categorisation.

In section 6, I made a case for the emergence of *iva*'s adaptor function from the comparative one. Semantically, the specialisation of Rgvedic similative constructions for figurative comparison constitutes a crucial indicator of this shift; syntactically, *iva* loses its function of situating the comparee with respect to the standard (source meaning) and becomes a modifier of the latter (target meaning). This development takes place through different bridging contexts, all of which can already be detected in the RV; a possible switch context is represented by cases in which neither the linguistic context nor the discourse universe provides referents for a null comparee, which triggers a reanalysis of the standard as the argument of the verb and of *iva* as its modifier. Finally, in support of the tendency of standard markers to develop into adaptors, I have shown that *ná* also appears in the different bridging contexts but that these have remained isolated cases in the RV due to the decreasing productivity of comparative *ná* and to its disappearance in Vedic prose.

Abbreviations

ABS	absolutive
ACC	accusative
AG	Ancient Greek
AOR	aorist
CH.U.	Chāndogya Upaniṣad
CAUS	causative
CPREE	comparee
DAT	dative
DEM	demonstrative
DES	desiderative
DU	dual
F	feminine
GB	Gopatha Brāhmaṇa
GE	general extender
GEN	genitive
IMPV	imperative
IMPF	imperfect
INST	instrumental
INTENS	intensive
LOC	locative
MID	middle
N	neuter
NEG	negation
NOM	nominative
NP	noun phrase
OPT	optative
PAR	parameter
PF	perfect
PL	plural
PM	parameter marker
PPP	past participle passive
PTC	particle
PTCP	participle
REL	relative
ṚV	Ṛgveda
SDG	superlative degree
SG	singular
STAND	standard
STM	standard marker
SUBJ	subjunctive
ŚB	Śatapatha Brāhmaṇa
VOC	vocative

1	first person
2	second person
3	third person

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The Creoloid Origins of Chinese

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Abstract　From 1513, Chinese mystified Western observers with its phonology and grammar. In the 19th century, von Klaproth, Lepsius and Karlgren extended the comparative method to Chinese and established Chinese historical phonology and grammar, but a lineage of benighted thinkers promulgated a racist rendition of language typology. This trend reached a crescendo during the Opium Wars and culminated in the Sino-Tibetan family tree model. Whereas sound comparative linguistics supports von Klaproth's Trans-Himalayan model, embattled Sino-Tibetanists, unable to adduce evidence for their phylogenetic beliefs, today seek recourse to lexicostatistics.

Keywords　Chinese. Trans-Himalayan. Historical phonology. Historical grammar. Language typology. Sino-Tibetan. Lexicostatistics.

Summary　1 Chinese Mystifies the Occident. – 2 Racist Linguistic Typology vs Linguistic Relativity. – 3 Ex Occidente Lux. – 4 Creole and Creoloid. – 5 Lexicostatistics Disguised as 'Phylogenetics'.

1   Chinese Mystifies the Occident

Ever since May 1513, when Jorge Álvares became the first Occidental mariner to reach China, where eight years later he died in the arms of his friend Duarte Coelho, Europeans have been mystified by the Chinese language. The Portuguese maritime expansion enabled scholars such as Michele Ruggieri of Apulia to sail to the missions in the East. After a year on the Malabar coast of India, Ruggieri lived in China from 1579 to 1588, where he compiled a Portuguese-Chinese dictionary. He was later joined by his Italian Jesuit confrère Matteo Ricci, who arrived in China in 1583 after having worked in Goa and Cochin for five years. Ricci remained in China until his death in 1610, and in their lexicographical work the two men were assisted by a Chinese Jesuit brother remembered by the Christian name of Sebastiano Fernandez (Teixeira 1982).

Information on the Chinese language provided by Ruggieri upon his return to Europe was included in volumes prepared by Angelo Rocca (1591; 1595), published in Rome. From 1596 onward, the Portuguese were joined in East Asian waters by the Dutch, and, after the Peace of Münster in 1648, information gathered by Jesuits in China was often published in Amsterdam, such as the Chinese atlas by Martino Martini of Trento, which was incorporated by Joan Blaeu (1655) as the *Novus Atlas Sinensis a Martino Martinio S.I. descriptvs* into the sixth part of his *Theatrvm Orbis Terrarvm sive Novus Atlas*.

At this time, Gottlieb Spitzel came from Augsburg to Leiden to study Sinology under Jacobus Golius, alias Jacob van Gool. In 1660, Spitzel wrote a treatise on what he had learnt. He noted that the first and foremost feature of the Chinese tongue was the monosyllabicity of words, which gave the language an unaesthetically halting aspect. He hastened to point out that another feature of Chinese was that many words have homonyms, denoting different meanings yet differing in pronunciation only by dint of their accent or musical tone.

> *Prima* eſt, quia peræque ejus dictiones ſunt *monosyllabæ*, quæ orationem cum ingenti loquentis fastidio ſtatim interrumpunt... *Altera* est quod multas voces habeat *homonymas*, h.e. quæ plurimas & diverſiſſimas res ſigniſicent, illaſque tantum nonnullis accentibus aut tonis muſicis diſtinctas (Spizelius 1660, 103-4)

Spitzel goes on to describe the diacritic marks invented by the Jesuits to mark Chinese tones [´ ` ˆ ˇ ˜], the use of which he illustrates with minimal pairs.

The same observations were made later in the compendium *China Illustrata*, published in Amsterdam by the German Jesuit Athanasius Kircher, who had collated information culled from the correspondence and reports of his Jesuits confrères that had been sent back to Rome.

Kircher wrote that Chinese was written with ideograms or 'characters', representing words that were "monofyllabæ & indeclinabiles", and he illustrated the use of the same five vowel diacritics to mark the otherwise homophonous words, distinguished only by their *musicus* 'musical tone' (Kircher 1667, 12). Soon at this time, the first Western edition of the *Analects* of Confucius appeared, translated into rhyming Dutch verse by Pieter van Hoorn (1675) and published in Batavia.

A cameo of the subsequent Occidental fascination with Chinese grammar is preserved in the writings of John Webb. In 1628, at the age of 17, John Webb became the protegé and ultimately the heir of Inigo Jones, both men still celebrated figures in the history of English architecture. In a study devoted to the Chinese language, Webb captures the Western lay understanding of the period.

> Firſt then as to *Simplicity*, our *Chinique* is a Language that conſiſts (and it is ſingular therein) all of Monoſyllables, not one Diſſyllable, or Polyſyllable being to be found in it […] the *Chinois* are never put to that irkeſome vexation of ſearching out a *Radix* for the derivation of any of their words, as generally all other Nations are, but the *Radix* is the word, and the word the *Radix*, and the ſyllable the ſame alſo […] Beſides they are not troubled with variety of Declenſions, Conjugations, Numbers, Genders, Moods, Tenſes, and the like Grammatical niceties, but are abſolutely free from all such accidents, having no other Rules in uſe, than what the light of Nature hath dictated unto them; whereby their Language is plain, eaſie, and ſimple, as a natural ſpeech ought to be […] Secondly, *Generality* […] Thirdly, Modeſty of Expreſſion […] Fourthly, the *Vtility* […] Fifthly, and laſtly the *Brevity* […] But if the *Brevity* of a Language be a remarque of the primitive Tongue, as it is afferted to be; the Chinique ſeemeth to ſurpaſs all other Nations of the World therein. For as thereby, the Æquivocableneſs is enriched with compendiouſneſs, ſo is the compendiouſneſs beautified with gracefulneſs and ſweetneſs, beyond in a manner all Example. (Webb 1678, 191-2, 201-2, 206-8)

Likewise aware of the "Muſical Accents" which distinguished otherwise homophonous syllables (1678, 198-9), Webb argued that monosyllabicity showed Chinese to be "the primitive Tongue", therefore inherently redolent of the language of infancy:

> The Language of *China* as hath been ſhewed alſo, conſiſteth all of Monoſyllables, & in our Infancy, the first Notions of ſpeech we all have are Monoſyllables. (1678, 196)

The more knowledgeable early writers were well aware of the distinction between the Classical Chinese literary language or *wényán*

文言 and the modern Sinitic languages or 'Chinese dialects', such as Hokkien, Cantonese and Mandarin. A study of a good grammar of modern Mandarin (Wiedenhof 2015) puts the lie to the simplistic notion that all the words in the language are monosyllables. English too contains multitudinous monosyllabic words, such as *boy*, but also exhibits monosyllabic words that contain more than just a single morpheme, such as *boys*. Rather, the purported monosyllabicity of Sinitic languages applied to morphemes more so than to words. In his *Mvsevm Sinicvm*, Bayer made the point that, when all things are properly considered, Chinese very much has polysyllabic words, but the language distinguishes each of the syllables by separate characters, so that these can be regarded as monosyllables.

> Quare ſi recte omnia confideres, Sini adhuc habent polyfyllaba, ſed quia diſtinguunt fyllabas characteribus, habentur pro monofyllabis. (1730, 106)

Before the coining of modern linguistic typological terminology, the notion of 'monosyllabicity' in the writings of knowledgeable scholars manifestly represented a language typological concept signifying the combination of the phonological typology of the language, the morphological structure of words and lack of flexional morphology. It is easy to find naïve writers of the past who did indeed use the term in an overly literal sense, and certain writers have perennially felt called upon to assail such naïvely literal usage of the term.

In terms of its typological traits, Chinese continued to astonish scholars. Wilhelm von Humboldt marvelled at the "*Lauteigenthümlikheit* des Volkes… die Sylben stark in der Aussprache auseinander zu halten" in combination with the 'scheinbare Abwesenheit aller Grammatik", whereby grammatical relations were solely expressed "durch Stellung". Yet von Humboldt insisted that the lack of morphological complexity in the language could in no way be construed as compromising "die Schärfe des Sinnes" of its speakers (1836, 324-5). In Paris, comparative work by Julius von Klaproth (1823) based on inherited vs borrowed roots led him to establish that Tibetan, Burmese, Chinese, Garo and the many 'trans-Gangetic' languages of the eastern Himalayan region constituted a single Trans-Himalayan or Tibeto-Burman language family, distinct from other Asian linguistic phyla. For two centuries this well-informed Tibeto-Burman or Trans-Himalayan view of the language family would have to compete against a benighted and empirically unsupported Indo-Chinese or "Sino-Tibetan" paradigm (van Driem 2014; 2018).

Inspired by the work of von Klaproth, in 1860 Carl Richard Lepsius in Leipzig proposed the several mechanisms now known to underlie tonogenesis in his analytical historical comparison of Tibetan, Cantonese, Hokkien and Mandarin:

die Fortsetzung der gegenwärtigen Abhandlung [...], welche schliefslich nachzuweisen versuchen wird, dafs wir die einsilbigen Sprachen überhaupt, und die Chinesische im Besondern vom Standpunkt der Lautlehre aus, nicht als embryonische unentwickelte Ursprachen, sondern als herabgekommene verstümmelte Sprachen anzusehen haben [...]

Bleiben wir noch einen Augenblick bei der Betrachtung der sprachgeschichtlichen Curve stehen, die uns in der Tibetischen Sprache entegegengetreten ist [...] dafs es zuerst eine Mannigfaltigkeit von Wurzelwörtern und kleineren Formwörtern oder Partikeln vorfand, die schon von selbst zu enklitischer Abhängigkeit neigten, aber ebensowohl zu feineren grammatischen Gliederungen hätten verarbeitet werden können. Statt dessen rifs sie der monosyllabische Accent so mächtig an sich, dafs sie nicht nur ihre Selbständigkeit, sondern auch ihre grammatische Bildungskraft verloren und schliefslich ganz verschwanden. Es ist schon bemerkt worden, dafs die Tibetische Sprache dadurch in lautlicher Beziehung fast auf dem Standpunkte der Chinesischen Dialekte von *Fukyen* und *Kwaṅ-tuṅ* angekommen ist. [...] Consonantische Auslaute, wie *pat*, *kap*, *kik* u.s.w. modificiren schon wesentlich das strengste Princip der Monosyllabität [...] so kann es nach allen Regeln der Sprachgeschichte nicht im mindesten zweifelhaft sein, dafs auch das Mandarinische einst dieselben Auslaute hatte, und nur in späterer Zeit diesen letzten Schritt in den Konsequenzen des Monosyllabismus machte, indem es auch diese Schlufskonsonanten abwarf.

Ja, mann kann vielleicht noch weiter gehen, und auch die andre uns so auffalende Erscheinung, die sich in den durchgebildeten monosyllabischen Sprachen Hinterasiens findet, die *Tonaccente*, als eine Folge desselben Princips rationell erklären und in ihrer Entstehung unserm Verständnifs näher bringen.

[...] Die Chinesische Einsilbigkeit ist nicht die ursprüngliche, sondern eine bereits von früherer Mehrsilbigkeit *herabgesunkene* und in verhärteter Einseitigkeit an der Grenze ihrer Entwickelung angelangte. (1861, 472, 492-3, 496)

In his study, Lepsius illustrated how tones must have arisen through the loss of different types of *Auslaute* 'final consonants' and through the convergence of various types of once distinct *Anlaute* 'initial consonants'. His work inspired Bernard Karlgren and so launched the study of Chinese historical phonology and grammar. Remarkable words, such as *verstümmelt* 'mutilated' and *herabgesunken* 'degenerate', were chosen by Lepsius to describe the typology of Chinese as representing a derived state. This word choice must be seen as part of the scholarly stance of the period that viewed modern Germanic languages as degenerate forms of Proto-Germanic, Romance languages as degenerate forms of Latin and the modern Indic lan-

guages as degenerate forms of Sanskrit. However, Lepsius' remarkable diction also gave voluble expression to the *Zeitgeist* of the period in which he lived.

2 Racist Linguistic Typology vs Linguistic Relativity

Already in the early 19th century, the recognition of various structural types of language had led Friedrich von Schlegel to divide languages into three distinct types "flexionslos, affigirend und flectirend" (1808). August Friedrich Pott expanded this typology into four types, i.e. "isolirend, agglutinirend, flexivische, einverleibend" (1848). Whereas Webb had seen 'monosyllabicity' or the isolating typology of Chinese as imbuing the language with "gracefulneſs and fweetneſs", during the period of the First Opium War (*gerebatur* 1839-42) and Second Opium War (*gerebatur* 1856-60), less anodyne views came to be entertained by a certain brand of linguist.

Grammatical typology inspired Heymann Steinthal (1850; 1851; 1860), Arthur de Gobineau (1854; 1855), Ernest Renan (1858) and John Beames (1868) to develop a view of language evolution, in which they ranked Chinese and Thai together on the lowest rung of the evolutionary ladder of development based on the criteria of typological 'monosyllabicity' and lack of inflection. James Byrne (1885, 1: 45) argued that "the causes which have determined the structure of language" lay in the varying "degrees of quickness of mental excitability possessed by different races of men". Chinese and Siamese ostensibly mediated a rudimentary, less evolved way of thinking and so were assigned to the lowest rungs of Steinthal's ladder of language evolution.

To account for the contrast between the technological advancement of Chinese civilisation and the ostensibly low rung on the typological ladder of language evolution ascribed to the Chinese language, de Gobineau invented a distinction between so-called male and female races, whereby "les races mâles" possessed "un langage plus précis, plus abondant, plus riche que les races femelles" (1854, 1: 190). His explanation, therefore, was that the Chinese 'race' was in some sense 'male' despite the inferior status which he imputed to the typological traits of the Chinese language. Ernest Renan, the founder and first president of the Société Linguistique de Paris, held a particularly dim view of the Chinese language and devoted numerous pages to diatribes of the following sort:

> la langue chinoise, avec sa structure inorganique et incomplète, n'est-elle pas l'image de la sècheresse d'esprit et de cœur qui caractérise la race chinoise? …Suffisante pour les besoins de la vie, pour la technique des arts manuels, pour une littérature légère de petit aloi, pour une philosophie qui n'est que l'expression souvent

fine, mais jamais élevée, du bon sens pratique, la langue chinoise excluait toute philosophie, toute science, toute religion, dans le sens où nous entendons ces mots. (Renan 1858, 195-6)

The new brand of racist linguistic typology contrasted with the older more sophisticated tradition of linguistic relativity, developed by John Locke (1690), Étienne de Condillac (1746), Pierre de Maupertuis (1748; 1756) and Wilhelm von Humboldt (1822; 1825; 1836). Linguists following this scholarly tradition, notably Julius von Klaproth (1823), Jean Jacques Nicolas Huot (Malte-Brun 1832, 1: 521), August Friedrich Pott (1856) and Friedrich Max Müller (1871; 1881), vehemently opposed the ideas of racist language typology and espoused a more refined understanding of how language structure and the conceptual repertoire expressed by the grammatical categories and contained within the lexicon of any given language influenced our thinking, and, quite crucially, insisted on the distinctness and independence of the linguistic affinity and biological ancestry of any particular language community.

An inconvenient consequence of Steinthal's evolutionary ladder of linguistic development was that Sanskrit and other such flamboyantly flexional languages were at the top, but English and French, which no longer exhibited a as much flexional morphology, would have to be assigned a lower rung on the ladder. To alleviate this unwanted result, John Beames (1868) coined the terms "analytic" and "synthetic", still used in linguistic typology today. The term 'analytic', with its inherently favourable connotations, was applied to English and French, languages which had ostensibly evolved beyond the stage of perfection purportedly reflected by Sanskrit, Latin or Proto-Germanic.

Another burlesque moment can be seen when Pott (1856), who vigorously assailed the racist linguistic typology of Steinthal and de Gobineau, contested their hierarchy of language types on the grounds that "Negeridiomen" could, Pott argued, not possibly be positioned on rungs higher on the typological tree of language evolution than Chinese or Siamese. The presuppositions implied by Pott's argument might strike us as racist today, although this line of reasoning ironically forms part of a voluminous rebuttal of the racist linguistic typology set forth in the four volumes written by de Gobineau.

3   *Ex Occidente Lux*

Ex Occidente Lux was the title of a periodical published by the esoteric Psychosophische Gesellschaft, a secretive cult established at Zürich in 1945, which was inspired by Aleister Crowley's occultist Thelema religion. As the title of this section, however, the phrase denotes a *Leitmotiv* in scholarly thinking that the Chinese writings sys-

tem was ultimately of foreign inspiration. This idea has often been viewed as effrontery by certain modern politicians and by those scholars who have sought to stress both the originality and unbroken continuity of East Asian culture. Any studious reader of Chinese history will, however, be amply aware that East Asia has always made up part of a greater whole and that interruptions and changes of ethnic and linguistic identity have convulsed East Asian cultural history as regularly as other parts of Eurasia.

Looking back into the past, at a time that historiography dissipates into oral tradition and legend, the Xià in the Yellow river valley were subjugated by the Shāng, and later the Shāng were in turn conquered by the Zhōu. Chinese archaeologist Kwang-chih Chang (1983) stressed that the three distinct polities recorded under these names could very well have represented ethnolinguistically distinct populations. He therefore cautioned against anachronisms that arise from applying the label 'Chinese' to archaeological cultural assemblages or peoples of the distant past. Ancient cultures on the North China Plain were not necessarily peopled by populations that were all ancestral to the Chinese either linguistically or by biological lineage. An unbroken cultural continuity is therefore no more than a wilful projection of an ahistorical idyll onto a complex and variegated past by the historically naïve.

The idea of the Egyptian or Chaldaean inspiration of Chinese writing dates back to early Jesuits whose musings were collated by Kircher (1652), and the more unwitting exponents of this line of thinking were lampooned by none less than Voltaire (1773). Over a century later, Terrien de Lacouperie (1888; 1894) expounded the rather bold theory that Chinese writing ultimately derived from Babylonia. His writings enjoyed popularity for some time and were influential in some quarters, but weaknesses of fact and detail were assailed by critics, thus providing ammunition to those eager to dismiss the notion of foreign influences on Chinese culture altogether, most notably his Leiden adversary Gustave Schlegel (1891).[1]

Traditionally, students of Sininology unquestioningly inherit the view that the Chinese script was a purely local invention. Of those who go on to become scholars, and whom the theory of the xenic origin of the Chinese script then takes by surprise, the smug reaction of Boltz (2000) is typically illustrative of the poise struck by scholars of his disposition in that he peremptorily dismisses the idea without adducing a single valid argument for his contention that the Chinese script was invented *ex nihilo*, let alone that its earliest users spoke a

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[1] The Dutch society *Ex Oriente Lux* was founded in Leiden in 1933, thirty years after Schlegel's death, and must not be confused with the Oriental Society of the Netherlands or *Oosters Genootschap in Nederland*, founded in Leiden in 1920.

Sinitic language. Today, whereas numerous subsidiary claims made by Terrien de Lacouperie can be disregarded, his central idea of an ultimate foreign inspiration for the writing system which arose in the Yellow River basin makes geographical and chronological sense and provides a plausible explanation for the advent of writing in the region that today has become China.

The oracular inscriptions of the Shāng period, dating from the 13th to 11th century BC, are believed to have arisen in the shamanist context of augury and were written on bovine shoulder blades and the plastrons of tortoises, but also on other types of bones. These Shāng glyphs served as models when writing was adopted and elaborated by the Zhōu, who originated further west in the Wèi and Fén river drainages and by whom the Shāng were subjugated. Shāng glyphs therefore represent the precursors of the flamboyant and more pictorial script used in the bronzes of the Western Zhōu (1045-771 BC), where the shapes of the ideograms could be carefully fashioned in the malleable clay of the moulds.

These early writing systems of the Yellow River drainage are therefore of great antiquity. However, when viewed against the long history of scripts, the writing systems which arose on the eastern fringe of Eurasia are actually of relatively young date in comparison with the scripts of the Near East, which arose in the 4th millennium BC. Through the Elamite trade network, the idea of writing spread eastward, with the Proto-Elamite pictographic script inspiring the Indus script, which came into use in the Early Harappan Kot Diji period, dated to ca. 2800-2600 BC, and which remained in use into the early 2nd millennium BC. During this period, specimens of Elamite writing circulated throughout the Iranian plateau and into Central Asia.

Edwin George Pulleyblank (1996, 7) therefore spoke more of "stimulus diffusion" involving the eastward spread of the "germ of an idea of writing" from the Near East in tandem with and via the same route as the dissemination of Bronze Age technologies. Rather than merely drawing inspiration from earlier Western writing systems, I argued that actual material resemblance in the shapes of glyphs, geographical proximity and immediate chronological anteriority suggest that Proto-Elamite pictographic script and, more immediately, the logosyllabic Indus writing system were the antecedents to the glyphs of the Shāng period and may have served as its models, perhaps via now lost intermediaries. I illustrated the structural similarities of Shāng glyphs with the earlier glyphs making up older writing systems such as the Sumerian pictographic script, dating from the late 4th millennium BC, Proto-Elamite pictographic script in West and Central Asia in the early 3rd millennium BC, and, most particularly, Linear Elamite *Strichschrift* from late 3rd millennium BC (van Driem 2001, 355-8).

Moreover, even in later periods of history, the stunning material resemblance of Western Zhōu ideograms with contemporaneous Late Bactrian glyphs is no coincidence. Once an early Sinitic population, possibly identifiable with the Western Zhōu, had adopted the writing system of the Shāng and then refined this script to represent their own language, the subsequent robust and enduring spread of Sinitic was attributed by Pulleyblank (1983, 413-16) to this monopoly on writing in East Asia that had been acquired by this particular early language community.

4 Creole and Creoloid

What we now call Middle Chinese, and what Bernard Karlgren called "Ancient Chinese", was first reconstructed by Karlgren (1915; 1920, 1922; 1929). Edwin George Pulleyblank (1970; 1971; 1984; 1991) provided a more refined reconstruction of Middle and Early Middle Chinese, and William Baxter (1992) assumed a reconstruction of Middle Chinese in his Old Chinese reconstruction. Afterwards, Karlgren (1923; 1933; 1957) set himself to the reconstruction of what he termed "Archaic Chinese", or what we now call Old Chinese.[2]

On a principled level, Coblin and Norman (1995) and Coblin (1995) raised fundamental epistemological questions concerning the very nature of the language reconstructible by the means employed by scholars of Old Chinese. In this respect, the updated reconstruction of Old Chinese presented by Baxter and Sagart (2014) has likewise been criticised from the epistemological point of view by Harbsmeier (2016), but also for errors of factual detail (Ho 2016). Other noteworthy reviews include List et al. (2017) and Hill (2017).

Over time, the various models of reconstructed Old Chinese have exhibited a convergent tendency, and today the reconstructed language presently looks much more like just another Trans-Himalayan language, although with far fewer morphological processes reconstructed for Sinitic grammar than those observed in the languages of other Trans-Himalayan subgroups such as rGyalrongic, Kiranti, Nungish, Qiāngic, Kachinic, Brahmaputran, Mizo-Kuki-Chin, Dhimalish, Gongduk, Black Mountain Mönpa and Magaric. Similar to morphological processes found in other Trans-Himalayan languages, Middle Chinese verbs exhibited morphological alternations in their stem finals of the type /-k ~ -ŋ/, /-t ~ -n/ and /-p ~ -m/, and this ancient mor-

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2 Major contributions to our understanding of Old Chinese phonology were provided by Sergej Evgen'evič Jaxontov (1959; 1965), Edwin George Pulleyblank (1962; 1963; 1973a; 1973b), Lǐ Fāngguì (1971; 1974; 1976; 1983), Axel Schüßler (1987), Sergej Anatol'evič Starostin (1989), William Baxter (1992; 1995) and Sagart (1999).

phophonology is preserved in the form of polyphonic readings of Chinese characters in the 8th century *Tángyùn* and in the *Guǎngyùn*, a Sòng dynasty version of the *Qièyùn* compiled in the late 10th and early 11th century. These polyphonic readings were described by Maurice Courant (1903), who recorded their modern Mandarin reflexes. Benedict claimed that

> we are justified in assuming that alternations of this type were the result of assimilation to verbal suffixes which had later been dropped (note the parallelism with verb paradigms in Bahing and many other Tibeto-Burman languages). (1972, 156-7)

The Old Chinese alternations exhibited in the two different readings of ideograms in sets identified by Courant (1903) and later adduced by Benedict (1972, 156) are precisely the type of regular morphophonological alternation manifested by the various classes of verb stem in Kiranti languages such as Limbu and Dumi (van Driem 1987, 71-4; 1993, 91-118). The morphological alternations of such Old Chinese doublets are evidently cognate with the Kiranti phenomenon of regularly alternating verb stems conditioned morphophonologically by a following suffix. Ernst Pulgram, who regarded linguistic palaeontology to be an epistemologically "altogether improper" endeavour, offered students of historical linguistics the following dose of realism with regard to the reconstruction of proto-languages:

> if one were to reconstruct the proto-language of the modern Romanic languages, ignoring for the sake of the experiment that it is available in the form of ancient Latin of one kind or another, one could neither reconstruct the entire Latin vocabulary as we know it to have existed (a number of Latin words are not continued in any Romanic dialect), nor could one, from the evidence of the living Romanic dialects, reconstruct a language of more than three cases, or guess the existence of deponent verbs, or discover that at least one kind of Latin, the Classical Latin of metric poetry and possibly prose, had significant vocalic quantity, and so forth. Indeed the shape of every reconstructed form is entirely dependent on the type and amount of evidence available: that is, a Proto-Indo-European form reconstructed from Sanskrit and Hittite will be different from what it would be if the records came from Slavic and Germanic. (1961, 19)

In the Trans-Himalayan language family, it is quite conceivable therefore that Old Chinese had suffixes akin to the Proto-Kiranti verbal endings *<-u>, *<-ɛ> or *<-i> and verb forms analogous to, say, Limbu *tak* 'it will coagulate' vs *taktɛ* 'it has coagulated', or *hiptu* 'he struck him' vs *ahip* 'he will strike us', or *im* 'he will sleep', *ipsɛ* 'he has

fallen asleep'. Since the Chinese writing system was apparently originally used as a logographic script, in which each character represented a word, the flexional processes operative in the language may not have been represented. It would not have been an obvious or necessary choice to those who utilised an ideogrammatic or logographic system of writing explicitly to represent desinences or stem alternations. Even modern alphabetical scripts like Arabic and Hebrew often do not specify grammatical information of this kind. An ideogrammatic script such as that used by the Western Zhōu might have been used to represent derivational, lexical distinctions like 'set' vs 'sit', but not to represent flexional distinctions like 'sit' vs 'sits' vs 'sat'.

Just such a type of imperfect graphic distinction may be what is reflected by the Middle Chinese polyphonic readings preserved in the *Tángyùn* and *Guǎngyùn* as described by Maurice Courant (1903). Such doublets generally show no semantic differentiation, and, when different meanings are recorded, these appear to represent different senses of a single lexical meaning. These doublets characteristically involve alternation between a stem with a plosive final and a stem ending in the corresponding homorganic nasal, i.e. /-k ~ -ŋ/, /-t ~ -n/ and /-p ~ -m/. This pattern corresponds to a prevalent type of Kiranti verb stem alternation between an ante-vocalic and an ante-consonantal form, i.e. /-ks ~ -ŋ/, /-ts ~ -n/ and /-ps ~ -m/.

Such old polyphonic readings of certain characters, which may reflect the vestiges of ancient morphological processes, have not been systematically incorporated into the newest reconstructions of Old Chinese. Similarly, the Old Chinese morphological phenomena that may have been cognate to Kiranti verb stem alternations involving final pairs such as /-kt ~ -k/, /-ŋs ~ -ŋ/, /-pt ~ -t/, etc., may have been lost without leaving any trace in either the writing system or in the tradition of polyphonic readings. The historical developments of Chinese phonology would have led to the loss of flexional suffixes and also have eradicated any trace of the second element in the final clusters of ante-vocalic forms of the verb stems.

Not only do the Chinese doublets correspond to the most prevalent pattern of verb stem alternation in Kiranti languages, a number of the doublets adduced by Courant have obvious Limbu cognates, such as 脅 Middle Chinese *hhyap* [xié] ~ *hhyám* [xiàn] "contraindre, mettre obstacle" (Courant 1903, 70), Old Chinese *qʰ<r>ep ~ *qʰ<r>em "sides of the body, throng, constrain" vs Phedāppe Limbu <sɔps ~ sɔm> "make thin by pressing together on both sides, deflate, e.g. a football; constrain by pressing together at the sides", 厴 Middle Chinese *ḥyap* [yè] ~ *ḥyám* [yàn] "réprimer" (Courant 1903, 70), Old Chinese *ʔep ~ *ʔem "grasp" vs Phedāppe Limbu <ips ~ im> and Pāñcthare Limbu <e:ps ~ e:m> "press (e.g. oil)". With Baxter (1992) and Courant (1903) in hand, Tej Mān Āngdembe and I were in the process of uncovering numerous cognates of this nature between

Old Chinese and Limbu when sudden illness cut short Āngdembe's sojourn in Leiden before his subsequent death, years later in eastern Nepal. This matter will hopefully be pursued one day with, and also by, speakers of the conservative Phedāppe variety of Limbu.

Lepsius' view of the Chinese writing system, whereby an ideogram may have represented various inflected forms of a single word, and not just a morphologically inert root or stem, later inspired Bernhard Karlgren not only to undertake the reconstruction of Old Chinese in accordance with the principles of the comparative method but also to conceive of Old Chinese as a "langue flexionelle" (1920). The total picture which emerges is of a language which lost its morphology in a cataclysmic event, at least on the sometimes grindingly slow time scale of language change. Many scholars have consequently proposed that Sinitic arose either as a full-fledged creole or as a Trans-Himalayan *lingua franca* when an ancient pre-Sinitic population migrated to the North China plain, perhaps at the dawn of the Zhōu period.[3] The decay of Old Chinese affixational morphology, as described by Pulleyblank (2000), was a natural consequence of this process of creolisation on the North China plain.

New genetic data (Zhao et al. 2011; 2014; 2015; Chen et al. 2019) have lent support to the old hypothesis that Sinitic acquired creoloid characteristics *sensu* Platt (1997) when the language came to be used as a *lingua franca* between ethnolinguistically divergent populations after an ancient Trans-Himalayan language community migrated to settle the area of the Yellow River basin. As I argue in detail in a forthcoming article, the earliest Sinitic or Old Chinese arose when this Trans-Himalayan *lingua franca* was adopted by the Yenisseian and Altaic language communities whom the Proto-Sinitic speakers encountered and assimilated.

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[3] Poppe 1965; Benedict 1972; Hashimoto 1976a; 1976b; 1980; 1986; Ballard 1977; 1979, Norman 1982; Comrie 2008; DeLancey 2011.

Contrary to what I reported previously (*pace* van Driem 2017), DeLancey did not intend to suggest that Sinitic arose when a Trans-Himalayan *lingua franca* was adopted by an indigenous Altaic population, as some others have done. Rather, DeLancey clarifies that his intent was to propose "that the *lingua franca* of the early dynasties – certainly Xià, probably Shāng – was a Southeast Asian type creole, probably mostly based on Hmong-Mien, and that Sinitic was born of the imposition of an invasive Tibeto-Burman language – probably that of the Zhōu conquerors – on that substrate. Any Altaic influence has to come much later" (Scott DeLancey, email of 15 September 2017).

5 Lexicostatistics Disguised as 'Phylogenetics'

Relexification and creologenesis are known to pose a fundamental problem to lexicostatistics (Wittmann 1973; 1994), as was even conceded by the zealous lexicostatistician Dyen, who infamously claimed that the application of historical linguistics by the comparative method to Austronesian languages was "not feasible" (Dyen et al. 1992, 3). The historically new English-based creoles Tok Pisin and Sranan Tongo are already less than 70% English (Wurm, Mühlhäusler 1985; van den Berg 2013). More drastically, Michif is genetically Plains Cree but lexicostatistically a Romance language (Rhodes 1977; Bakker 1992), and Copper Island Aleut is genetically Slavic but lexicostatistically Aleut (Menovščikov 1968; 1969; Golovko, Vakhtin 1990; Golovko 1994). Linguistic evidence has suggested that Brahmaputran languages of the Trans-Himalayan language family are likewise likely to have undergone a process of creolisation (DeLancey 2014). The linguistic hypotheses that both Sinitic as well as Brahmaputran arose through creolisation therefore highlight the irrelevance of two recent lexicostatistical outcomes.

The two lexicostatistical exercises in question yielded two utterly different trees. Zhang et al. (2019) generated a bifurcate "Sino-Tibetan" tree, whereas Sagart et al. (2019) came up with a Trans-Himalayan tree, showing a first purported branching between a Sino-Brahmaputran branch and the rest. Although the latter result is at variance with the Sino-Tibetan model, Sagart et al. (2019) save face by labelling the resultant Trans-Himalayan tree "Sino-Tibetan" nonetheless. Crucially, neither paper adduces any historical linguistic evidence for the branches of their trees. Instead, both studies employ special pleading to create the impression that the outcomes of their calculations constitute "phylogenetic" evidence, thereby obscuring the nature of their methodology by confusing tools with methodology.

Bayesian models are mathematical tools which happen to be termed "phylogenetic" because they generate tree diagrams for any set of data, even if no tree structure obtains between these data. The methodology utilised by Zhang et al. (2019) and Sagart et al. (2019) is lexicostatistics on the basis of precious little lexical material. Lexicostatistics is not statistics and lacks statistical validity. Merely unleashing sophisticated mathematics onto an exceedingly limited and highly selective dataset fails to transform lexicostatistics into an altogether different methodology that could merit another label such as "phylolinguistics" (van Driem 2020). Neither set of authors has addressed the sea of methodological literature in historical linguis-

tics demonstrating the invalidity of lexicostatistics,[4] and the caveats and shortcomings hold *a fortiori* when this approach is applied to languages which may have arisen through creolisation.

Embarrassingly, Zhang et al. (2019) misunderstand lexicostatistics to be "an extension of the comparative method" and echo Russell Gray's false claim regarding the methodological deficiencies of the approach by asserting that in some unexplained way Bayesian maths "circumvent these limitations". Zhang et al. (2019) likewise misunderstand and consequently misrepresent the Fallen Leaves model of the Trans-Himalayan language family as positing "that there are no clearly discernible internal relationships among the primary subgroups of the Sino-Tibetan language family". In fact, the

> Fallen Leaves model is no definitive phylogeny by definition. Though agnostic about higher-order subgrouping, the model does not deny that there is a family tree whose structure must be ascertained by historical linguistic methods. (van Driem 2015, 144)

Rather, lexicostatistics has always just afforded an easy way out (Dyen 1965; 1973a; 1973b; 1973c) when confronted with the challenge of identifying the shared innovations, nested innovations and sound laws that define branches in linguistic phylogeny. Research tasks of the historical linguist that necessitate knowledge of the languages in question, such as distinguishing inherited morphological systems from later accretions to such systems, are also avoided by lexicostatisticians. By contrast, real progress can be made by rendering explicit the multifarious types of historical linguistic judgements, insights and techniques, distinguishing divergent degrees of cognacy and taking into account other linguistic complexities that need to be understood and built into any mathematical model in order to have a computer be able to do what only an historical linguist can do (e.g. List 2019; Fellner et al. forthcoming).

Finally, Zhang et al. (2019) and Sagart et al. (2019) confuse processes that transpired at different time depths in prehistory and advance simplistic interpretations of the archaeological record. Their anachronistic interpretation of archaeology is the sole reason provided by Zhang et al. (2019) for positing an *Urheimat* in the Yellow River basin, for in their supplement they admit that even their geographically biased lexicostatistical sampling actually predicts an *Urheimat* in southwestern China, which in each of their three maps is depicted as comprising the Indian state of Arunachal Pradesh. The nationalist narrative in China encourages anachronistic interpreta-

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4 Sauvageot 1951; Hoijer 1956; Bergsland 1958; Cowan 1959; Fodor 1961; Bergsland, Vogt 1962; Chrétien 1962; Guy 1994; Pereltsvaig, Lewis 2015.

tions of archaeology, such as Zhang et al. (2019), whereas the meagre sampling of vocabulary selected by Sagart et al. (2019) just so happens inexorably to generate the outcome that Sagart, enthused by his recent discovery of Burlings' work on Garo (2004), told me in the Spring of 2004 at the Couvent des Récollets that he then suspected that he would find one day.

The now obsolete Sino-Tibetan model consisted of two branches, one of which was 'Sino-Daic' and the other a pinioned 'Tibeto-Burman' subfamily, neither of which was a valid taxon. In fact, the historical reason for adherents of the Indo-Chinese or 'Sino-Tibetan' paradigm to group Chinese and Thai together in the same group – at variance with the Tibeto-Burman or Trans-Himalayan model presented by von Klaproth (1823) – is firmly rooted in the racist language typology of the 19th century. Sino-Tibetan has thus always represented a false family tree. When the Kradai languages were removed from 'Sino-Tibetan', the reduced tree still represented a false phylogeny by sleight of relegating all non-Sinitic languages to a single subgroup, which the Sino-Tibetanists misleadingly labelled 'Tibeto-Burman'.

This truncated taxon, with Sinitic removed, was not at all the original Tibeto-Burman language family that had been correctly identified by von Klaproth in 1823. Tellingly, no linguist has yet adduced any historical linguistic evidence that could unite this supposedly subordinate taxon into a single branch within the family tree. The Indo-Chinese or Sino-Tibetan model was assailed by scholars who proposed alternative language family tree models under names such as Sino-Burman (Ramstedt 1957), Sino-Himalayan (Bodman 1973; 1980) and Sino-Kiranti (Starostin 1994). Historical linguistics as practised by 'Sino-Tibetanists" remains methodologically in such a sorry state, as shown by van Driem (2018) and Fellner and Hill (2019a; 2019b), that proponents of the model have, for want of historical linguistic evidence, resorted to lexicostatistics in a last-ditch attempt to salvage their family tree.

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Proto-Dravidian Origins of the Kuṛux-Malto Past Stems

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Abstract   In the closely related Dravidian languages Kuṛux and Malto, the verbs have lexically determined past stems, formed from the verb bases with various suffixes such as -y, -c, -j, -s, -t, -ṭ and -ḍ. There are also past stems with zero, with or without gemination of the final consonant. The past suffixes *-t, *-tt, *-i, *-c, *-cc and *-nt are reconstructed for Proto-Dravidian, and we examined if the Kuṛux-Malto past stems are explainable from them. We found that some past stems are derived from affixation of Proto-Dravidian *-t. The close distributional resemblance of Kuṛux-Malto -y to South Dravidian *-i(ṇ) suggests their common origin. We also confirmed that the suffixes *-c and *-cc need to be posited for Proto-Kuṛux-Malto, while there are no clear reflexes of the suffixes *-tt and *-nt. Since *-c and *-cc are also found in the converb formation of South-Central Dravidian, they might be a shared innovation. The geminating past, which is probably an innovation of Kuṛux-Malto, gave rise to the new, productive past stem class with zero.

Keywords   Proto-Dravidian. Kuṛux. Malto. Past stem. Comparative reconstruction.

1   Introduction

Kuṛux (kuṛux or kũṛux, also known as Oraon) and Malto are Dravidian tribal languages spoken mainly in the Indian states of Jharkhand, Chhattisgarh, Odisha and West Bengal, hundreds of kilometres away from the nearest sister languages, Gondi and Kui. While Kuṛux and Malto share nearly a half of the basic vocabulary and form a close subgroup, they are divergent from the other Dravidian subgroups, i.e. South Dravidian, South-Central Dravidian, Central Dravidian and Brahui. Kuṛux and Malto were once grouped under 'North Dravidian' with Brahui, but McAlpin (2003) and Kobayashi (2022) cast doubts on the putative shared innovations of Kuṛux-Malto and Brahui, i.e. split of Proto-Dravidian velar stops into velar and uvular stops, and the finite past with *-k, respectively.

Each verb base of Kuṛux and Malto has a past stem formed with a lexically determined past suffix. The past suffixes of Kuṛux and Malto do not encode transitivity, which is signalled by a geminated stop in some other Dravidian languages, e.g. Tamil *kiẓi-nt-* 'to be torn' vs *kiẓi-tt-* 'to tear' < *-ntt (*DEDR* 1581); Telugu *kāgu* 'to be heated' vs *kācu* 'to heat' (*DEDR* 1458) where *c* is traced back to the palatalised past suffix *-tt (Krishnamurti 2003, 193). A finite verb consists of a verb base or a past stem, a tense suffix, and a pronominal suffix signalling agreement in person, number and gender with the nominative subject. A finite past form contains the past tense suffix -*k* after the past stem in the first and second persons; since a past stem usually contains a past suffix, a finite past is often doubly characterised for the past tense in the first and second persons. Kobayashi and Tirkey (2017, 121-5) grouped the verbs into four classes by the synchronic criteria of the past stem formation. In this paper, we will trace the origins of the Kuṛux and Malto past stems by comparing them with those in other Dravidian languages, and try to classify the Kuṛux and Malto verbs by the historical origins of their past stems. For each Dravidian language, there are unique criteria of classifying the past forms, and there is no consensus on the number of the conjugation classes in Proto-Dravidian (Steever 2020, 22). However, the irregular and non-uniform alternation patterns some languages show in the past forms provide valuable evidence for reconstruction and subgrouping. Since the Tamil-Malayalam-Toda-Kota-Koḍagu subgroup (henceforth 'Tamil-Koḍagu subgroup') of South Dravidian shows the richest variety of past stems, we will compare the past stem formations of Kuṛux-Malto primarily with those of this subgroup. In Kobayashi (2011, 41), we posited *-t, *-c, *-cc, *-nc, *-y, gemination, and

zero as the past stem types of Proto-Kuṟux-Malto. Kobayashi (2022, 13) argued that the Kuṟux-Malto past tense suffix *-k < PDr. *-kk was originally a predicative adjective suffix also found in Pengo. In this paper, we argue that the Kuṟux-Malto past stems are grouped into four classes based on their suffixes, i.e. two inherited classes, the *-t past and the *-y past; and two classes that were extended by innovation, the *-c/*-cc past and the zero past.

2   The Past Stems of Kuṟux-Malto

2.1   Coronal Past Stems

Kuṟux and Malto have past stems ending in a coronal obstruent, i.e. *t*, *ṭ*, *d*, *ḍ* or *s*, grouped under Class 4 in Kobayashi and Tirkey (2017, 124). This is a closed class, and the past stems of this class show diverse final consonants. Most verb bases of this group end in the rhyme -V̆C, but (10) Kṟx. *põyy-* and (11) Mlt. *pūn-* have -VXC (= VVC or VCC) rhymes.

(1)   Mlt. *ãh-*/ *at-* 'to beat the drum', Kṟx. *ass-*/ (*assy-*) 'to play on, to sound', *DEDR* 320, Tamil *aṟai*/ *-nt-* 'to beat' etc. From PDr. *aṯ-*/ *aṯ-t-. Malto *h* from PDr. *ṯ* is also found in (8) *teh-* and (9) *peh-*.

(2)   Kṟx. *uy-*/ *uss-* 'to plough', Mlt. (*us-*/) *us-*, (*usy-*) 'to turn up the soil', *DEDR* 688, Tamil *uẕu*/ *-t-* 'to plough', etc. From PKM *uy-*/ *us- < *uy-*/ *uc- < *uy/ *uy-t- < PDr. *uẕ/ *uẕV-t- (PDr. *ẕ > PKM *y as in *kiyyā* from PDr. *kiẕ-V, *DEDR* 1619, Pfeiffer 2018, 376, Kobayashi 2020, 478)

(3)   Kṟx. *on-*/ *oṇḍ-*, Mlt. *ōn-*/ *oṇḍ-* 'to drink'; *DEDR* 600, Tamil *uṇ*/ *uṇṭ-* 'to drink', Konḍa *uṇ-*/ *uṭ-* 'to drink', Parji *un-*/ *und-* 'to drink', etc. From PDr. *uṇ-*/ *uṇ-t-* (Subrahmanyam 1971, 196)

(4)   Mlt. *qal-*/ *qaḍ-* 'to steal', Kṟx. (*xaṟʔ-*/) *xaḍḍ-*, *DEDR* 1372, Tamil *kaḷ*/ *kaṭṭ-* 'to steal', Gondi *kallānā* id., Brahui *xalling* 'to lift (cattle)', etc. From PDr. *qaḷ-*/ *qaḷ-t-* (cf. Tamil *kaṭṭ- < *kaḷ-tt-*). Since Kuṟux also has words reflecting *qaḷ-* such as *xalb* 'thief', Kṟx. *xaṟʔ-* is probably a back-formation from the past stem *xaḍḍ-* after the model of (76) *eṟʔ-*/ *eḍḍ-* 'to invite'.

(5)   Kṟx. *xoy-*/ *xoss-* 'to mow', Mlt. *qoy-*/ *qos-* 'to reap', *DEDR* 2119, Tamil *koy*/ *-t-* 'to pluck, cut', Konḍa, Pengo *koy-*/ *koyt-* 'to reap, cut', etc. From PKM *qoy/ *qoc- < PDr. *qoy-*/ *qoy-t-* (cf. (68) Kṟx. *xoy-*/ *xojj-*, Mlt. *qoy-*/ *qoj-* 'to measure', *DEDR* 2227).

(6)   Kṟx. *xot-*/ *xott-* 'to cut by striking', Mlt. (*qõh-*/) *qot-* 'to cut down', *DEDR* 2091, Tamil *kottu*/ *-i* 'to hoe', Konḍa *kot-*/ *kott-* 'to peck', etc. From PDr. *qott-*/ *qott-t-*.

(7)   Kṟx. *kuṟ-*/ *kuṭṭ-* 'to heat', Mlt. *kuṟ-*/ *kuṭ-* 'to burn, roast', *DEDR* 2654, Tamil *cuṭu*, (*cuṭuv-*)/ *cuṭṭ-* 'to be hot', Telugu *cū̃ḍu* 'to burn', Kolami *suḍ-*/ *suṭṭ-* 'to cook', etc. From PDr. *k̂uṭ-/ *k̂uṭ-t- (Subrahmanyam 2013, 397).

(8)   Mlt. *teh-*/ *tet-* 'to knit, weave', Kṟx. *tess-*/ (*tissy-*) 'to plait', *DEDR* 3446, Tamil *teṟṟu*/ *-i* 'to become intertwined', Kannada *tettu* 'to intertwine'. From PDr. *teṯ-/ *teṯ-t-.

(9)   Kṟx. *pes-*/ *pett-* 'to pick up', Mlt. *peh-*/ *pet-* 'to take up'. *DEDR* lists the latter under 4446, Tamil *piṟakku*/ *-i* 'to heap, pile up', etc., but it should rather be listed with Kṟx. *pes-* under *DEDR* 4423, Tamil *peṟukku*/ *peṟukki-* 'to gather, to pick up', Koṇḍa *peṟ-*, *peRt-* 'to pick, pick up', Parji *ped-*/ *pett-* 'to pick up' etc. From PDr. *peṯ-/ *peṯ-t-.

(10)   Kṟx. *põyy-*/ *poss-*, Mlt. *poy-*/ *pos-* 'to rain', *DEDR* 4407, Tamil *pey*/ *peyt-*, Koḍagu *poyy-*/ *pojj-* '(rain) rains', Telugu *pōyu* 'to pour', Kolami *paiyeng* 'to pour', etc. From PDr. *poy-/ *poy-t-.

(11)   Mlt. *pūn-*/ *puṇḍ-* 'to put on one's own neck', *DEDR* 4361, Tamil *pūṇ*/ *pūṇṭ-* 'to wear', Koṇḍa *pūṭ-*/ *-t-* 'to fasten bullocks to the plough, yoke', etc. From PDr. *pūṇ-/ *pūṇ-t- with pre-cluster vowel shortening (Subrahmanyam 2013, 398; Kobayashi 2020, 474).

(12)   Kṟx. *nal-/* (*naḷy-*), Mlt. *lal-*/ *laḍ-* 'to dance', *DEDR* 3612, Kota *nayḷ-*/ *naḷc-* 'to play', Kannada *nali* 'to dance', etc. From PDr. *naḷ-/ *naḷ-t-.

All the past stems of these verbs can be explained by positing the Proto-Dravidian past suffix *-t. Since there are cognates which take *-t in South Dravidian as well, such as (3) Tamil *uṇṭ-* and (11) Tamil *pūṇṭ-*, at least some of the Kuṟux-Malto past stems with *-t can be reconstructed for Proto-Dravidian.

2.2   Past Stems with *-y*

In about one third of the verbs, the past stem is formed by adding *-y* to the verb base (Class 1 in Kobayashi, Tirkey 2017, 122). In Kuṟux, all verbs belonging to this class have the rhyme VXC. In a few verbs, such as Kṟx. *pāk-*/ *pakky-*, Kṟx. *īc-*/ *iccy-* 'to pull out', Kṟx. *ōl-*/ *ully-* 'to burn', Kṟx. *xēnd-*/ *xindy-* 'to buy', (15) Mlt. *ēk-*/ *eky-*, the long base vowel is shortened before *-y* < *-i, probably by Krishnamurti's rule that a long vowel of a (C)VC base is shortened before a vowel-initial suffix (Zvelebil 1967, 87).

(13)   Kṟx. *att-*/ *atty-* 'to put on', Mlt. *at-*/ *aty-* 'to wear', *DEDR* 145, Tamil *attu*/ *-i* 'to unite, to apply (as medicine)', Telugu *attu* 'to be attached or joined', Gadaba *atkap-* 'to mend, join'. From PDr. *att-/ *att-i-.

(14) Kṟx. *amb-/ amby-* 'to leave', Mlt. *amb-/ amby-* 'to forsake', *DEDR* 329, Tamil *aṉuppu/ -i*, Telugu *anucu, anupu*, Br. *hamping* 'to load up'. From PDr. *anVp-/ *anVp-i-.

(15) Kṟx. *ēk/ īky-* 'to walk', Mlt. *ēk-/ eky-* 'to go', *DEDR* 871, Tamil *ēku/ -i* 'to go, pass, walk', Telugu *ēgu* 'to go, proceed'. From PDr. *ēkk-/ *ēkk-i-.

(16) Kṟx. *oṟk-/ uṟky-* 'to strip a tree of its bark', *DEDR* 954, Tamil *oṭukku/ -i* 'to subjugate', Telugu *uḍugu, uḍuvu* to give up, etc. From PDr. *oṭVkk-/ *oṭVkk-i-.

(17) Kṟx. *kaṭṭ-/ kaṭṭy-* 'to cross', Mlt. *kaṭ-/ kaṭy-* 'to exceed', *DEDR* 1109, Tamil *kaṭa/ -tt-* 'to cross', Toda *kaṟt-/ kaṟty-* 'to take across', Telugu *kaḍacu* 'to pass, elapse', Parji *kaḍp-/ kaḍt-* 'to cross'. From PDr. *kaṭṭ-/ *kaṭṭ-i-.

(18) Kṟx. *kitt-/ kitty-* 'to rot', Mlt. *kit-/ kity-* 'to rot', *DEDR* 1606, Kota *kit-/ kity-* 'to rot', Telugu *cīku* 'to rot', Kolami *sivk-/ sivikt-* 'to become rotten'. From PDr. *kitt-/ *kitt-i-.

(19) Kṟx. *kuss-/ kussy-* 'to butt', *DEDR* 1850, Tamil *kuṟṟu/ -i* 'to pound', Gadaba *kurk-/ kuruk-* 'to beat like a carpet', etc. From PDr. *kuṯ-/ *kuṯ-i-.

(20) Kṟx. *xapp-/ xappy-* 'to swallow', *DEDR* 1222, Tamil *kappu/ -i* 'to gorge', Pengo *kap-/ -t-* 'to bite', etc. From PDr. *qapp-/ *qapp-i-.

(21) Kṟx. *xalx-/ xalxy-* 'to be wet and muddy', Mlt. *qalɢ-/ qalɢ-* 'to disturb (as water)', *DEDR* 1303, Tamil *kalaṅku/ -i* 'to be confused', Toda *kalx-/ kalxy-* 'to be stirred up', Telugu *kalãgu* 'to be in agitation'. From PDr. *qalVq-/*qalVq-i-.

(22) Kṟx. *xāy-/ xayy-* 'to become dry', Mlt. *qāy-/ (qāy-)* id., *qayek* 'dry', *DEDR* 1458, Tamil *kāy/ -nt-* 'to grow hot, to be dried up', Maṇḍa *kāy-* 'to warm oneself', Naiki (Chanda) *kāy-* 'to be hot', *kāp-* 'to heat', etc. From PDr. *qāy-/ *qay-i-. This might rather belong to the geminating past (§ 2.5 c).

(23) Kṟx. *xett-/ xetty-* 'to shake off', Mlt. *qet-/ qety-* 'to dust, to beat the jungle', *DEDR* 1954, Koḍagu *kett-/ ketti-* 'to gore with horns', Kannada *kettu* 'to quiver'. From PDr. *qett-/ *qett-i-.

(24) Kṟx. *xoṭṭ-/ xuṭṭy-* 'to break', Mlt. *qoṭ-/ qoṭy-* 'to break', *DEDR* 2063, Tamil *koṭṭu/ -i* 'to beat', Telugu *koṭṭu* 'to beat', Parji *koṭṭ-* 'to strike with an axe', etc. From PDr. *qoṭṭ-/ *qoṭṭ-i-.

(25) Kṟx. *tīr-/ tīry-* 'to lag behind', Mlt. *tīr-/ tīry-* 'to be off, to go away', *DEDR* 3278, Toda *ti·r-/ ti·ry-* 'to be ended', Telugu *tīru* 'to be finished', Naikṟi *tīr-* 'to be finished'. From PDr. *tīr-/ *tīr-i-.

(26) Kṟx. *tupp-/ tuppy-* 'to spit', Mlt. *tup-/ tupy-* 'to spit', *DEDR* 3323, Tamil *tuppu/ -i*, Pengo *cup-/ -t-* 'to spit'. From PDr. *tupp-/ *tupp-i-.

(27) Kṛx. *tumm-*/ *tummy-* 'to sneeze', Mlt. *tum-*/ *tumy-* 'to sneeze', *DEDR* 3336, Tamil *tummu*/ *-i*, Telugu *tummu* 'to sneeze', Naiki (Chanda) *tum-* 'to sneeze'. From PDr. *tum-/ *tum-i-.

(28) Kṛx. *temb-*/ *timby-* 'to beg', *DEDR* 3431A, Tamil *tevvu*/ *-i* 'to beg hard', Telugu *dēvurincu* 'to beg humbly'.

(29) Kṛx. *term-*/ *tirmy-* 'to roll something upon itself', *DEDR* 3246, Tamil *tirumu*/ *-i* 'to turn', Telugu *trimmaru* 'to wander, rove, ramble', etc. From PDr. *terVm-/ *terVm-i-.

(30) Kṛx. *nan-*/ (*nañj-*), Mlt. *nan-*/ *nany-* 'to do', *DEDR* 3589, Tamil *naṇṇu*/ *-i* 'to do, make'. From PDr. *naṇ-/ *naṇ-i-.

(31) Kṛx. *nāb-*/ *nāby-* 'to thresh rice', *DEDR* 3769, Tamil *nēmpu*/ *-i* 'to winnow', Telugu *nēmu* 'to winnow, sift'.

(32) Kṛx. *nunx-*/ *nunxy-* 'to swallow', Mlt. *nunɢ-*/ *nunɢ-*, *DEDR* 3697, Tamil *nuṅku*/ *-i* 'to swallow, devour', Brahui *nughushing* 'to swallow, devour'. Malto tends to avoid the sequence of *q/ɢ* and *y*. From PDr. *nunVq-/ *nunVq-i-.

(33) Kṛx. *pāṛ-*/ *pāṛy-* 'to sing', Mlt. *pāṛ-*/ *pāṛy-* 'to sing, to bewail', *DEDR* 4065, Tamil *pāṭu*/ *-i*, Kolami pa·ḍ-/ pa·ḍt- 'to sing', Parji *pāḍ-* 'to sing'. From PDr. *pāṭ-/ *pāṭ-i-.

(34) Kṛx. *pūx-*/ *pūxy-* 'to swell', (Mlt. *pūɢ-*/ *pūɢ-* 'to swell'), *DEDR* 4469, Tamil *poṅku/ -i* 'to boil up', Telugu *poṅgu* 'to bubble up, boil', Konḍa *pog-/ -it-* 'to boil and overflow', Naiki (Chanda) *phugay-* 'to swell'.

(35) Kṛx. *batt-*/ *batty-* '(of liquids) to decrease', Mlt. *bat-*/ *baty-* 'to dry up', *DEDR* 5320, Tamil *vaṟṟu/ -i* 'to grow dry', Telugu *vaṭṭu* 'to be dried up', Ollari *vaṭ-* 'to dry, wither', Brahui *bārring* 'to become dry'. From PDr. *vaṭṭ-/ *vaṭṭ-i-.

(36) Kṛx. *bekkh-*/ *bikkhy-* 'to be choked', Mlt. *beq-*/ *beq-* 'to wrestle, to be choked', *DEDR* 5383, Tamil *vikku/ -i-* 'to hiccup', *vikku* 'hiccup', Telugu *vekku* 'to hiccup, sob', Kolami *veksi* 'hiccup'. From PDr. *veqq-/ *veqq-i-.

(37) Kṛx. *maṛx-*/ *maṛxy-* 'to get dirty', (Mlt. *maṛɢ-*/ *maṛɢ-* 'to become black') *DEDR* 4750, Tamil *maẓuku/ -i-* 'to become blunt', Telugu *mraggu* 'to die, perish'.

(38) Kṛx. *mucc-*/ *muccy-* 'to close', Mlt. *muc-*/ *mucy-* 'to close', *DEDR* 4915, Tamil *muccu/ -i-* 'to cover', Gondi *muccānā* 'to wrap something round one's body', Pengo *muc-*/ *mucc-* 'to cover', Naikri *mus-* 'to cover', Brahui *must* 'shut, closed'. From PDr. *mucc-/ *mucc-i-.

(39) Kṛx. *muñj-* 'to finish', *DEDR* 4891, Tamil *muki-/ -nt-* 'to end', *muñcu/ -i-* 'to end', Telugu *mugiyu* 'to be finished', etc.

(40) Kṛx. *murr-/ murry-* 'to thunder', Mlt. *mur-/ mury-* 'to speak', *DEDR* 4973, Tamil *mu-ral-/ muraṉr-, muraṟṟu/ muraṟṟi* 'to make a sound, cry', Telugu *morayu* 'to sound, resound', Naikṛi *moray-* 'to sound'.

(41) Kṛx. *mulx-/ mulxy-* 'to sink', (Mlt. *mulɢ-/ mulɢ-* 'to dip in'), *DEDR* 4993, Tamil *muẓuku/ -i-* 'to bathe the entire body, to sink', Koṇḍa *muṛg-/ -it-* 'to be drowned, sink', Gadaba *mulg-* 'to immerse, be immersed'.

In the Dravidian languages with multiple past stem classes, Tamil also forms the past stems with *-i(ṉ)* when the verb base ends in a heavy rhyme or is multisyllabic, and ends in an obstruent or *v*. In fact, there are verb bases reflected in Kuṛux-Malto and the Tamil-Koḍagu subgroup that take the same suffix **-i* in both groups, such as (24) Kṛx. *xoṭṭ-*, Mlt. *qoṭ-* 'to break', (38) Kṛx. *mucc-* 'to close', Mlt. *muc-* 'to close' and (39) Kṛx. *muñj-* 'to finish'. Since Tamil has corresponding past stems with the cognate suffix *-i* in 21 out of the 28 verbs,[1] the distribution pattern as well as the suffix are reconstructible for Proto-Dravidian unless Kuṛux-Malto belongs to South Dravidian.[2]

2.3 Past Stems in *-c*

Many Kuṛux verb bases end in *ʔ*, which is deleted when flanked by two consonants. About 60% of verbs ending in *ʔ* form the past stems with the suffix *-c* (Class 2 in Kobayashi, Tirkey 2017, 123), while the rest have past stems with zero (§ 2.5). A small number of such verb bases, all basic words, end in *-Vʔ*, while the rest end in a consonant of various natural classes followed by *ʔ*.

a. Verbs with the rhyme Kṛx. *-Vʔ*

(42) Kṛx. *kheʔ-, khẽʔ-/ kecc-* 'to die', Mlt. *key-/ kec-* id., *DEDR* 2426, Tamil *cā/ cett-* id., Kannada *sāy* id., Parji *cay-/ cañ-* id., Brahui *kahing/ kask-* id., etc.

(43) Kṛx. *ciʔ-/ cicc-* 'to give', Mlt. *ciy-/ cic-* id., *DEDR* 2598, Tamil *ī/ -nt-* 'to give to inferiors', Kannada *ī/ itt-* 'to give', Telugu *iccu* id., Koṇḍa *sī-/ -t-* id., Parji *cī/ ciñ-* id., etc.

(44) Kṛx. *coʔ-/ cōc-* 'to rise', Mlt. *coy-/ cōc-* id., *DEDR* 2867, Koṇḍa *sō-/ sōt-* 'to start or set out', Pengo *hō-/ -t-* 'to come out', etc.

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[1] Out of the 101 Tamil basic verbs given in `https://ilearntamil.com/100-impor-tant-tamil-verbs/`, 43 take the past suffix *-i*. If we assume this to be the average ratio of the Tamil *-i* past, 21 out of 28 is significantly higher than average by Fisher's exact test at $p < .05$, even though we did not list all the putative cognates in *DEDR* here.

[2] Cf. Andronov (2003, 215), who comments in parenthesis: "There are no grounds, of course, to equate this vowel with the ancient Dravidian preterite suffix **-i-*".

(45) Kṛx. *neʔ-/ nēc-* 'to beg'. If this verb belongs to *DEDR* 3602, Tamil *naya/ -nt-* 'to long for', *nē* 'love', Telugu *naya* 'beauty', etc., it might be a denominative.

(46) Kṛx. *baʔ-/ bāc-* 'to say', *DEDR* 5514, Gondi *vehānā* 'to tell', Pengo *vec-/ vecc-* 'to speak', etc.

(47) Kṛx. *hoʔ-/ (h)occ-* 'to take', Mlt. *oy-/ oc-* 'to take', *DEDR* 984, Tamil *oy/ oynt-* 'to drag along', *uy/ uytt-* 'to carry, take away', Gondi *oy-/ ō-* ' to take, take away', Parji *uy-/ uñ-* 'to carry, take, take away', etc.

(48) Kṛx. *biʔ-/ bicc-* 'to be cooked', (Mlt. *bic-/ bic-* 'to be cooked'), *DEDR* 5517, Tamil *vē/ vent-* 'to burn, be hot', Koḍagu *bey-/ becc-* 'to cook (rice)', Telugu *vēg̃u* 'to be fried, grieve', Konḍa *vey-/ vet-* 'to be burned', Naiki (Chanda) *vey-* intr. 'to burn', Brahui *bāsing* 'to become hot', etc.

(49) Kṛx. *beʔ-/ (biccy-)* auxiliary 'to be', Mlt. *beh-, bey-/ behc-, becc-* 'to be', *DEDR* 4427 (isolated). This might belong to 5549, Tamil *vai/ -tt-* 'to put, place, keep', etc.

b. There are verbs that end in Kṛx. -VCʔ and Mlt. -VCy. (55) Kṛx. *ṭaŋgʔ-* has a -VCCʔ rhyme. A few verbs, such as (59) Kṛx. *barʔ-* vs Mlt. *bar*, do not end in -y in Malto.

(50) Mlt. *aḍy-/ aḍc-* 'to be enough', *DEDR* 78, Tamil *aṭu/ -tt-* 'to be fit, becoming', Konḍa *aṭ-/ -t-* 'to be able'

(51) Kṛx. *ōrʔ-/ ōrc-* 'to be warm weather', ?*DEDR* 656, Tamil *uru/ -tt-* 'to burn', Kannada *uri* 'to burn', Telugu *uriyu* intr. 'to burn', etc.

(52) Kṛx. *khapʔ-/ khapc-* 'to cover exactly', (Mlt. *qap-/ qapy-* 'to touch filth, to be soiled with'), *DEDR* 1221, Tamil *kappu/ -i-* 'to overspread'

(53) Kṛx. *khalʔ-/ khalc-* 'to dilute', *DEDR* 1299, Tamil *kala-/ -nt-* 'to mix', Kolami *kalay-/ -t-* 'to be mixed'

(54) Kṛx. *cīrʔ-/ cīrc-* 'to saw', (Mlt. *circ-/ circy-* 'to scratch'), *DEDR* 2491, Ma. *īruka* 'to saw, split',

(55) Kṛx. *ṭaŋʔ-/ ṭaŋgc-* 'to hang', *DEDR* 3478, Tamil *ṭoṅku/ -i-* 'to hang'.

(56) Kṛx. *ḍegʔ-/ ḍegc-* 'to leap, to jump', *DEDR* 2971, Kui *dega-/ degi-* 'to run, jump, leap'.

(57) Kṛx. *nāxʔ-/ nāxc-*, Mlt. *nēɢy-/ nēɢc-* 'to breathe', *DEDR* 3765, Parji *nēñ(j)* 'to breathe', etc.

(58) Kṟx. *paṭʔ-/ paṭc-* 'to be filled in', (Mlt. *paty-/ patc-* 'to catch up liquid in a vessel'), *DEDR* 4034, Kannada *paṭṭu* 'to seize, to be held', Telugu *paṭṭu* 'to hold, to catch' n. 'hold, grasp'.

(59) Kṟx. *barʔ-/ barc-*, imperative *bar-ā* 'to come', Mlt. *bar-/ barc-*, *DEDR* 5270, Tamil *varu/ vant-*, Telugu *vacc-/ rā-*, Gondi *waiānā/ wāt-*, imperative *waṛā*, Parji *ver-/ veñ-*, Brahui *banning/ bass-*, imperative *ba*.

This is a productive class, and contains many loanwords adapted from Indo-Aryan languages, such as the following:

(60) Kṟx. *dharʔ-/ dharc-* 'to hold', Mlt. *dary-/ darc-*. From *CDIAL* 6747, dhárati 'holds, keeps', Hindi *dharnā* 'to keep, place', Oriya *dharibā* 'to hold'.

(61) Kṟx. *guṇḍʔ-/ guṇḍc-*, Mlt. *guṇḍy-/ guṇḍc-* 'to reduce to powder'. From *CDIAL* 4193, guṇḍaka m. 'dust, powder', Bengali *gũṛā* 'powder, pounded', Oriya *guṇḍā* 'dust, powder'.

(62) Kṟx. *ghērʔ-/ ghērc-*, Mlt. *gēry-/ gērc-* 'to fence in'. From *CDIAL* 4474, *ghēr 'to make go round, surround', Hindi *ghernā* 'to surround', Bengali *gherā* 'to surround'.

(63) Kṟx. *jōṛʔ-/ jōrc-*, Mlt. *jōry-/ jōṛc-* 'to join'. From *CDIAL* 10496.4, *yōṭayati 'joins', Bengali *joṛā*, *juṛā* 'to join, fasten', Oriya *joṛibā*, Hindi *joṛnā*.

2.4   Past Stems in *-j*

There are a handful of bases that do not end in *ʔ* and form the past stems with the suffix *-j*. This suffix will be discussed in § 3.1 b).

(64) Kṟx. *man-/ mañj-* 'to become', Mlt. *men-/ meñj-* 'to become, to be', *DEDR* 4778, Tamil *maṉṉu/ -i-* 'to be permanent', Telugu *manu* 'to live, exist', Kuwi *man-/ macc-* 'to be', Gadaba *man-*, *maṇḍ-*, *manj-*, *mey-*, Parji *men-/ mett-* 'to be, to stay', Brahui *manning*, *mass* 'to become, to be'.

(65) Kṟx. *men-/ meñj-* 'to hear, ask', Mlt. *men-* (South and Central *mēn*)/ *meñj* id., *DEDR* 5516, Tamil *viṇā/ viṇāy-* 'to ask, hear', Telugu *vinu/ viṇṭ-* 'to hear, obey', Pengo, Manḍa, Kuwi *ven-/ vec-*, Parji *ven-/ vend-* 'to hear', Brahui *bining/ bing* 'to hear'.

(66) Kṟx. *pān-/ pañj-* 'to ripen', *DEDR* 4004, Tamil *paẕu/ -tt-* 'to ripen', Kannada *paṇṇu* 'to be produced', Telugu, Konḍa *paṇḍu* 'to ripen', Parji *paṇḍ-* '(plant) matures', *paṟñ-* 'to ripen'.

(30) Kṟx. *nan-/ nañj-*, Mlt. *nan-/* (*nany-*) 'to do', *DEDR* 3589, Tamil *naṉṉu/ -i* 'to do, make'.

(67) Mlt. *ĩh-/ iñj-* 'to pelt', Kṟx. (*iñjʔ-*)/ *iñj-*, (*iñjc-*) 'to shoot [arrows]'. *DEDR* lists this un-
   der 805, Tamil *ey-/ eyt-* 'to discharge arrows', Parji *ey-/ eñ-* 'to shoot'. Alternative-
   ly, this verb might belong to *DEDR* 859 Tamil *eṟi-/ eṟi-nt-* 'to throw, discharge' be-
   cause PDr. *ṯ (> Tamil *ṟ*) develops to Malto *h* in (1) *ãh-* and (9) *peh-* as well.

(68) Mlt. *il-/ ij-* 'to stand', Kṟx. *ilʔ-/ ill-*, *ilc-* 'to get up', *ijʔ-/ ijj-* 'to be upright', *DEDR* 3675,
   Tamil *nil/ niṉr-* 'to stand', Telugu *nilucu* id., Gondi (Koya) *nil-/ nitt-* to stand, Kola-
   mi *il-/ ilt-* 'to stand', etc.

(69) Kṟx. *xoy-* (*xōy-* in Grignard 1924, s.v.)/ *xojj-* 'to measure', Mlt. *qoy-/ qoj-*, *DEDR* 2227,
   Gondi *kāhtānā* 'to measure'. Cf. (5) Kṟx. *xoy-/ xoss-* 'to mow'.

2.5 Past Stems in Zero (Class 3)

About 40% of the verb bases that end in *ʔ* in Kuṟux, and a few verb
bases without *ʔ*, form the past stems without any suffix. If the base
ends in *ʔ* in Kuṟux, the past stem shows subtractive morphology of
-*ʔ*/ -0 as in (78) Kṟx. *kīdʔ-/ kīd-*. All the past stems of this type end in
-VXC, except *keb-/ kepp-* 'to scold', whose final consonant is geminat-
ed and devoiced in the past stem.

  From a functional point of view, there is no confusion of present[3]
and past forms, for it is possible to distinguish past and present forms
without the past stem suffix except when the past stem is used by it-
self. The finite past forms have the additional past tense suffix -*k* be-
tween the past stem and the pronominal suffix in the first and second
persons, and the pronominal suffixes of the past third-person forms
begin with *a* in contrast with those of the present that begin with *i*,
d or *n*, e.g. Mlt. *arɢ-ih* 'he digs' vs *arɢ-ah* 'he dug'. In Central Dravid-
ian languages such as Parji as well, the verb bases serve as the past
stems without alteration (Burrow, Bhattacharya 1953, 52).

a. In a few verbs with the rhyme -V̆CC, the verb bases and the past
stems are identical.

(70) Kṟx. *urkh-/ urkh-* 'to go out', Mlt. *urq-/ urq-* id. *DEDR* 668 (practically isolated).

(71) Kṟx. *ury-/ ury-* 'to rub off', *DEDR* 652, Tamil *uri/ -nt-* 'to peel, to strip off', Naikṟi
   uyp- 'to take off', etc.

(72) Kṟx. *poll-/ poll-* 'to be unable', Mlt. *pol-/ pol-* id. *DEDR* 4571, Tamil *poṉru, -i* 'to per-
   ish', Telugu *poliyu* 'to die', etc.

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3 I use the term 'present' instead of 'non-past' commonly used in Dravidian, because
Kuṟux and Malto have the future tense which contrasts with the present.

(73) Kṟx. *bañ̃-/ bañ̃-* 'to cover with tiles', *DEDR* 5532, Tamil *vey-/ -nt-* 'to cover, to roof', Gondi (Koya) *vēnc-* 'to cover (house)', Kolami *vēnz-/ vēnst* 'to thatch', Brahui *bēnifing* 'to thatch', etc.

(74) Kṟx. *boŋg-/ boŋg-* 'to run', Mlt. *boŋɢ-/ boŋɢ-* 'to run', *DEDR* 4473 (isolated).

b. In the Kuṟux forms of the following pairs, the verb bases end in *ʔ*, while the past stems are formed by deleting *ʔ* and geminating the consonant before it if the base has the rhyme -VCʔ, and just by deleting the *ʔ* if -VXCʔ (C ≠ r).

(75) Kṟx. *axʔ-/ akkh-* 'to know', Mlt. *āɢ-/ aqq-*, *DEDR* 17 (isolated etymon).

(76) Kṟx. *eṟʔ-/ eḍḍ-* 'to invite', (?Mlt. *eṟy-/ eṟc* 'to speak with fluency'), *DEDR* 786, Kolami *iḍḍ-/ iṭṭ-* 'to tell, show', etc.

(77) Kṟx. *esʔ-/ ess-* 'to break', *DEDR* 520, Tamil *iṟu- (iruv-)/ iṟṟ-* 'to break, snap', Telugu *iriyu* 'to be broken, smashed'.

(78) Kṟx. *kīdʔ-/ kīd-*, Mlt. *kīd-/ kīd-* 'to lay down', *DEDR* 1990, Tamil *cē-/ -tt-* 'to dwell, lie', Kannada *kē-/ kēd-* 'to lie down', Kolami *ke·p-/ ke·pt-* 'to make (child) to sleep'.

(79) Kṟx. *tindʔ-/ tind-, tindc-* 'to feed', Mlt. *tind-/ tind-* 'to feed by hand', *DEDR* 3263, Tamil *tiṉ-/ tiṉṟ-* 'to eat', Telugu *tinu/ tiṇṭ-* id., Gondi *tindānā* id., Pengo *tin-/ tic-* id., *tīc-/ tīcc-* 'to feed', Parji, Kolami, Naikṟi, Naiki (Chanda) *tin-/ tind-* 'to eat', etc.

(80) Kṟx. *pāxʔ-/ pāx(c)-* 'to open, to force open', *DEDR* 3808, Tamil *paku-/ pakk-* 'to split', Pengo *pag-/ pakt-* intr. 'to split'; *pak-/ -t-* tr. 'to split', Naiki (Chanda) *pay-* 'to break', etc.

(81) Kṟx. *pesgʔ-/ pesg-* 'to weed', *DEDR* 4423, Tamil *peṟukku/ -i-* 'to gather, pick up',

(82) Kṟx. *pēsʔ-/ pēs-* 'to command', *DEDR* 4430, Tamil *pēcu/ -i-* 'to talk', Kannada *pēẓ/ pēẓd-* 'to utter, say', Telugu *p(r)ēlu* 'to prattle, chatter, talk nonsense'.

(83) Kṟx. *bichrʔ-/ bicchr-* 'to set free', Mlt. *bicr-/ bicr-, bicry-* 'to let go', ?*DEDR* 5393, Tamil *viṭu/ viṭṭ-* 'to leave', Kota *viṟc-/ viṟc-* 'to make or let go', Gondi *viṟc-* 'to leave, abandon'.

c. A few verb bases ending in -VC have past stems with geminated final consonants, with shortening of the base vowels if they are long:

(84)   Kṟx. *kiṭ-* (also *kiṭʔ-*)/ *kiṭṭ-*, *kiṭc-* 'to push the unburnt ends of sticks into fire'.

(85)   Kṟx. *keb-/ kepp-* 'to scold', *DEDR* 1955, Tamil *ceppu/ ceppi* 'to say', Malayalam *ceppuka* 'to say', Telugu *ceppu* 'to say'.

(86) Kṛx. *mōx-*/ *mokkh-* 'to eat', Mlt. *mōq-*/ *moq-*, *DEDR* 5127, Malayalam *mōkuka* 'to drink, sip'.

(22) Kṛx. *xāy-*/ *xayy-* 'to become dry', Mlt. *qāy-*/ (*qāy-*) id., *qayek* 'dry', and (72) Kṛx. *poll-*/ *poll-* 'to be unable', Mlt. *pol-*/ *pol-* id., might also belong to this group.

3 Discussion

3.1 Origin of the Suffixes -*c* and -*j*

3.1.1 -*c* by a Progressive Palatalisation of *tt?

Subrahmanyam (1964, 49) observed that palatalisation of *t or *tt after *i, *e or *y, is found in the Tamil-Koḍagu subgroup of South Dravidian, pre-Parji of Central Dravidian, and Proto-South-Central Dravidian. Subrahmanyam (1971, 204) and Krishnamurti (2003, 193) suspect that a similar palatalisation occurred in Kuṛux-Malto as well. They explain Kṛx. *nuñjʔ-* 'to pain' and Mlt. *nuñj-* id. from *nōy-nt-, where the suffix *-nt is palatalised by the root-final *y. If Kuṛux-Malto had the development *tt, *nt > *c, *ñj* /{i, y, (e)} – as in the Tamil-Koḍagu subgroup – the -*c* in some Kuṛux-Malto past stems are explainable by positing *-tt, a past tense suffix widely attested in other Dravidian languages, which is palatalised by the base-final front vocoid, e.g. (43) Kṛx. *ciʔ-*/ *cicc-* 'to give', Mlt. *ciy-*/ *cic-*, (47) Kṛx. *hoʔ-*/ (*h*)*occ-*, Mlt. *oy-*/ *oc-* 'to take', (48) Kṛx. *biʔ-*/ *bicc-* 'to be cooked', cf. Koḍagu *bey-*/ *becc-* 'to cook (rice)'.

A problem with this explanation is that Kuṛux and Malto do not have any other forms which independently support reconstruction of the suffix *-tt for Proto-Kuṛux-Malto. In order for this hypothesis to work, we need to suppose that Proto-Dravidian *tt was first palatalised to *cc in contexts after *i or *y (which is possible given *-yt- > *-c- as in (5) Kṛx. *xoy-*/ *xoss-* 'to mow'), and then *cc was generalised at the expense of *tt in Proto-Kuṛux-Malto. Furthermore, palatalisation of *tt to *cc* is an internal development of the South Dravidian and South-Central Dravidian subgroups according to Krishnamurti (1961, 164), and if it was operative in Proto-Kuṛux-Malto, it must be an independent innovation unless Kuṛux-Malto belongs to either of them. Positing *tt is an attractive hypothesis, but from a viewpoint of economy it does not provide a simpler explanation than positing *-cc for Proto-Kuṛux-Malto.

3.1.2 *c* or *j* in Non-Palatalising Contexts

The final *c(c)* in the past stems of a few verb bases that originally ended in *-i or *-y might be explained as palatalised *-tt. Some verb bases which end in *ʔ* in Kuṛux and *y* in Malto are considered to have had *-i as a suffix, e.g. Kṛx. *emʔ-* vs Mlt. *amy-* 'to take bath' < PKM *am-i-, from *am* 'water' and the derivative suffix *-i which fronted *a to *e* in the Kuṛux form (Gordon 1976, 69). If the past suffix *-tt was attached to these verb bases, the base-final *-i would have palatalised the suffix *-tt to *c*. However, the past suffix *c* or *j* is also found after verb bases reconstructed without final *-i or *-y, e.g. (64) Kṛx. *man-/ mañj-* 'to become', Mlt. *men-/ meñj-*.

To explain the origin of final *-cu* found in many Telugu verb bases, Krishnamurti (1961, 163 f.) considered that *c* was incorporated into the verb base from the original 'past participial morpheme' (henceforth 'converb suffix'), *-ci/*-cci, by metanalysis of *c/*cc as a part of the verb base. The converb suffix *-ci/*-cci has its reflexes in some South-Central Dravidian and Central Dravidian languages (Krishnamurti 2003, 331 f.). It is further analysed into the past suffix *-cc (Krishnamurti 2003, 298 f.) and another past suffix *-i. Krishnamurti (2003, 299) explained Kuṛux-Malto *-c* from *-cc.

In Pengo of South-Central Dravidian, the converb suffix *-ji* is attached to some verb bases ending in *n*, while *-si*, *-ci* or *-hi* is attached to the others (Burrow, Bhattacharya 1970, 91). So the converbs of Pengo *man* 'to be' and *ven* 'to hear' are *manji* and *venji*, while the past stems, *mac* and *vec*, are made from the *n*-less allomorphs of the verb bases (Burrow, Bhattacharya 1970, 66). Gondi, another South-Central Dravidian language, has the converb suffix *-ji* attached to the verb bases ending in *n*, as in *man-ji* 'having stayed' from *man* 'to be, to stay', while *-i*, *-si* or *-ci* is attached to the other verb bases. In Central Dravidian, Gadaba also forms converbs with *-ji* after verb bases ending in *n*, e.g. *venji* 'having heard' from *ven* 'to hear' (Bhaskararao 1980, 49), while the suffix *-i* is attached to the other verb bases.

Of the three Kuṛux-Malto verb bases which end in *n* and take the past suffix *-j*, Pengo has two cognates with *j* in their converbs, and Gadaba has one, as mentioned above. This coincidence suggests that the Kuṛux-Malto past stems in *-j*, i.e. Kṛx. *mañj-*, *meñj-* and *pañj-*, have common origins as the South-Central and Central Dravidian converbs in *-cci (> -ci) and *-ci (> -ji, -si). If the converb suffixes *-ci and *-cci developed from combination of *-c/*-cc and *-i as Krishnamurti considered, and if converbs were formed independently from the past stems as in Pengo and Gondi at some point between Proto-Dravidian and Proto-South-Central Dravidian, we can explain that the Kuṛux-Malto past stems in *ñj* and *c* such as Kṛx. (64) *mañj-*, (47) (*h)occ-* and (59) *barc-* developed from the original converbs, and not from the past stems such as Tamil *vantu* from *varu* 'to come', Pengo *mac* from *man* 'to be',

or Gadaba *veṭ-* from *ven-* 'to hear'. Kobayashi (2022, 20) argued that Proto-Kuṛux-Malto had a converb formed from the past stem and *-i, retained in Malto as in *laḍ-i* 'having danced' from (12) *lal-* 'to dance' and *oc-i* 'having taken' from (47) *oy-* 'to take'. Kuṛux-Malto does not seem to share the innovation of the new converb suffix *-ci and *-cci with South-Central Dravidian, but at least it has parallel reflexes of *-c-i and *-cc-i in the Malto third-person non-masculine short converbs such as *oc-i*. In Proto-Kuṛux-Malto, *-c/*-cc and *-i were not combined into a single morpheme as in South-Central Dravidian, but functioned separately as the past suffix and the converb suffix, respectively. Figure 1 represents the process of the branching of Proto-Dravidian into subgroups, based on the converb formation. Kuṛux-Malto and South-Central Dravidian also share the predicative adjective suffix *-kk as mentioned above. *-c[4] occurred after verb bases ending in *n*, and *-cc after those ending in a vowel, which would give rise to Kuṛux *ʔ* basefinal. If we posit Proto-Kuṛux-Malto past suffixes *-cc and *-c, it is not necessary to posit *y-tt as the origin of the Kuṛux-Malto suffix *-c*, even though the possibility of *y-tt > *-c* is not ruled out.

Figure 1 represents:

Proto-Dravidian: had the past suffixes *-t(t) and *-i

past suffix *-c/*-cc was innovated

Proto-South: past stem = converb

Proto-Kuṛux-Malto: new past stems with *-c, *-cc

Proto-South-Central: innovated converbs with *-ci,*-cci
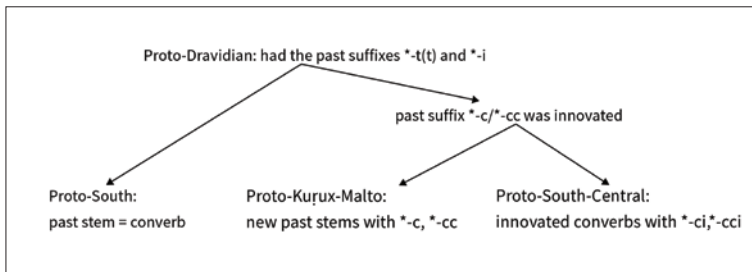
Figure 1 Possible scenario on the innovation of *-c/*-cc

Positing *-c also helps to solve the irregular *jj* in (69) *xoy-/ xojj-* 'to measure'. Judging from (87) Kṛx. *ujj-* and (88) Kṛx. *ejʔ-* cited below, the past stem *xojj-* is traced back to *qoy-c-, while (4) Kṛx. *xoy-/ xoss-* 'to mow' developed from *qoy-t- as a result of a regular sound change as is found in (10) Kṛx. *põy-/ poss-* 'to rain'.

(87) Kṛx. *ujj-/ ujjy-* 'to live', Mlt. *uj-/ ujy-* id., *DEDR* 645, Tamil *uy/ uynt-* 'to live'. The past stem is from PKM *uy-c- (Pfeiffer 2018, 59 "**uyV-cV-").

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4 Krishnamurti (2003, 104) explains Kannaḍa *pesaru* 'name' from *pin-cc-, where *n is lost before *cc by the rule NTT > TT. If *pin-cc- would develop to Kuṛux *piñj-* 'to name', it would also be possible to posit *-n-cc instead of *-n-c. Even in that case, it is still necessary to reconstruct the suffix *-c along with *-cc to account for (68) Kṛx. *xoy/ xojj-*, Mlt. *qoy/ qoj-* 'to measure'.

(88) Kṛx. *ejʔ-/ ejj-* 'to awaken', *DEDR* 851, Tamil *eẓu/ eẓunt-* 'to rise'. The past stem is from PKM *ey-c- < PDr. *eẓ-c- (Pfeiffer 2018, 72 "**eẓV-cV-").

(67) Mlt. *ĩh-/ iñj-* 'to pelt' is a difficult word. This verb probably belongs to *DEDR* 805, Tamil *ey-/ eyt-* 'to discharge arrows' rather than *DEDR* 859, Tamil *eṛi-/ eṛint-* 'to throw, discharge', etc., for *iñj-* is hard to explain by the latter. As Subrahmanyam (1964, 50) discussed, the past stem of this verb is explainable from *ey-nt-, just as *ñj* in the following words can be explained from the derivative suffix *-nt palatalised by the root-final *y.

(89) Kṛx. *xañjʔ-* 'to bear fruit', *DEDR* 1459, Tamil *kāy/ -tt-* 'to bear fruit', Telugu *kāyu* 'to bear fruit', etc.

(90) Mlt. *nuñj-/ nuñjc-* 'to pain', *DEDR* 3793, Tamil *nōy/ -nt-* 'to be ill', Parji *noy/ noñ* 'to be painful', etc. Subrahmanyam (2013, 402) suggests that Mlt. *nuñj-* is a verb base remodelled from a past stem formed with *-nt.

(91) Kṛx. *muñj-/ muñjy-* 'to finish', *DEDR* 4891, Tamil *mūy/ -nt-* 'to end', Telugu *mugiyu* 'to be finished', etc.

The past stem *-nt is attested only in South Dravidian, and also in Central Dravidian according to Subrahmanyam (2013, 401). If the Malto past stem *iñj-* is formed with *-nt, it is the only Kuṛux-Malto example of the past suffix *-nt. However, *iy-nt- may not be the only way to explain *iñj-*. In (49) Mlt. *beh-* and *bey-* 'to be', there is fluctuation between *y* and *h* (Kobayashi 2012, 44). If *ĩh-* is also a variant of unattested *ĩy-, it belongs to the same etymon as Tamil *ey-* mentioned above. *ĩy-c- would develop to *iñj-*, as we explained Mlt. *qoj-* in (68) from *qoy-c- (cf. Pfeiffer 2018, 70 *-nc-). There is only faint evidence to reconstruct the past suffix *-nt for Proto-Kuṛux-Malto.

3.2 Origins of the Zero Past and the Geminated Past Stems

In the Kuṛux-Malto zero past stems, there is no visible suffix, and the verb bases are followed directly by the pronominal suffixes beginning with *a* in the third-person, such as Kṛx. and Mlt. plural *-ar*. Since these pronominal suffixes with *a* occur only in the past forms, they can be viewed as signalling the past tense.

Outside Kuṛux-Malto, Brahui has the past suffix *-ā/-ē*, and Parji-Ollari-Gadaba has *-e/-o* in the past forms. They are reminiscent of the *a* in the Kuṛux-Malto third-person pronominal suffixes of the past. However, there is no shared feature in the distribution of the nonhigh vowel past among these languages and Kuṛux-Malto, and we cannot reconstruct a past suffix like *-a for Proto-Dravidian. In-

stead, *-at(V) can be reconstructed as the third-person non-mascu-line pronominal suffix of the past, because the past third-person sin-gular neuter/non-masculine suffixes of many languages begin with *a*, as in Tamil *-atu*, Koṇḍa *-ad*, Pengo *-at*, and Parji *-a* (Subrahmany-am 2010, 55 f.; Kobayashi 2022, 20).

Two verb bases ending in a single consonant form their past stems by geminating the final consonant: (86) Kṟx. *mōx-/ mokkh-*, Mlt. *mōq-/ moq-* 'to eat',[5] and (85) Kṟx. *keb-/ kepp-* 'to scold'. (72) Kṟx. *poll-/ poll-*, Mlt. *pol-/ pol-* 'to be unable' might also be a geminating past if the gemination in the Kuṟux verb base *poll-* is secondary (Gordon 1976, 120 f.). (22) Kṟx. *xāy-/ xayy-* 'to become dry' might belong to the *-y* past, but since most verb bases forming the *-y* past end in an obstru-ent, it might better be grouped under the geminating past. *-t* past stems such as (6) Kṟx. *xot-/ xott-* 'to cut by striking' can also be re-garded as geminating past stems.

Caldwell (1913, 496 f.) noticed the geminated past stems of a few monosyllabic Tamil verb bases ending in a single consonant *ṭ*, *k*, or *ṟ*, and proposed a morphological process which he coined 'Dravidi-an reduplication'. South-Dravidian languages except Tuḷu have past stems of this type (Subrahmanyam 1971, 191-4). While *ṭṭ* and *ṟṟ* can be explained by suffixation of *-t* with progressive assimilation, *kk* as in the Tamil verbs, *DEDR* 562 *uku/ ukk-* 'to be shed as feathers or hair', 3005 *taku/ takk-* 'to fit', 3476 *toku/ tokk-* 'to assemble, collect', 3569 *naku/ nakk-* 'to laugh', 3733 *neku/ nekk-* 'to suffer', 3808 *paku/ pakk-* 'to be split', 4238 *puku/ pukk-* 'to reach' (Kannada *hogu-/ hokk-*), and 4848 *miku/ mikk-* 'to exceed', are difficult to account for by suf-fixation of *-t and assimilation of *-k-t to *-k-k.[6] In a few disyllabic Tel-ugu verbs such as *ceḍu* 'to perish', *iḍu* 'to put, give' and *tagu* 'to fit', the regular past relative participle is *ceḍ-in-a* 'spoiled', and *iḍ-in-a* 'placed', and *tag-in-a* 'fit', respectively, but there are also alternative forms with gemination, *ceḍḍ-a*, *iḍḍ-a*, and *tagg-a* (Krishnamurti 1961, 211; 2003, 334; Subrahmanyam 1971, 142; 2013, 429).

The fact that South, South-Central and Kuṟux-Malto have the gem-inating past suggests the possibility that the gemination of *k dates back to Proto-Dravidian. However, none of the known examples of the geminated past stems of Tamil and Telugu has cognates in Kuṟux or Malto, and past stems with geminated *p* or *y* are not found out-side Kuṟux-Malto, so it is difficult to trace Kṟx. *mokkh-* or Kṟx. *kepp-* back to Proto-Dravidian. Even though it is not totally convincing, it is possible that gemination spread from past stems with *t ~ tt* such

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5 The final consonant is not geminated in Mlt. *moq-*, but vowel shortening as in (86) *mōq-/ moq-* indicates that Proto-Kuṟux-Malto had a geminate consonant, before which a long vowel is shortened according to the rule of Zvelebil (1967, 90).

6 Ramaswamy Aiyar 1938, 750; Andronov 2003, 206.

as (6) *xot-*/ *xott-*, which show gemination because of the suffix *-t, by analogical extension.

Gemination of the last obstruent became productive, and spread to bases ending in -Cʔ in Kuṛux, such as (77) *esʔ-*/ *ess-* 'to break', which is analogical because the *-t past form *eṭ-t- would become ˣ*ett-* by the regular sound change. The base obstruent is geminated as long as the past stem fits in the -VXC rhyme, so for example, *d* in Kṛx. *idʔ-*/ *idd-* 'to plant' is geminated, whereas *d* in Kṛx. *ildʔ-*/ *ild-* 'to erect, set up' with a -VCCʔ rhyme remains a singleton.

The bases with identical past stems, such as *urkh-* and *boŋg-*, can also be explained as geminated past stems. These verb bases have the rhymes -VCC, and gemination is invisible or unrealised because the rhymes are already heavy.

3.3 Prosodic Condition

The choice of the past suffix is partly decided by the prosodic structure of the verb base, as is summarised in **table 1**.

Proto-Dravidian verbs of the shape *(C)V̄* become (C)Vʔ in Kuṛux, and (C)Vy in Malto. These verbs form the past stems -V*cc* or -VV*c*, e.g. Kṛx. *ciʔ-*/ *cicc-* 'to give', Kṛx. *coʔ-*/ *cōc-* 'to rise'.

Some (C)VC verb bases have past stems with the Proto-Dravidian suffix *-t, as in (4) Mlt. *qal-*/ *qaḍ-* 'to steal', while the others take the suffix *-c, as in (64) Kṛx. *man-*/ *mañj-* 'to become'.

(C)VCV verb bases become (C)VCʔ in Kuṛux, and (C)VCy or (C)VC in Malto.[7] They form the past stems with -*c*, as in (57) Kṛx. *paṭʔ-*/ *paṭc-* 'to be filled in'.

Verb bases of the shape (C)VXC either form the past stems with -*y* as in (33) Kṛx. *pāṛ-*/ *pāṛy-* 'to sing', or with zero as in (74) Kṛx. *boŋg-*/ *boŋg-* 'to run'.

(C)VXCV verbs becomes (C)VXCʔ in Kuṛux and (C)VXC or (C)VXCy in Malto. They form the past stems with zero as in (78) Kṛx. *kīdʔ-*/ *kīd-* 'to lay down', but also with -*c* as in (57) Mlt. *nēɢy-*/ *nēɢc-* 'to breathe'.

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7 Some of the final *ʔ* of the Kuṛux verb bases (C)VCʔ and (C)VXCʔ might be secondary and might not reflect an original vowel, given the Malto reflexes (C)VC and (C)VXC without final *y*.

Table 1   Proto-Kuṛux-Malto verb base types and the past stems

Verb base > Kṛx.		Past stem	Kuṛux	Malto	Class
-VV >Vʔ	⟶	*-V̆cc	cicc-, cōc-	cic-, cōc-	*-cc
-Vn	⟶	*-Vnc	mañj-, meñj-	meñj-, meñj-	*-c
-VC	⟶	*-VCt	oṇḍ-	oṇḍ-	*-t
	⟶	*-VCc	xojj-	qoj-, ij-, iñj-	*-c
-VVC	⟶	*-VCC	mokkh-	moq-	0
	⟶	*-VCCi	pakky-, piñjy-	eky-, piñjy-	*-i
-VCC	⟶	*-VXC	urkh-, kīd-	urq-, kĭd-	0
-VCV > -VC?	⟶	*-VCcc	patc-	barc-	*-cc
-VXCV>-VXC?	⟶	*-VXCcc	nāxc-	nēɢc-	*-cc

4   Conclusion

The formation patterns of the Kuṛux-Malto past stems are by no means fixed or uniform. Kuṛux and Malto often differ in the past stems, e.g. (30) Kṛx. *nañj-* vs Mlt. *nany-*, or the verb bases, e.g. (4) Kṛx. *xaṛʔ-* vs Mlt. *qal-*, and a single language sometimes has multiple past stems, e.g. (79) Kṛx. *tind-* and *tindc-*. Outside Kuṛux-Malto, there is even less agreement in the past stem formations among the subgroups. The past stem system of the Tamil-Koḍagu subgroup has the richest variation in the past suffixes, but even that system must have undergone innovations from Proto-Dravidian. Since our knowledge of the Proto-Dravidian verb morphology is still limited, a realistic strategy is to first identify those past suffixes of Kuṛux-Malto that can be reconstructed for Proto-Kuṛux-Malto, and to compare them with the past suffixes of the other subgroups.

Kobayashi (2011, 41) identified seven types of the past stems: *-t, *-c, *-cc, *-nc, *-y = *-i, gemination, and zero suffixation. In this paper, we discussed the origins of these types in more detail, and drew the following conclusions:

- the past suffixes *-t and *-i are firmly reconstructed for Proto-Kuṛux-Malto (§§ 2.1-2.2). These suffixes are attested in other subgroups except Brahui, and are considered to originate from Proto-Dravidian, whatever their original functions may have been. The distribution of Proto-Kuṛux-Malto *-i shows significant similarity with that of *-i(ṉ) in the Tamil-Koḍagu subgroup of South Dravidian.
- Of the past suffixes reconstructed for Proto-Dravidian, there are no solid reflexes of *-tt and *-nt in Kuṛux-Malto, even though there is no evidence against positing them for Proto-Kuṛux-Malto (§ 3.1).

- Instead of *-tt and *-nt, we can reconstruct *-cc and *-c for Proto-Kuṛux-Malto. Coincidences such as the Kuṛux past stems *mañj*, *meñj* and the Pengo converbs *manji*, *venji* suggest the possibility that Kuṛux-Malto and South-Central Dravidian have a shared innovation regarding the suffix *-c. *-cc might also be a shared innovation of Kuṛux-Malto and South-Central Dravidian (§ 3.1).
- Proto-Kuṛux-Malto had a few geminating past stems, but none is cognate with those in South or South-Central Dravidian, and have to be considered independent innovations. The past stems with zero developed by analogical extension of the geminating past to the verb bases with the heavy rhyme *-VXC, where gemination is obliterated (§ 3.2).
- Unlike South-Dravidian past suffixes *-nt vs *-ntt (§ 1), Kuṛux-Malto *-j* (< *-c) and *-c* (< *-cc) do not seem to contrast in transitivity (§§ 2.3-2.4).

Abbreviations

CDIAL	Turner 1962-66
DEDR	Burrow, Emeneau 1984
Kṛx.	Kuṛux
Mlt.	Malto
PDr.	Proto-Dravidian
PKM	Proto-Kuṛux-Malto
C	Consonant
V	Vowel
X	V or C
ˣ	Unattested

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A Qualitative Study of Actual and Non-Actual Motion Expressions in Telugu and its Implications for Some South Asian Languages

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Abstract   This paper examines the similarities and differences between actual motion (AM) and non-actual motion (NAM) expressions in Telugu via a qualitative approach. The findings revealed the following similarities: (a) the extensive use of generic deictic verbs, (b) the obligatory use of case markers for encoding Path, (c) the limited number of path verbs and their uses, and (d) the use of spatial nouns for expressing Region. In addition, the findings also revealed that AM had a reasonable number of Manner expressions, whereas NAM contained almost no information about Manner.

Keywords   Agglutinative languages. Dravidian. Motion Event Typology. South Asian Languages. Telugu.

Summary   1 Introduction. – 2 NAM. – 3 About Telugu. – 4 Methodology. – 4.1 Participants. – 4.2 Material. – 4.3 Procedure. – 5 Patterns in the AM and NAM Studies. – 5.1   The Use of Deictic Verbs in AM and NAM. – 5.2 Less Frequent Use of Path Verbs in AM and NAM. – 5.3 The Dominant Use of Case Markers for Path in AM and NAM. – 5.4 Dedicated Set of Spatial Nouns for Region. – 5.5 Manner of Motion in the AM and NAM Studies. – 6 Discussion. – 6.1 AM Patterns in other Dravidian and Indo-Aryan Languages. – 6.2 NAM Patterns in Other Dravidian and Indo-Aryan Languages. – 7 Conclusion.

1   Introduction

Actual motion (AM) involves an object or entity moving from one place to another via self- or other-caused motion or being located in a place. For example, (1) involves a bottle carrying out a motion along a trajectory with respect to the cave. Here, *bottle* is a Figure that is defined as a moving entity, *cave* is the Ground or Landmark with reference to which the bottle moves, *into* is a Path that is a trajectory followed by the Figure, and the main verb *float* expresses both Motion and Manner. AM is examined extensively in the context of Talmy's Motion Event Typology (Talmy 2000b); he proposed a binary typology based on how languages express Path or the *core schema* in the main verb or "satellites"[1] in a Motion event. The binary language types are "satellite-framed" (henceforth SF) that express Path on "satellites", as illustrated in (1), and "verb-framed" (henceforth VF) that express Path on main verbs; see (2) and (3). Telugu belongs to neither of the two types, as illustrated in (4), in which Path is expressed by the dative case marker, Motion is expressed on the deictic verb; Region is expressed by the spatial noun; and Manner is expressed on the nonfinite. Most of these features, including case markers, have not received due attention in the binary typology. As a result of this undue attention to linguistic forms other than path verbs and satellites, many languages have been analysed with the aim of fitting the data into either of the two types. A classic case that is relevant to this paper is that of Tamil (Pederson 2006) and Hindi (Narasimhan 2003), two South Asian languages, which have been misclassified as archetypal VF languages. As part of this misclassification, Pederson (2006) claimed that manner verbs could not be used as the main verb in boundary-crossing situations in which the Figure crosses from one spatial boundary to another, which is a typical characteristic feature of VF languages. This is not always true. As exemplified in (5), Tamil clearly exhibits the use of manner verbs in a boundary-crossing situation, as do the other Indian languages in (6) and (7).

1   Satellites are those form classes that are in constructions with verbs such as English particles and Russian verb prefixes (Talmy 2000b).

(1)   The bottle floated[Manner][2] **into**[Satellite] the cave.

(2)   *la   botella   **entró**[Path]   a la cueva   flotando*
        the   bottle   moved.in   to the cave   floating
        'The bottle floated into the cave'.[*]
        * The pragmatic sense of this sentence appears to be "the bottle entered the cave floating", as in (4).

                                                                Spanish (Talmy 2000a, 49)

(3)   *La   barca   **entrò**[Path]   nella   grotta   galleggiando*
        the   boat   entered   into.the   cave   floating
        'The boat entered the cave, floating'.

                                                                Italian (Folli, Harley 2020, 427)

(4)   *bāṭil   nīḷḷa mīda   tēlu-tū   guha-lō-**ki**[Path]   weḷḷi-M-di*
        bottle   water above   float-PTCP   cave-in-**DAT**   go-PST-3SG.N
        'A bottle went to the cave floating'.[*3]

                                                                Telugu

(5)   *oru   payyan   arai-kk-uḷ   oṭi-nāṉ*
        one   boy   room-DAT-in   run-PST-3SG.M
                     Figure   Landmark-Path:End-Region:In   Manner+ Motion
        'A boy ran into the room'.

                                                                Tamil[4]

(6)   *oka   abbāyi   gadi-lō-ki   parigett-ā-ḍu*
        one   boy   room-in-DAT   run-PST-3SG.M
                     Figure   Landmark-Region:In-Path:End   Manner+ Motion
        'A boy ran into the room'.

                                                                Telugu

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2 Manner: various aspects of how motion takes place, such as bodily locomotion or the use of a vehicle; Path: a bounded event, with respect to the Beginning, Middle and/or End (such as "to", which is Path:End in "the manager rushed to the office"); Direction: an unbounded event along one or more vectors defined by an FoR (such as upwards or towards a speaker); Region: an area of space, usually defined in relation to the Landmark (such as "on" in "the girl danced on the floor"); Figure: the focal entity (such as "bottle" in "the bottle floated into the cave"); Landmark: one or more physical entities in relation to which the location or translocation of the Figure may be specified ("cave" in "the bottle floated into the cave"). For more details about motion components, see Naidu et al. 2018; Naidu, Zlatev, van-de-Weijer forthcoming; Talmy 2000a; Zlatev 2007; Zlatev et al. 2021.

3 In this paper, the glossing and translation of the Telugu examples are only for the convenience of the reader; I do not claim that they correspond to the native concepts.

4 The Author collected examples (5), (7), and (17) to (32) from native speakers. The uncited Telugu examples (such as 6) are constructed by the Author as a native speaker.

(7)	*ēkā*	*mulgā*	*khōlī-la*	*palāl-ā*
	one	boy	room-DAT	run.PST-3SG.M
		Figure	Landmark-Path:End	Manner+ Motion
	'A boy ran to the room'.			

Marathi

Against these issues, while criticising the binary typology, Naidu et al. (2018), Naidu, Zlatev, van-de-Weijer (forthcoming), and Zlatev et al. (2021) recently proposed post-Talmian Motion Event Typology because languages such as Telugu do not fit into the original cognitive typology. In this post-Talmian approach, languages are analysed as belonging to at least four clusters. Languages such as Swedish represent the first cluster, while French belongs to the second cluster, and Thai and Telugu represent the third and fourth clusters, respectively. Since the fourth cluster is of particular interest for the present paper, I will discuss it in detail (Naidu et al. 2018); Naidu et al. (2022) proposed that Telugu should be considered as an example of the fourth cluster that was previously conflated with others due to the limitations of an overly constrained typology. The two joint works based on the AM data revealed that this fourth cluster can be characterised by at least four typological features: (a) the preferential use of Direction verbs rather than Path verbs; (b) case markers to encode Path; (c) the use of spatial nouns for expressing Region; and (d) the frequent use of Manner verbs in boundary-crossing situations, complemented by *adnominal* dominance over *adverbal* dominance.

Against this empirically established backdrop, the specific question that is addressed in this comparative study is whether NAM shows similar features to those of AM. Given the linguistic resources available in Telugu, I predict that Telugu may exhibit similar patterns in the expression of NAM. If this prediction is proved to be true, the present study will further confirm that Telugu forms a distinct cluster. In other words, the similarities in both domains will indicate that the features are not only characteristics of the AM domain but also mirror the NAM domain in Telugu. These features may imply that some other South Asian languages might have similar tendencies that could be investigated in future studies. In addition to the similarities, the present study also anticipated that there would be differences in AM and NAM with regard to the expressions of manner of motion. These differences may be explained via the principles of cognition and human experience. With these objectives, the remainder of the paper is organised as follows. Section 2 briefly introduces NAM, while section 3 describes the key linguistic features of Telugu. Section 4 describes the methodology for the study, while section 5 presents the similarities and differences in AM and NAM expressions. Section 6 presents the discussion of the findings, and section 7 concludes the paper.

2   NAM

(8)   The ghat goes to the river.

Without having to consider the issue overly, two things may be noted in (8): first, it is as much a natural linguistic description as is any other grammatical description in English. Second, there is a ghat (a set of steps). As we know, this ghat only exists in a static mode. Why is it, then, that the motion verb 'go' is used for an object (ghat) that does not move at all? This simple question has prompted many linguists, particularly cognitive semanticists, to investigate the reasons for such a description. This is an example of NAM.[5] It has been studied in a wide range of languages, including English and Japanese (Amagawa 1997; Matsumoto 1996), English and Spanish (Rojo, Valenzuela 2003), Spanish (Rojo, Valenzuela 2009), and Swedish, French, and Thai (Blomberg 2015; Hoffmann 2012; Takahashi 2000). These studies observed that NAM was a common phenomenon across languages. Furthermore, it has been demonstrated that there are similarities and differences across languages when expressing NAM. Eye-tracking and picture-drawing studies (Matlock 2006; Matlock, Richardson 2004) have also made substantial contributions to the study of NAM in revealing the nature of the interactions between linguistic and nonlinguistic factors. Many of these studies have explicitly called for more research and a more diverse set of languages in order to better understand the nature of the interactions between cognitive and linguistic factors, as well as the ways in which languages express NAM. Since there is hardly any work on Indian languages regarding AM or NAM, or on both in general and Dravidian in particular, this comparative study may serve as a starting point for research on other Indian languages. This was one of the motivations for studying AM and NAM in Telugu.

3   About Telugu

Telugu is the largest Dravidian language in terms of the number of speakers. It is sixteenth on the Ethnologue list of the most frequently spoken languages in the world (Ethnologue 2021), and is mainly spoken in the southern states of Andhra Pradesh and Telangana India **[fig. 1]**. According to Government of India's 2011 language census report (Office of the Registrar General and Census), it is spoken by

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5   I adopt the term NAM from Blomberg, Zlatev 2014, although in the literature it is widely known as fictive motion, abstract motion, or subjective motion (Langacker 2005; Matlock 2010; Matsumoto 1996; Talmy 1996; 2000a).

81,127,740 speakers. It is one of the 22 scheduled languages in the Eighth Schedule of the Constitution of India. A key function of the scheduled languages is that they are official languages in their respective states.

To provide a brief historical note about the two Indian states in which Telugu is spoken, following the downfall of the Kakatiya kingdom in the fourteenth century, the two states were invaded and were ruled as one state by various Muslim polities until the eighteenth century. During the eighteenth century, Telangana continued to be under Muslim rule, while Andhra Pradesh was under British rule as part of the treaty between the Muslim and British rulers. Nine years after India's independence in 1947, Andhra Pradesh and Telangana formed one state, and reverted to the former name, Andhra Pradesh. This was the first linguistic state to be formed in independent India. In 2014, the Telangana region separated from Andhra Pradesh and was granted statehood by the government of India (Ministry 2014).

Some of Telugu's key linguistic features are as follows: it is a predominantly suffixal, agglutinative language with relatively free word order (canonical SOV) and is largely head-final in structure. Modifiers such as adjectives and genitives precede nouns, and auxiliaries follow the main verb. Telugu is a nominative-accusative language, as the main verb agrees with the argument in the nominative case. Unlike English, there are no pleonastic constructions with *it/there* in Telugu. It is a pro-drop language, with the main verb encoding subject information in the form of agreement. It has case markers that indicate various syntactic and semantic relationships between the nouns and the verb. Telugu also has postpositions, which function syntactically as case markers. In this paper, we will see the importance of case markers, spatial nouns, and deictic verbs in expressing AM and NAM [fig. 1].
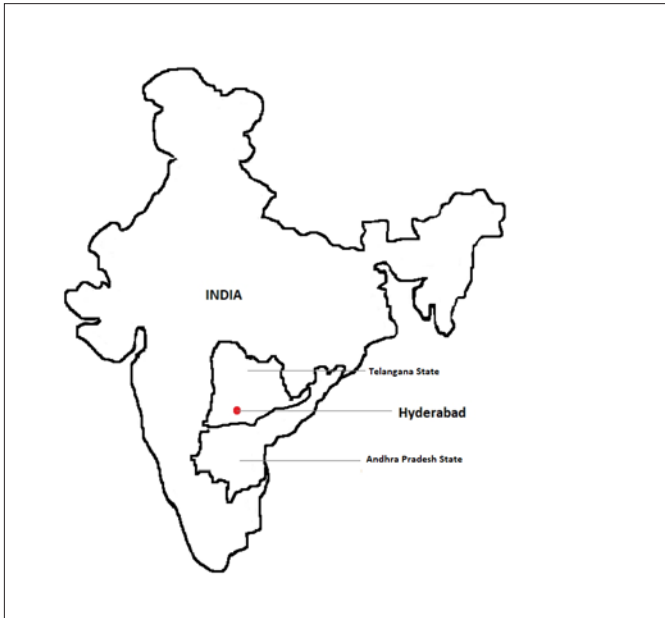
Figure 1   Map of India showing Andhra Pradesh and Telangana

4   Methodology

4.1   Participants

AM Participants

Thirty Telugu speakers (15 female and 15 male) were recruited from among the under-graduate and post-graduate students registered at the University of Hyderabad, India. The mean age was 21.9 years. At the end of the session, the participants were thanked and were compensated for their participation.

NAM Participants

Those who participated in the AM study also participated in the NAM study.

4.2   Material

The study used 38 video clips and 40 pictures that were developed in the PATOM project at Lund University.

AM Material

A set of 38 video clips of translocative[6] motion events were used. The clips lasted for a minimum of five to a maximum of eight seconds depending on how long it took for a particular Motion situation to conclude naturally. All the situations involved a human being, either as an agent or as a Figure performing an action. The list of translocative events is presented in Appendix A.

NAM Material

The stimuli consisted of 40 static pictures, of which 20 were control and 20 were experimental. Although both the control and the experimental stimuli depicted static situations, the former lacked (linear) paths. The list of stimuli is found in Appendix B.

4.3   Procedure

AM Procedure

Having obtained written informed consent, the participants were asked to sit on a comfortable chair in a quiet room and to read the instructions that were presented in Telugu on the computer screen. They were also requested to only begin their descriptions after viewing the video clips completely; at no point were the videos played twice. The descriptions were audio recorded using a Sony ICD-MP3, and were later transcribed for analysis. The number of clauses is presented in table 1.

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[6]   It is defined as a change to a Figure's relative average position in a given frame of reference (Zlatev, Blomberg, David 2010). Also see Naidu et al. 2022.

NAM Procedure

The procedure was relatively more complex than the AM procedure presented above. A confederate to whom the experimenter (the Author of the present paper) explained the picture-guessing game task was recruited. The experimental pictures were placed on a whiteboard (60 cm in width by 60 cm in length) and handed to the confederate. The game entailed the confederate needing to identify the experimental pictures he had been given based on the participants' descriptions. Having explained the game to the confederate, a participant was invited to sit on a comfortable chair in a quiet room at a distance of 60 cm from the desktop computer. The participant was then requested to read the instructions shown on the computer screen carefully. The instructions that were originally provided in Telugu were as follows: "You are now going to play a game with a confederate. You will first be shown pictures on the computer screen. After seeing each picture, please describe it clearly in Telugu. While you describe the pictures, the confederate needs to identify the pictures. Therefore, your descriptions need to be as precise as possible". The instructions were followed by a practice session in which it was ensured that the participant understood the task. The participants' descriptions were audio recorded using a Sony ICD-MP3, and were later transcribed for analysis. The number of clauses is presented in **table 1**. There were more Motion clauses in AM than in NAM because the latter did not necessarily need to be described using a motion verb.

Table 1   Clauses in the AM and NAM data

	Clauses
AM	1,835
NAM	671

5 Patterns in the AM and NAM Studies

This section discusses motion patterns in the AM and NAM data qualitatively. The intent is not to provide a direct or one-on-one comparison of the data, as the corpora are not comparable; nor was this an objective of the paper. The following were the limitations in the direct comparisons: (i) the stimuli were different in each study. The AM study employed video clips, while the NAM study made use of static pictures. (ii) The methods and procedures also differed. For example, the AM study contained descriptions of individual video clips, while the NAM study consisted of descriptions of pictures and a gaming task (see the previous section). Therefore, given these good reasons, the data are not comparable in their entirety. However, the data are adequate for discussing linguistic patterns such as case markers and deictic verbs used for encoding subcomponents of Motion, such as Path. I will discuss four linguistic patterns that were similar in both the domains under the following headings:

a. the use of deictic verbs;
b. the less frequent use of Path verbs;
c. the use of the case markers;
d. the use of Region nouns.

These common patterns have implications for revisiting Talmy's motion event typology that is problematic for languages such as Telugu. In addition to these similarities and implications, there were also differences in the AM and NAM domains with regard to Manner of Motion expressions, as discussed in section 5.5.

5.1 The Use of Deictic Verbs in AM and NAM

Deictic verbs such as *weḷḷu* 'to go' (9) and *waccu* 'to come' (10) were frequently used to encode Motion. The relationship between deictic verbs and Motion is compositional in Telugu, as it does not conflate with any other semantic concept. Tables 2 and 3 present the ten most frequently used verb types and their frequencies in the two studies (**tables 2-3**). As shown, two generic deictic verbs (*weḷḷu* / *pōwu* 'to go' and *waccu* 'to come') occupied the first two positions, accounting for 41.60% and 41.03% in the AM and NAM studies, respectively. These percentages indicate that, in both domains, deictic verbs were more frequent than were other verb types, such as path verbs.

(9) *oka* *pustakālu* *unna* *gadi-lō*
one books there room-in
Landmark-Region:In

nuMḍi *ammāyi*
ABL girl
Path:Begin Figure

eḍama waipu *nuMḍi* *bayaṭa-ku* *weḷḷ-iM-di*
left side ABL out-DAT go-PST-3SG.F
Direction:VC Path:Begin Region:Out-Path:End Direction+MotionFoR:VC

'A girl went out from the left side of the room with books'.

(Event 4, participant 6)

(10) *ii* *bomma-lō* *soraMgaM-lōpala-nuMci*
this picture-in tunnel-inside-ABL

rōḍḍu *bayaṭi-ki* *wastu-M-di*
road outside-DAT come-FUT.HAB*-3SG.N
Figure Region:Outside-Path:End Direction+MotionFoR:VC

'In this picture, a road is going outside from inside of the tunnel'.

* This is future-habitual tense as it has two meanings: it can either express action or state that will happen in future or express action or state that is habitual (Krishnamurti, Gwynn 1985, 153)

(Image 9, participant 4)

Table 2 Ten most frequently used verbs and their frequency in AM

Serial number	Verb	Frequency	Type
1	*weḷḷu/pōwu* ('go')	325	Deictic (Direction)
2	*waccu* ('come')	200	Deictic (Direction)
3	*parigettu* ('run')	244	Manner
4	*naḍucu* ('walk')	130	Manner
5	*ekku* ('ascend')	77	Deictic (Direction)
6	*kūrconu* ('sit')	73	Posture
7	*digu* ('descend')	63	Deictic (Direction)
8	*nilabaḍu* ('stand')	61	Posture
9	*jāgiMg cēyu* ('jog')	54	Manner
10	*koṭṭu* ('hit')	35	Action
		1,265	

Table 3 Ten most frequently used verbs and their frequency in NAM

Sl. no.	Verb	Frequency	Type
1	*wēyu* ('put/construct')	164	Action
2	*weḷḷu* ('go')	129	Deictic (Direction)
3	*waccu* ('come')	102	Deictic (Direction)
4	*paḍu* ('fall')	75	Manner
5	*ekku* ('ascend')	21	Deictic (Direction)
6	*nilabaḍu* ('stand')	21	Posture
7	*ōpen* ('open')	15	Action
8	*wēlāḍutū* ('hang')	13	Action
9	*kaṭṭu* ('construct')	12	Action
10	*pagulu* ('break')	11	Action
		562	

5.2   Less Frequent Use of Path Verbs in AM and NAM

Another systematic and consistent pattern was the less frequent use of path verbs, as shown in (11) and (12), in both domains. Path verbs always conflate Path + Motion in Telugu, as is the case in Germanic languages. Furthermore, path verbs indicate bounded events. In addition, when a path verb is used as in (11), Path is distributed in two linguistic expressions; that is, on a verb and as a case marker. In the AM study, there were three types and 18 tokens (**table 4**), while there were three types and 15 tokens in the NAM study (**table 5**). None of these path verb types found a place in the top ten most frequently used verbs, as illustrated in the previous section (see **tables 2-3**). Furthermore, it may be observed in tables 4 and 5 that the verb types were almost the same. Therefore, the participants were not only consistent, but were also systematic in the use of path verbs.

(11) *oka wyakti mellagā tana gadi-lō-ki*   *prawēśiMc-ā-ḍu*
      one man   slowly his room-in-DAT   enter-PST-3SG.M
          Figure Manner   Landmark-Region:In-Path:End Path+MotionPath:End
      'One man slowly entered his room'.

                                            (Event 13, participant 11)

(12) *bhawanaM cērukōw-aḍāni-ki*   *meṭlu*   *unn-ā-yi*
      building   reach-GER-DAT   steps   be-FUT.HAB-3PL.N
                 Path+Motion-Path:End
      'To reach a building, there are steps'.
      (Image 8, participant 5)

Table 4 Path verbs and their frequency in AM

Sl. no.	Path verb	Frequency
1	*prawēśiMcu* ('enter')	13
2	*cērukonu* ('reach')	3
3	*eMṭar* ('enter')	2

Table 5 Path verbs and their frequency in NAM

Sl. no.	Path verb	Frequency
1	*cēru* ('reach')	9
2	*dāṭu* ('cross')	4
3	*prawēŚiMcu* ('enter')	2

5.3 The Dominant Use of Case Markers for Path in AM and NAM

In two of the previous subsections, it was mentioned that deictic verbs outnumbered path verbs for expressing Motion. Furthermore, it was noted that the use of path verbs was insignificant. A logical question then relates to which form classes were used to express Path? The answer is case markers, as illustrated in (9), in which -*nuMḍi* and -*ki* express Path. They are to be distinguished from Talmy's satellites, as the former are not used in constructions with verbs, but are always used in constructions with nouns. The participants used such case markers to express Path in the AM and NAM studies consistently. The most common and frequent was the dative case, which accounted for 64.38% in the AM study (**table 6**), and for 50% in the NAM study (**table 7**). This is another significant typological feature that differentiates Telugu from other languages such as French, Swedish, and Thai, which mainly use path verbs, satellites, and serial verbs, respectively, to express Path.

Table 6 Case markers and their frequency in AM

Sl. no.	Case markers	Frequency
1	-*ki/-ku* ('to')	602
2	*nuMci* ('from')	311
3	*guMḍā* ('via')	7
4	*waraku* ('until')	7
5	*dwārā* ('via')	7
6	*mīdugā* ('via')	1

Table 7   Case markers and their frequency in NAM

Sl. no.	Case markers	Frequency
1	*-ki/-ku* ('to')	241
2	*nuMci/ nuMḍi* ('from')	199
3	*waraku* ('until')	27
4	*dwārā* ('via')	10
5	*guMḍā* ('via')	5

5.4   Dedicated Set of Spatial Nouns for Region

Another common pattern in the AM and NAM studies was that Telugu exhibited a set of spatial nouns to express Region. In (9), there are two spatial nouns, *lō* "in" and *bayaṭa* "outside", which express Region. Similarly, spatial nouns expressing Region can be seen in (10) and (11). The types were almost the same in the two studies, as presented in **tables 8** and **9**. The most common and frequent noun was *lō/ōpala* 'in(side)', which accounted for 36.69% in the AM study and for 47.63% in the NAM study. Furthermore, no AM or NAM was expressed without a Region and/or a Landmark expression.

Table 8   Region nouns and their frequency in AM

Sl. no.	Region noun	Frequency
1	*lō/lōpala* ('in/inside')	375
2	*paina* ('above')	150
3	*bayaṭa* ('outside')	161
4	*daggara* ('near')	116
5	*kiMda* ('below')	82
6	*mīda* ('above')	44
7	*muMdu* ('front')	34
8	*dūram* ('far')	16
9	*kuḍiwaipu* ('right side')	10
10	*pakkana* ('beside')	8
11	*eḍama* ('left')	5
12	*madhya* ('middle')	5
13	*akkaḍa* ('there')	3
14	*ān* ('on')	2
15	*cuṭṭu* ('around')	2
16	*ḍaun* ('down')	2
17	*dāni* ('in that')	1
18	*fraMṭ* ('front')	1
19	*ikkaḍa* ('here')	1
20	*insaiḍu* ('inside')	1

Sl. no.	Region noun	Frequency
21	*na* ('end')	1
22	*saiḍu* ('side')	1
23	*wadda* ('near')	1
		1,022

Table 9 Region nouns and their frequency in NAM

Sl. no.	Region noun	Frequency
1	*lō/lōpala* ('in/inside')	201
2	*kiMda* ('below')	46
3	*paina* ('above')	44
4	*bayaṭa* ('outside')	27
5	*madhya* ('middle')	18
6	*saiḍu* ('side')	15
7	*pakkana* ('beside')	11
8	*kuḍi* ('right side')	9
9	*daggara* ('near')	8
10	*akkaḍa* ('there')	7
11	*ikkaḍa* ('here')	7
12	*mīda* ('above')	6
13	*eḍama* ('left')	6
14	*muMdu* ('front')	5
15	*dūraM* ('far')	3
16	*raiṭu* ('right')	3
17	*aṭu* ('there')	3
18	*venaka* ('backside')	1
19	*civara* ('end')	1
20	*ap* ('up')	1
		422

5.5   Manner of Motion in the AM and NAM Studies

The use of manner of motion expressions differed to a considerable extent in the AM (13) and the NAM (14) studies. Qualitatively, this was the only difference that was observed in the two studies, in which expressions of manner of motion were absent except for one token in the NAM study (14), in which the inanimate was the Figure.[7] Furthermore, as shown in **table 10**, adverbs were completely absent in the NAM data, whereas they were present in the AM data. Moreover, as a native speaker, I found another difference between the use of AM and NAM. In the AM descriptions, when more than one motion verb (for example, Manner and Direction) was used in a video, the participants consistently used the following combination: a Manner verb as a participle/nonfinite form, and a Direction verb as a finite/main verb form, as illustrated in (15). By contrast, such constructions did not appear to be natural constructions in Telugu, as illustrated via an invented example in (16). In brief, the Manner of Motion was the only typological difference discovered in the AM and NAM studies, as all the other features discussed in the previous sections were found in both domains.

(13) *oka*   *atanu*   *rōḍḍu*   *mīda*   *uruku-tunnā-ḍu*
      one   he   road   above   run-PROG-3SG.M
      Figure   Landmark   Region:Above   Manner+Motion
      'A man is running along the road'.

                                                    (Event 3, participant 30)

(14) *reMḍu*   *koMḍalu*   *zigzag-lāgā*   *unn-ā-yi*
      two   hills   zigzag-like   be-PST-3PL.N
      Figure   Manner
      'The two hills are like zigzag (in shape)'.

                                                    (Image 31, participant 17)

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7   Here, I report the manner of motion expressions in which Figure was an inanimate object in NAM, as in "a road crawls through the coast", not instances such as "we can crawl on the road" that is considered to be an extended NAM (Andersen 2020). If we consider the latter, there were some manner verbs and adverbs that were still less frequent in NAM.

Table 10 Use of Adverbs in AM and NAM

Sl. no.	Study	No. of participants	No. of adverbs
1	AM	30	118
2	NAM	30	0

(15) | *oka* | *atanu* | | *prasāMtamaina* | *rōḍḍu* | *paina* |
|---|---|---|---|---|---|
| one | he | | pleasant | road | above |
| | Figure | | | | |
| *urukkuM-ṭu* | *weḷ-tunnā-ḍu* | | | | |
| running-PTCP | go-PROG-3SG.M | | | | |
| Manner+Motion | Direction+ MotionFoR:VC | | | | |

'A man is going along the pleasant road running'.

(Event 3, participant 20)

(16) | *?rōḍḍu* | *guha-lō-ki* | *urukkuM-ṭū* | *weḷ-tuM-di* |
|---|---|---|---|
| road | cave-in-DAT | running-PTCP | go-PRS-3SG.N |

'A road is going into the cave running'.

6 Discussion

In this paper, I examined the AM and NAM linguistic expressions in Telugu. The objective was to qualitatively investigate similarities and differences in both studies. Although the data obtained were not directly comparable due to the different stimuli, methods, and procedures, the data were sufficient and adequate in scope to examine the linguistic resources available for the expression of the semantic categories of motion events, such as Motion, Path, Region, and Manner in the AM and NAM data. The findings revealed that there was a considerable degree of similarity between the AM and NAM data, while they also showed some differences with regard to the Manner of Motion. The findings have implications for post-Talmian motion event typology in the context of South Asian languages.

Based on the empirical data presented in the previous section, I obtained the following results. Beginning with deictic verbs, they outnumbered path and manner verbs in both domains irrespective of the stimuli and methodology. In this regard, both studies were consistent in the use of deictic verbs to express Motion. With regard to Path verbs, Telugu speakers consistently used fewer path verbs in both experiments, which distinguishes Telugu from other languages such as French and Thai (Naidu et al. 2018; Naidu et al. 2022; Zlatev et al. 2021) that use more path verbs. Since the use of path verbs is insignificant in Telugu, I naturally questioned which other linguis-

tic form was used to express Path. The answer was case markers, which predominated in both the studies, as illustrated figure 2. Here, case markers could not be considered to be Talmy's "satellites", as the former did not occur in constructions with verbs. In Telugu, case markers (for example, the accusative *-ni/-nu* and the dative *-ki/-ku*) always occur in constructions with nouns. Of particular interest in this paper are those case markers that express Path, such as the dative case and the ablative case. Such case markers have not received adequate attention in the literature on Motion Event Typology (Naidu et al. 2022). In other words, case markers are the only category that shoulder Path in Telugu and have not received sufficient attention in the Talmian work. Concerning the expressions of Region, Telugu employs a set of spatial nouns to express Region. These spatial nouns, unlike other nouns, do not inflect for number; that is, singular versus plural. Nor do they carry any agreement with the main verb (Krishnamurti, Gwynn 1985). Some of them can be used independently with appropriate case markers (*bayaṭa-ku* in *nēnu bayaṭa-ku waccānu* 'I outside-DAT came'), while others are always dependent on nouns (*-lō* in *nēnu imṭ-lō parigattānu* 'I home-to ran'; **nēnu lō parigettānu*). Since they are limited in number, they may be considered to be 'closed-class forms' in Telugu. However, it may be noted that this closed class can be distinguished from other closed forms, such as case markers, for multiple reasons such as carrying 'noun status', inflecting for case markers, and being independent, as illustrated above. It should be emphasised that no AM or NAM was described without a Region/Landmark expression, thus suggesting that such expressions are equally as important as any other expressions of Motion component, such as Path expressions. By contrast, Talmian studies focused only on path verbs and satellites **[fig. 2]**.
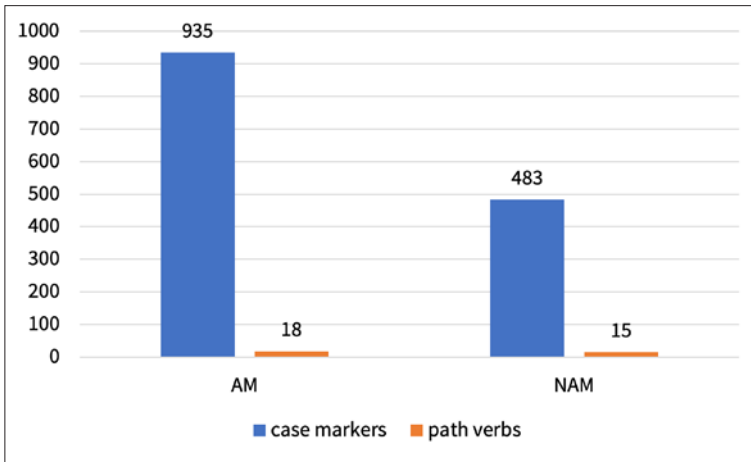
Figure 2   Path-expressing case markers and Path verbs in the AM and NAM data

Drawing on these typological features, I propose that these features are not simply characteristic features of the AM domain, as demonstrated in Naidu et al. 2018, Naidu et al. 2022, Zlatev et al. 2021, but are also characteristic features of the NAM domain. In this regard, the two domains were consistent in showing similarity, which supports the earlier proposal that was based on the AM data indicating that the use of deictic verbs, case markers, and spatial nouns were some of the defining characteristics of the fourth cluster in post-Talmian motion typology. In addition, Region and/or Landmark expressions, together with case markers, were the most frequent linguistic patterns in the two studies; they exceeded any other expressions, as illustrated in figure 3, resulting in *adnominal* dominance over *adverbal* dominance, which distinguishes Telugu from other languages such as Thai, Swedish and French, as the latter are typical *adverbal-dominant* languages. What are the implications of these typological features? One natural implication is that they respond to critics who may say that simply because "Telugu does not fit the known clusters [i.e. SF and VF] is not in itself evidence that it belongs to a different typological cluster – it could just present its own idiosyncratic pattern"; this is not true, as features were found in more than one domain, namely in AM and in NAM. The second implication is that other Dravidian languages and Indo-Aryan languages may have similar tendencies, as illustrated in (17)-(32), which needs to be investigated in future studies via experimental methods, corpus data, or other means. Since Kannada, Kurukh, Malayalam, Tamil (Dravidian), Bengali, Hindi, Marathi, and Sambalpuri (Indo-Aryan)

exhibit similar patterns (such as use of deictic verbs, case markers, Region expressing nouns) in AM and NAM domains (17)-(32), experimental, corpus and comparative studies along these lines are strongly anticipated in future studies **[fig. 3]**.
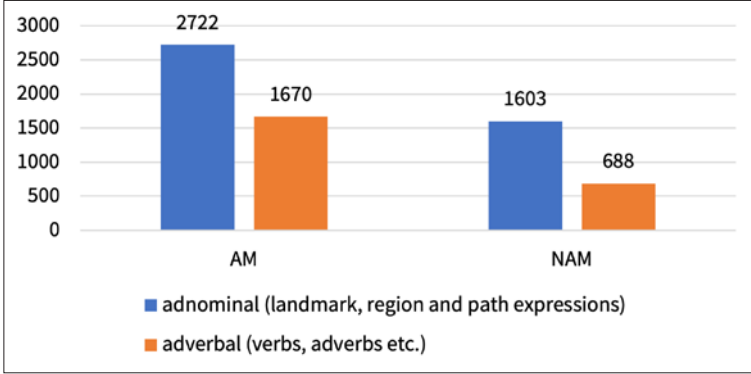

Figure 3   Adnominal and adverbal expressions in the AM and NAM data

6.1 AM Patterns in other Dravidian and Indo-Aryan Languages

(17)	*obba*	*huḍuga*	*kōṇey-oḷa-ge*		*hō-da-nu*
	one	boy	room-in-DAT		go-PST.3SG.M
		Figure	Landmark-Region:In-Path:End	Direction+MotionFoR:VC

'A boy went into the room'.

Kannada

(18)	*onṭe*	*ālās*	*koṭhri-nu*		*ker-a-s*
	one	man	room-DAT		go-PST.3SG.M
		Figure	Landmark-Path:End-Region:In	Direction+MotionFoR:VC

'A man went into the room'.

Kurukh

(19)	*oru*	*āṇkuṭṭi*	*muṛi-yil-ēkke*		*pō-yi*
	one	boy	room-LOC-DAT		go-PST
		Figure	Landmark-Region:In-Path:End	Direction+MotionFoR:VC

'A boy went into the room'.

Malayalam

(20) *oru* *payyaṉ* *aṛai-kk-uḷ* *pō-ṉāṉ*
one boy room-DAT-in go-PST.3SG.M
Figure Landmark-Path:End-Region:In Direction+MotionFoR:VC
'A boy went into a room'.

Tamil

(21) *ēkaṭā* *chēlē* *rum-ē* *gēla*
one boy room-in go.PST.3SG.M
Figure Landmark-Region:In Direction+MotionFoR:VC
'A boy went to the room'.

Bengali

(22) *laḍkā* *kamrē-mē* *gayā*
boy room-in go.PST.3SG.M
Figure Landmark-Region:In Direction+MotionFoR:VC
'A boy went into the room'.

Hindi

(23) *ēka* *mulagā* *khōlī-la* *gēl-ā*
one boy room-DAT go-PST.3SG.M
Figure Landmark-Path:End Direction+MotionFoR:VC
'A boy went to the room'.

Marathi

(24) *gute* *bāḷaka* *kuthi-ku* *ga-lā*
one boy room-DAT go-PST.3SG.M
Figure Landmark-Path:End Direction+MotionFoR:VC
'A boy went to the room'.

Sambalpuri

6.2 NAM Patterns in Other Dravidian and Indo-Aryan Languages

(25) *dāri* *guhe-yoḷa-ge* *hōgu-tta-de*
road cave-in-DAT go-PRS.3SG.M
Figure Landmark-Region:In-Path:End Direction+MotionFoR:VC
'The road goes into the cave'.

Kannada

(26) *ā* *dahre* *māḍa-nu* *kāl-i*
that road cave-DAT go-PST.3SG.N
Figure Landmark-Path:End Direction+MotionFoR:VC
'A road goes into the cave'.

Kurukh

(27) *ī*   *wazhi*   *guha-yil-ēkke*   *ānu*   *pō-kunnathu*
    this   road   cave-LOC-DAT   COP   go-PRS
        Figure Landmark-Region:In-Path:End   Direction+MotionFoR:VC
    'This road goes into the cave'.

                                               Malayalam

(28) *inta*   *cālai*   *kukai-kku-uḷḷe*   *pō-kiṟ-atu*
    this   road   cave-DAT-in   go-PRS-3SG.N
        Figure   Landmark-Path:End-Region:In   Direction+MotionFoR:VC
    'This road goes into the cave'.

                                               Tamil

(29) *mʊmbaɪ*   *ṣṭeɪʃən-thēkē*   *ek*   *rēla*   *lā'ina*
    Mumbai   station-ABL   one   railway line
    Landmark-Path:Begin   Figure
    hāẏadrābādae   *Jāy*
    Hyderabad   go.PRS
    Landmark   Direction+MotionFoR:VC
    'A railway line goes from the Mumbai station to Hyderabad'.

                                               Bengali

(30) *mʊmbaɪ*   *ṣṭeɪʃən-se*   *ek*   *reɪlweɪ*   *lāin*
    Mumbai   station-ABL   one   railway   line
    Landmark-Path:Begin   Figure
    haydarābāda-(ko)   *jātī hai*
    Hyderabad-DAT   go.PRS
    Landmark-Path:End   Direction+MotionFoR:VC
    'A railway line goes from the Mumbai station to Hyderabad'.

                                               Hindi

(31) *mʊmbaɪ*   *ṣṭeɪʃən-wərun*   *ek*   *relwe*   *lain*
    Mumbai   station-ABL   one   railway line
    Landmark-Path:Begin   Figure
    haydarābāda-la   *jāic-i*
    Hyderabad   go-PRS.3SG.F
    Landmark-Path:End   Direction+MotionFoR:VC
    'A railway line goes from the Mumbai station to Hyderabad'.

                                               Marathi

(32) *mumbāi* *ṣṭēsana-ru* *gute* *relwe* *lāin* *hāidrābāda* *ʤaːisi*
    Mumbai   station-ABL   one   railway line   Hyderabad   go.PRS
    Landmark-Path:Begin   Figure   Landmark   Direction+MotionFoR:VC
    'A railway line goes from the Mumbai station to Hyderabad'.

                                               Sambalpuri

In addition to the similarities and the implications thereof, I found differences in the AM and NAM data with regard to Manner of Motion expressions. This was the only qualitative difference that was found in the data. Manner of Motion was only present in the AM data. As shown in the previous section, there was only one form of Manner, and no adverbs were found in the NAM data. This finding is in line with the literature on NAM that states that Manner verbs have constraints (Matsumoto 1996), and are highly restricted in general. However, one may not jump to the conclusion that Manner of Motion is completely unavailable for NAM in Telugu, as factors such as the method and stimuli might have been limitations resulting in the poor presence in the current data. For example, the stimuli did not really include 'a running road', a 'crawling bridge' or the like. In fact, it may be extremely challenging to design such stimuli.[8] Even if we attempt to do so, participants may prefer a deictic verb or similar to a Manner verb due to the cognitive reasons that are explained in the next paragraph. An in-depth reflection may be necessary to produce an experimental design that can reflect a 'running road' to incorporate Manner components in the stimuli. Then, one may explore the aspect of Manner in NAM with Manner-oriented stimuli.

Another theoretical explanation for the infrequent use of Manner in NAM is the conceptualisation of the NAM experience by human beings. In other words, the Manner of Motion is deeply rooted at the experiential level. That is, as language speakers, we typically and frequently attribute Manner to animate objects. For example, a person can walk, crawl, rush, run, climb, and so on. We perform the actions. We experience them. We conceptualise them. We observe them. By contrast, we do not typically attribute Manner to inanimate objects as frequently as we do to animate objects. An example is a 'road' which, by itself, cannot perform different kinds of Manner. Nor do we typically observe a 'road's' walk, run, and so forth. Therefore, there is less Manner of Motion in NAM.

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8 However, it is relatively easier to create an AM video clip depicting "a running boy" or a "crawling baby".

7   Conclusion

The main objective of this paper was to argue that the typological features of Telugu are not confined to the AM domain, but are also mirrored in the NAM domain, thus suggesting that the features are a tendency at least in two domains in Telugu. The features may be deemed to be core form classes in expressing both domains in Telugu. The common typological features in both domains were as follows: the participants frequently employed deictic verbs for Motion, case markers for Path, spatial nouns for expressing Region, and a smaller number of Path verbs. The paper then argued that these typological features had implications for Motion event typology in the post-Talmian approach. First, given these empirical findings, neither Talmy's binary typology nor Slobin's trichotomy is adequate for Telugu. Furthermore, these features support earlier proposals that were based on the AM data (Naidu et al. 2018; Naidu et al. 2022), namely that Telugu, with its distinct features, may call for a fourth cluster in the post-Talmian Motion Event Typology. The study also categorically presented a proposal that these defining characteristics in the Telugu AM and NAM studies may also be found in other South Asian languages, such as Kannada, Kurukh, Malayalam, Tamil (Dravidian), Bengali, Hindi, Marathi, and Sambalpuri (Indic), which should be investigated thoroughly in future research.

In addition to the similar patterns, the study found that there were differences in AM and NAM with regard to expressions of Manner of Motion, as the latter had almost no Manner information in Telugu. Explanations for the lack of Manner expressions in NAM are twofold. One is that it is relatively in agreement with the NAM literature, which demonstrated that the Manner of Motion is highly restricted across languages. The second explanation is that, as language speakers, we do not typically experience or conceptualise Manner as being attributed to inanimate objects such as roads, unlike the case for human beings. Therefore, Manner occurring less often in NAM is deeply rooted in our cognition.

In conclusion, the paper presented the characteristic features of AM and NAM in Telugu that may be considered to be defining characteristic features of some, if not all, South Asian languages, given their linguistic convergence (Emeneau 1956; Masica 1976); this should be investigated in future studies.

Appendix A: AM Stimuli

1   Woman Walks Up Hill
2   Girl Hops From Tree
3   Man Runs Towards
4   Girl Walks Out of Room
5   Man Runs To Tree
6   Boy Runs Away
7   Man Walks Down Hill
8   Woman Walks Out of Hut
9   Boy Puts Cat Into Car
10 Woman Runs Straight Towards
11 Man Throws Ball Up
12 Boy Walks Down Hill
13 Boy Walks Into Room
14 Woman Walks Out of Room
15 Boy Climbs Down Tree
16 Girl Rushes Into Hut
17 Girl Takes Cat Out of Car
18 Girl Throws Ball From Cliff
19 Man Walks Into Garage
20 Boy Climbs Up Cliff

21 Man Puts Cat Into Car
22 Girl Runs Down Hill
23 Boy Throws Ball To Tree
24 Woman Takes Cat Out of Car
25 Man Runs Up Hill
26 Man Walks Into Room
27 Woman Runs From Tree
28 Man Makes Dog Come To Him
29 Girl Walks Up Hill (1pp-camera)
30 Girl Kicks Ball From Bench
31 Girl Rolls Toy Car Towards
32 Boy Rushes Out of Garage
33 Boy Hops To Tree
34 Woman Throws Ball From Tree
35 Man Kicks Ball To Bench
36 Woman Makes Dog Come To Her
37 Man Runs Straight Away
38 Boy Rolls Toy Car Away

(Zlatev et al. 2021, 90)

Appendix B: NAM Stimuli

	Target	Control
Spatially extended objects (affordable)	1. Bridge 1pp 2. Bridge 3pp 3. Cave 1pp 4. Cave 3pp 5. Ladder 1pp 6. Ladder 3pp 7. Stairs 1pp 8. Stairs 3pp 9. Tunnel 1pp 10. Tunnel 3pp	21. Apple Branch 22. Ball umbrella 23. Bench Park 24. Bin Table 25. Cactus Desert 26. Cloud Mountain 27. Flower vase 28. Gum table 29. House Buildings 30. Lighthouse Cliff 31. Moon Mountains
Spatially extended objects (non-affordable)	11. Chain 1pp 12. Chain 3pp 13. Crack 1pp 14. Crack 3pp 15. Fence 1pp 16. Fence 3pp 17. Line buildings 1pp 18. Line buildings 3pp 19. Ray of light 1pp 20. Ray of light 3pp	32. Plant Rock 33. Sun Skyscraper 34. TV house 35. Temple Forrest 36. Tent 37. Volcano Lake 38. Lamp bed 39. Lamp shelf 40. Tree meadow

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Abbreviations

3	third person
ABL	ablative
COP	copula
DAT	dative
F	feminine
FUT.HAB	future habitual
GER	gerund
LOC	locative
M	masculine
N	neuter
PL	plural
PROG	progressive
PRS	present
PST	past
PTCP	participle
SG	singular

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Gérard Fussman (1940-2022)

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Gérard Fussman was born on 17 May 1940 in Lens, north-eastern France, into a family of German Jewish refugees, fleeing Nazi Germany during the Second World War. From his earliest steps, he showed a brilliant and lively, if admittedly undisciplined, intelligence. Having already learned to read and write from the age of five, he skipped two years of primary school. At the time, he lived with his family in Bully-les-Mines, near Lens. At the college of Condorcet in Lens, he was able to study Greek, which was not part of the normal school curriculum, thanks to the interest of one of his teachers. These first steps into the world of ancient languages were also fundamental for Gérard's future career: encouraged to continue his studies at the School of Athens, he moved to Paris to the Lycée Louis-le-Grand to attend preparatory classes at the École normale supérieure in rue d'Ulm, where he would enter without major problems. Here he met teachers who knew how to encourage him. Things, however, would not go the way Gérard had planned: he would never go to the School of Athens. In return, he agreed to follow, with his wife and new-born daughter, Daniel Schlumberger to Afghanistan, where he became Archéologue-adjoint at the DAFA (Délégation Archéologique Française en Afghanistan) at the age of 22, after having obtained the agrégation in lettres classiques. Based on his self-taught reading of Georges Dumézil's *Jupiter, Mars, Quirinus*, he began studying Sanskrit at the Faculty of Arts at the age of 18, with teachers of the calibre of L. Renou.

For three years he remained in Afghanistan, where he was able to work on the excavations at Surkh Kotal and inaugurate his scientific

studies: in 1965, as a result of this mission, he published *Le trésor monétaire de Qunduz* [1][1] jointly with Raoul Curiel. This first volume was followed by *Monuments bouddhiques de la région de Caboul*, I, *Le monastère de Gul Dara* [13] and the two volumes on *Surkh Kotal en Bactriane* [32] and [72]. In addition, the volume published jointly with R. Curiel also inaugurated a long series of publications in the numismatic field: see in particular [7], [31], [48], [52], [55], [73], [76], [80].

The publication of his first scientific article, dedicated to the topography of ancient Kandahar, also dates back to this period: "Notes sur la topographie de l'ancienne Kandahar" [2].

After this long stay in Afghanistan, he moved to Cambodia for two years, to Phnom Penh, as a professor of French in a high school and as an adjunct professor of Sanskrit at the university. After a year of teaching in a French high school, he was finally appointed attaché de recherche at the CNRS (Centre National de la Recherche Scientifique), where he stayed between 1968 and 1972. During this period, he concentrated on his doctoral thesis, which he defended on 12 June 1972 at the Université Sorbonne-Nouvelle (Paris III). His doctoral work remains one of the most important on the linguistic geography of the Dardic and Nuristani areas. *The Atlas linguistique des parlers dardes et kafirs*, in two volumes [6], indeed demonstrates great scientific maturity and intellectual honesty.

In the *Atlas*, Fussman took materials collected by Georg Morgenstierne and made available to him by the author, as well as unpublished notes by Georg Buddruss. The result is "an atlas which deals mainly with phonetics and lexicology, and which, unfortunately, does not include proper grammatical maps (pronouns, verb forms, syntactic relations)" (5), whose vocation is "to serve historical studies: transformation of phonemes, changes in meaning, if possible filiation of languages [...], dominant civilizations, routes and reasons for borrowing, ancient extension of languages, etc." (5-6),[2] and addressed not only to linguists, but also to historians and ethnologists. For his work, Fussman was able to benefit from the advice and material support of Georges Redard and Charles-Martin Kieffer and the *Atlas linguistique de l'Afghanistan*.

In 1972, Fussman's academic career took its 'official' start: in this year, he was appointed maître de conférences in Sanskrit at the Uni-

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1 At the end of this article you will find G. Fussman's bibliography, arranged chronologically and numbered. The numbers in square brackets refer to the bibliographical title.

2 "[A]tlas qui traite surtout de phonétique et de lexicologie, et qui, malheureusement, ne comporte pas de cartes proprement grammaticales (pronoms, formes verbales, relations syntaxiques) [...] servir à des études historiques: transformation de phonèmes, changements de sens, si possible filiation des langues [...], civilisations dominantes, routes et motifs des emprunts, extension ancienne des parlers, etc.". All translations are by the Author.

versity of Strasbourg, where he remained until 1984, the year of his appointment at the Collège de France. In the meantime, he devoted himself to the publication of a series of articles on philological subjects, which continued even after his time in Strasbourg had ended: between 1969 and 1998, Fussman published no less than 25 articles on the edition of Kharoṣṭhī, kuṣāna, saka, etc. inscriptions. See, in particular: [3-4], [11], [17], [22-24], [26-28], [38], [42], [43-46], [51], [64-66], [69], [100], [116], [125], [217].

In 1984, after 12 years at the University of Strasbourg, he was appointed Professor at the Collège de France, holding the chair 'Histoire du Monde indien'. Not without some problems: as he himself recounted in the 2011 afterword to the Collège de France's republication of his 1984 inaugural lecture (see [181]), a smear campaign began against him, among other things alleging his incompetence as an Indianist. This accusation, though totally untrue, nevertheless concealed a somewhat problematic reality: the change of name of the chair at the Collège de France, from 'langue et littérature sanscrites' to 'histoire du monde indien'. Sanskrit, as complained by other denigrators of Fussman, was in danger of disappearing from the Collège. The Sanskrit chair had been created at the Collège in 1815 for Léonard de Chézy, followed by Eugène Burnouf (1832), Théodore Pavie (1853), Édouard Foucaux (1857), Sylvain Lévi (1894) and Jules Bloch (1937). Already in 1952, Jean Fillozat had changed the name of the chair to 'Langues et littératures de l'Inde' for the first time, but the change made by Gérard Fussman was even more radical and certainly caused some concern. Fussman, formally the successor of Claude Lévi-Strauss, was the heir of Jean Fillozat himself and held the chair until his retirement in 2011. In his inaugural lecture in 1984, he defended his choice brilliantly:

> The adoption of the new title means above all that there is a history of the Indian world, that is to say, perceptible and intelligible developments. None of the great Indianists who have taught at the Collège de France has ever doubted this.[3] (See [39])

The demonstration he provides was conclusive and his examination, still valid today and of constant teaching, deserves to be quoted in full:

> Today, it is unfortunately more necessary than ever to repeat that there is no history without a philological approach to the text and that India is no exception to the rule that any document, whatever

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[3] "L'adoption du nouvel intitulé signifie surtout qu'il existe une histoire du monde indien, c'est-à-dire des évolutions perceptibles et intelligibles. Aucun des grands indianistes qui ont enseigne au Collège de France n'en a jamais douté".

it may be, must be criticised before being used. However, the majority of written documents concerning India before Islam are in Sanskrit, or are interpreted from Sanskrit, and it is understandable that Sanskrit remains the intangible basis of our studies.

But I will not be made to go beyond this statement. Sanskrit is not the whole of India. Apart from the fact already mentioned that Sanskrit itself, and the culture of which it is the medium and symbol, have not remained unaffected by the influence of non-Indo-Aryan India, we know well, thanks to the work of ethnologists and sociologists, that Sanskrit texts, even normative or pseudo-descriptive, give us an incomplete and often inaccurate idea of Hindu society. They are not sufficient to explain its functioning; even less do they regulate it, as British administrators soon realised. It is also clear, as Burnouf has already pointed out, that Sanskrit texts often escape any chronology, that we are not able to date a passage of the Mahābhārata to within eight centuries, and that very important events in the history of India, Greek invasions, the Kushan conquest, Muslim victories, and the appearance and disappearance of Buddhism, are – at best – barely mentioned. As a historical source, a Sanskrit document is often of less value than a Middle Indian, Greek, Chinese or Persian document. […] As far as I am concerned, I would never dare to write anything that would make one think that the India sometimes called Sanskritised, whether it be North or South Hindu, Buddhist or Jaina, is the only true India, that the Mughal monuments are foreign bodies in India, that Akbar and Aurangzeb are less Indian rulers than Aśoka or Virūḍhaka, and which would strengthen in their opinion those who proclaim today that a Muslim Bihari is less deeply Indian than a Hindu Bihari. Need it be recalled that the Āryas were themselves invaders? Moreover, it would be to deprive India of a great part of its greatness to forget that it has produced some of the finest monuments of the Persian and Turkish languages, and that its Sufi spirituality deserves as much respect as Hindu spirituality.

I would therefore say that the history of the Indian world includes, by definition, the history of the powers that be that straddle India's geographical borders. It would be reductive, and scientifically dangerous, to study only the Indian, or non-Indian, aspect of these powers. Therefore, just as an Iranist might glance at what was happening in Sindh or Panjāb, so a historian of India might look at Greek Bactria or the ethnogenesis of the Kushans. And here is Central Asia annexed *ipso facto* by the historian of the countries it has conquered. India *capta ferum victorem cepit*. The fact is less scandalous than it seems because the erasure of political frontiers favoured at the same time the expansion beyond the Hindu Kush of cults and languages originating in India. The historian of the Indian world is thus by necessity and by vocation led to deal with

cultures that are geographically extra-Indian, but marked by the use of an Indian language and script, Sanskrit or Middle Indian on the one hand, Brāhmī or Kharoṣṭhī on the other, and influenced by religions, and therefore cultures, originating in geographical India: Buddhism or Hinduism. The domain thus defined is immense. It covers the whole of Central Asia, Tibet, China, Japan, Indonesia and Indochina. No Indianist can ignore it.

[…] Writing the history of the Indian world requires the collaboration of a great many specialists and this collaboration, as I have said, must be international. Most problems can only be solved by teamwork.

And so, as soon as I am installed in my chair, in this temple of individualism that is the Collège de France, I start advocating teamwork. I do so only because it is a fact: whether or not I hold the chair at the Collège, the development of a history of India can only be achieved through constant dialogue between specialists.

[…] This is what I expect from my entry into the Collège de France: the increased possibility of giving back to others the help I myself have received from my masters, and the marginality that sometimes allows me to get to the heart of the problems. (See [39])[4]

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4 "Aujourd'hui, il est malheureusement plus nécessaire que jamais de répéter qu'il n'est pas d'histoire sans une approche philologique du texte et que l'Inde n'échappe pas à la règle qui veut que tout document, quel qu'il soit, doive être critiqué avant d'être utilisé. Or la majeure partie des documents écrits concernant l'Inde avant l'Islam est en sanskrit, ou s'interprète à partir du sanskrit, et l'on conçoit que le sanskrit reste la base intangible de nos études.

Mais on ne me fera pas aller au-delà de cette affirmation. Le sanskrit n'est pas toute l'Inde. Outre le fait déjà évoqué que le sanskrit lui-même, et la culture dont il est le médium et le symbole, ne sont pas restés sans subir l'influence de l'Inde non-indo-aryenne, nous savons bien, grâce au travail des ethnologues et des sociologues, que les textes sanskrits, même normatifs ou pseudo-descriptifs, nous donnent une idée incomplète et souvent inexacte de la société hindoue. Ils ne suffisent pas à en expliquer le fonctionnement; encore moins le régissent-ils comme s'en sont vite aperçus les administrateurs britanniques. Il est patent aussi, Burnouf le rappelait déjà, que les textes sanskrits échappent souvent à toute chronologie, qu'on n'est pas capable de dater un passage du *Mahābhārata* à huit siècles près, et que des événements très importants de l'histoire de l'Inde, invasions grecques, conquête kouchane, victoires musulmanes, apparition et disparition du bouddhisme y sont – au mieux – à peine évoqués. Comme source historique, un document sanskrit a souvent moins de valeur qu'un document moyen-indien, grec, chinois ou persan. […] En ce qui me concerne, je n'oserai jamais écrire quoi que ce soit qui puisse faire penser que l'Inde parfois dite sanskritisée, qu'elle soit hindoue du Nord ou du Sud, bouddhiste ou jaina, est la seule Inde vraie, que les monuments moghols sont des corps étrangers en Inde, qu'Akbar et Aurangzeb sont des souverains moins indiens qu'Aśoka ou Virūḍhaka, et qui renforcerait dans leur opinion ceux qui proclament aujourd'hui qu'un Bihari musulman est moins profondément indien qu'un Bihari hindou. Faut-il rappeler que les Āryas étaient eux-mêmes des envahisseurs? Ce serait par ailleurs priver l'Inde d'une grande part de sa grandeur que d'oublier qu'elle a produit quelques-uns des plus beaux monuments de la langue persane et de la langue turque, et que sa spiritualité soufie mérite autant le respect que la spiritualité hindoue.

It was with this spirit, both determined and curious, secure in his basic assumptions and yet open and able to learn, that Gérard Fussman pursued his research and tackled his many academic assignments. It was in his inaugural lecture that he emphasised the importance of internationalisation in research and this will probably remain one of his fixed points until the end of his days.

If, on the one hand, Gérard Fussman had no qualms about extinguishing enthusiasm by virtue of his convictions, without making concessions to anyone, without any malice but with the austerity of the consistent rationalist to the end, on the other hand, he did not hesitate to be open to novelties and studies that broadened his knowledge and to recognise their scope. I have personal examples of both attitudes, evidence of a profound intellectual honesty. In 2014, in response to a request from me for advice on the advisability of working on a "Linguistic Atlas of the Swāt Valley", he replied in these terms:

> My dear colleague,
>
> I don't know what a linguistic atlas of the lower Swat valley would look like. There would be many Pashto names of recent date. In any case, it is not necessary to go there, especially as the region is very dangerous and the Pakistani army is in open warfare with even more extremists than itself. All you need to do is consult the Gazetteers and detailed maps. This can be done in Paris.

[...] Je dirai donc qu'appartiennent par définition à l'histoire du monde indien celle des pouvoirs établis à cheval sur les frontières géographiques de l'Inde. Il serait réducteur, et scientifiquement dangereux, d'étudier de ces pouvoirs que l'aspect indien, ou non-indien. C'est pourquoi, de même qu'il arrive à un iranisant de jeter un coup d'œil sur ce qui se passait dans le Sind ou le Panjāb, il arrive qu'un historien de l'Inde s'intéresse à la Bactriane grecque ou à l'ethnogenèse des Kouchans. Et voici l'Asie centrale annexée *ipso facto* par l'historien des pays qu'elle a conquis. *India capta ferum victorem cepit.* Le fait est moins scandaleux qu'il y paraît car l'effacement des frontières politiques favorisait au même moment l'expansion au-delà de l'Hindou-Kouch de cultes et de langues originaires de l'Inde. L'historien du monde indien est ainsi par nécessité et par vocation amené à traiter de cultures géographiquement extra-indiennes, mais marquées par l'utilisation d'une langue et d'une écriture indiennes, sanskrit ou moyen-indien d'une part, brāhmī ou kharoṣṭhī d'autre part, et influencées par des religions, et donc des cultures, originaires de l'Inde géographique: bouddhisme ou hindouisme. Le domaine ainsi défini est immense. Il occupe toute l'Asie centrale, le Tibet, la Chine, le Japon, l'Indonésie, l'Indochine. Aucun indianiste ne peut s'en désintéresser.

[...] Écrire l'histoire du monde indien exige la collaboration de très nombreux spécialistes et cette collaboration, je l'ai dit, doit être internationale. La plupart des problèmes ne peuvent être résolus que par un travail en équipe.

Et voici donc qu'à peine installé dans ma chaire, dans ce temple de l'individualisme qu'est le Collège de France, je me mets à prôner un travail d'équipe. Je le fais seulement parce qu'il s'agit de constater un fait: chaire du Collège ou pas, l'élaboration d'une histoire de l'Inde ne peut se faire que par un dialogue constant entre spécialistes.

[...] Voilà donc ce que j'attends de mon entrée au Collège de France: la possibilité accrue de rendre à d'autres l'aide que j'ai moi-même reçue de mes maîtres, et la marginalité, qui permet parfois d'aller au cœur des problèmes".

Sincerely.
GFussman
(Letter of the 27 January 2014)[5]

In return, upon receiving the volume on Swāt toponymy, *Toponymy of the Swāt Valley. Linguistic Archaeology* (Lahore: Sang-e Meel, 2020, 354 pp.), he wrote to me:

My dear colleague,

When I first came to Afghanistan in 1960, I told Dr Schlumberger that I would learn Pashto. He replied, "Don't do it, it's a useless language that is on the way out, soon to be replaced everywhere by Persian". I was young enough and stupid enough to believe him. It was when I travelled alone a few years later that I realised my mistake. But I have never had the time since to learn Pashto (and many other languages). By 1970 I knew that Pashto was a language on the rise. The proof is in the Taliban today.

So I read your book to learn, and I learned a lot. What a great work! I was especially interested in the introduction. The maps are incredibly numerous and very clear. I am sure that the Pakistani administration does not have such accurate and now, thanks to you, easily usable documentation. I am afraid that they are not using your book. I am also pleasantly surprised at the quality of work provided by Sang-e Meel, except for the photos. They now rival the best Indian printers.

Your book is a good example of the internationalisation of scientific work, published in English by a French-speaking Italian, thanks to the old and new IsMEO, with a participation of INALCO, printed in Pakistan, and covering Pakistan and beyond because the explanations you give are valid for all the Pashtun-speaking regions.

So, a very good work for which I congratulate you. I am sincerely grateful to you for sending it to me.

With best regards.
G.Fussman
(Letter of the 28 August 2021)[6]

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5 Mon cher collègue,

Je ne sais pas ce que donnerait un Atlas linguistique de la basse vallée du Swat. Il y aurait beaucoup de noms pashtos de date récente. En tout cas, il n'est pas nécessaire de se rendre sur place, d'autant que la région est très dangereuse et que l'armée pakistanaise y est en guerre ouverte avec les encore plus extrêmistes qu'elle. Il suffit de consulter les Gazetteers et des cartes détaillées. Cela peut se faire à Paris.

Cordialement.
GFussman

6 Mon cher collègue,

Lorsque je suis venu pour la première fois en Afghanistan, en 1960, je dis à D. Schlumberger que j'allais apprendre le pashto. Il me répondit « n'en faites rien, c'est

In both cases he demonstrated open-mindedness and concrete realism.

As early as his Strasbourg period, he began to deal with the history and religions of India, an interest that, as mentioned, would later flow into the name of his professorship at the Collège de France: 'histoire du monde indien'. A long series of articles in these areas will enrich his bibliographic production. See in particular: [14-16], [18-21], [24], [29], [36-37], [40], [47], [50], [53-54], [56], [59], [61], [63], [67], [77-78], [85-86], [104-105], [114], [118], [120], [122], [128], [137], [140], [144], [151-153], [163], [165], [169], [195], [202].

His courses at the Collège were naturally important. In them, Fussman dealt with the history of India, in his own way, i.e., according to what he stated in his inaugural lecture: start from the sources, start from the philological analyses, foundation and basis of any historical reconstruction. From 1984 to 2011, the year of his retirement, various courses followed one another, some of which we can still find recorded on the website of the Collège de France.

La notion d'unité indienne dans l'Antiquité, I, Les auteurs grecs et latins (1985) [41]; La notion d'unité indienne dans l'antiquité. II. Les sources indiennes (1986) [49]; La notion d'unité indienne dans l'antiquité. III: Les populations indiennes dans les textes bouddhiques et épiques. Āryas et Mlecchas (1987) [58]; Les populations de l'Inde ancienne d'après les textes (1988) [60]; Les premiers systèmes d'écriture en Inde (1989) [68]; Le Lalitavistara comme texte. Séminaire: Bronzes bouddhiques du Cachemire et de la Haute vallée de l'Indus (1990) [75]; Procédés littéraires et conceptions reli-

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une langue qui ne sert à rien et qui est en voie de disparition, bientôt remplacée partout par le persan ». Je fus assez jeune et assez bête pour le croire. C'est en voyageant seul, quelques années plus tard, que je compris mon erreur. Mais je n'ai jamais eu le temps depuis d'apprendre le pashto (et bien d'autres langues). Dès 1970 je savais que le pashto était une langue en progression. A preuve, les Talibans aujourd'hui.

C'est dire que j'ai lu votre livre pour m'instruire, et je me suis beaucoup instruit. Quel énorme travail! L'introduction m'a surtout intéressé. Les cartes sont incroyablement nombreuses et très claires. Je suis sûr que l'administration pakistanaise ne possède pas une documentation aussi précise et maintenant, grâce à vous, aussi facilement utilisable. Je crains malheureusement qu'elle n'utilise pas votre livre. Je suis en outre agréablement surpris de la qualité du travail fourni par Sang-e Meel, sauf pour les photos. Ils rivalisent maintenant avec les meilleures imprimeries indiennes.

Votre livre est un bon exemple de l'internationalisation du travail scientifique, publié en anglais par un Italien francophone, grâce à l'IsMEO ancienne et à la nouvelle IsMEO, avec une participation de l'INALCO, imprimé au Pakistan, et portant sur le Pakistan et au-delà car les explications que vous donnez valent pour toutes les régions pashtophones.

Donc un très beau travail dont je vous félicite. Je vous suis sincèrement reconnaissant de me l'avoir envoyé.

Avec meilleurs sentiments.

G.Fussman

gieuses dans le Lalitavistara. Séminaire: Villes indiennes, prolégomènes (1991) [81]; Chocs de cultures: Grecs, Indiens et Kouchans aux alentours de notre ère. Séminaire: documents sur le souverain indo-grec Ménandre (1992) [84]; Chocs de cultures: Grecs, Indiens et Kouchans aux alentours de notre ère. Deuxième partie: aux origines de l'art du Gandhāra. Séminaire: Inscriptions inédites du haut-Indus: sites de Thor et Shatial (1993) [91]; Routes et pseudo-routes de la soie (I). Séminaire: Documents d'urbanisme indien (1994) [101]; Routes et pseudo-routes de la soie (II): sites archéologiques de la Karakorum Highway (Pakistan). Séminaire: Premiers résultats de l'étude de la ville de Chanderi (Inde) (1995) [102]; Les Saddharmapuṇḍarīka sanskrits (I). Séminaire: Traduction et interprétation des inscriptions persanes de Chanderi (Inde) (grâce à la collaboration de Mohammad Amir-Moezzi) (1996) [111]; Les Saddharmapuṇḍarīka sanskrits (II). Séminaire: Chanderi: medieval and contemporary socio-economic data (avec la participation du Prof. K.L. Sharma) (1997) [113]; Kaniṣka et la chronologie de l'Inde ancienne. Séminaire: Étude de documents en relation avec le cours (1998) [115]; Le texte sanskrit du Sukhāvatīvyūha. Séminaire: Analyse de l'espace urbain à Chanderi à partir de documents numérisés (1999) [119]; Problèmes de méthode en histoire de l'Inde. Séminaire: Les Aryas en Asie Centrale, en Iran et en Inde (2001) [127]; De l'Afghanistan et des Afghans (2002) [135]; Histoire des religions anciennes de l'Afghanistan. Séminaire: Documents bouddhiques d'Afghanistan et des pays voisins (2003) [139]; La progression du bouddhisme en Inde du nord-ouest. Séminaire: Les bibliothèques des monastères bouddhiques indiens (2004) [143]; Le bouddhisme sur la rive droite de l'Oxus. Séminaire: Données nouvelles sur l'histoire de Termez et sur le bouddhisme en Bactriane du nord (Ouzbékistan) (2006) [157]; Les Guptas et le nationalisme indien. Séminaire: Lecture d'inscriptions guptas et kouchanes (2007) [160]; Lecture du texte sanskrit du Vimalakīrtinirdeśa (2008) [161]; Lecture du texte sanskrit du Vimalakīrtinirdeśa (suite) (2009) [164]; Bilan de soixante années de recherches sur l'histoire de l'Inde. Séminaire: Oeuvres d'art indien ancien dans les collections américaines (2010) [168]; Le Gandhāra, terre de passage, d'échanges et de création. Séminaire: Étude de documents en rapport avec le cours (2011) [175] (cf. also [207]).

The question of the internationalisation of research and, at the same time, attention to what is considered marginal have always been at the centre of his interests, so much so that he organised a conference dedicated precisely to the *Mondialisation de la recherche. Compétition, coopérations, restructurations* in 2010. Taking stock of his scientific activity, he himself noted a great dispersion of topics, due, he humbly said, to the fact that many of his published works had been commissioned.

And yet, far from being fortuitous, it is precisely the heterogeneity of his scholarly output that accounts for his attention to marginality.

In his later years, after his retirement, while continuing to work on scientific topics dear to him, he was very active in the *Cahiers Rationalistes*, published by the Union Rationaliste, of which he became a regular author, so much so that the articles and editorials written there became increasingly preponderant in his scientific production, from 2012 onwards (see in particular publications from [178] to the end, [218]).

Gérard Fussman has held a long list of positions and has been a member of numerous societies and institutions:

- President of the Société européenne pour l'étude des civilisations de l'Himalaya et de l'Asie centrale from 2007 to 2012;
- Managing Director of the Instituts d'Extrême Orient of the Collège de France, from November 1996 to September 2000;
- President of the Scientific Council of the Libraries of the Collège de France, from March 2005 to November 2012;
- President of the Council of the Instituts d'Orient of the Collège de France, from 1 September 2008 to May 2011;
- Member of the Scientific Council of the Centre de Sciences Humaines in Delhi, from 1992 to 2003;
- Member of the Board of Directors of the École Normale Supérieure of Fontenay-Saint-Cloud, from 1992 to 1997;
- Corresponding member of the École Française d'Extrême Orient depuis 1971.
- Member of the commission 'Felsbilder und Inschriften am Karakorum Highway' of the Heidelberger Akademie der Wissenschaften, from 1983 to 2011;
- Member of the curatorium of the Atlas Linguistique de l'Afghanistan, Bern, 1988;
- Corresponding member of IsMEO/IsIAO, Rome, from 1989 until IsIAO's demise in 2012;
- Member of the Academia Europaea, from 1993 to 2013;
- Member of the bureau of the European Association for South Asian Studies, from 1996 to 1997;
- Member of the Scientific Council of the Actes de la recherche en Sciences Sociales, from 1999 to 2004;
- Member of the International Scientific Council of The State Institute of Cultural Heritage of the Peoples of Turkmenistan, Central Asia and the Orient under the President of Turkmenistan (sic) since October 2000;
- Member of the Scientific Council of the Bibliothèque Universitaire des Langues et Civilisations (BULAC), from 2004 to 2010;
- Honorary Fellow of the Ancient Indian and Iran Trust, Cambridge, since 2005-;

- Secrétaire général adjoint, then simply général, of the Union Rationaliste, from 2000 to 2007.

In Fussman's autobiographical account of his career, published as an appendix to *Guerre, art et religion en Inde du nord* [207], he writes that he soon discovered himself to be both a Marxist and an atheist, a Marxist as a result of his reading, an atheist for no particular reason, but rather because of an innate disposition, "like my critical thinking, my disrespect for established values and my pseudo-insolence".[7]

He always remained faithful to his masters, friends and models, as attested by the numerous obituaries signed by him: Daniel Schlumberger [8], Raoul Curiel [30] and [121], Georges Dumézil [57], André Bareau [92], Georges Redard [149] and [176], Pierre-Bernard Lafont [158], Charles Martin Kieffer [191].

In conclusion, Gérard Fussman fully fulfilled his mission: he was a key figure of international Indianism, who gave voice to all marginal and delimiting aspects of the Indian world. In his internationalism, he was always proud to be French, three times, according to him, by birth, by naturalisation and by military service. And so, we watch him go, whistling, as in his last lecture at the Collège de France,

> Je tire ma révérence
> Et m'en vais au hasard
> Par les routes de France
> De France et de Navarre.[8]
> (Jean Sablon, *Je tire ma révérence*, paroles et musique de Pascal Bastiat, 1938)

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[7] "[C]omme mon esprit critique, mon irrespect pour les valeurs établies et ma pseudo-insolence".

[8] "I take my leave / And I'm going at random / Through the roads of France / Of France and Navarre".

Bibliography of Gérard Fussman

This bibliography, including only books and articles, was found on the website of the Collège de France, at the address `http://www.college-de-France.fr/site/gerard-fussman/bibliographie.htm`. Deleted from that website, I prefer to print it again here. Books and articles are put in a same list in chronological order. Every item is numbered and number is included in the text.

1965

[1]. With Raoul Curiel, *Le trésor monétaire de Qunduz*, Mémoires de la Délégation Archéologique Française en Afghanistan, tome XX, Paris, Librairie C. Klincksieck, pp. 93, Pl. I-LX, 4°. 93 p., I-LX pl. Prix Drouin (Numismatique Orientale) de l'Académie des Inscriptions et Belles Lettres, 1970.

1966

[2]. "Notes sur la topographie de l'ancienne Kandahar", *Arts Asiatiques*, XIII, 1966, 33-55.

1969

[3]. "Une inscription kharoṣṭhī à Haḍḍa", *Bulletin de l'École française d'Extrême-Orient*, LVI, 1969, 5-9, Pl. I-III.

1970

[4]. "Inscriptions kharoṣṭhī du Musée de Caboul", *Bulletin de l'École française d'Extrême-Orient*, LVII, 1970, 43-55, Pl. I-III.

1971

[5]. "Nahapâna est-il Nambanos?", *Kushan Culture and History*, Caboul, n° 2, déc. 1971, 71-73 (défiguré par les fautes d'impression). Repris dans "Le Périple et l'histoire politique de l'Inde", *Journal Asiatique*, 1991, 1-2, 31-38.

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[6]. *Atlas linguistique des parlers dardes et kafirs*, Publications de l'École française d'Extrême-Orient, vol. LXXXVIII, Paris, 1972. Vol. 1, 171 cartes; vol. 2, commentaire, XX-452 p. Thèse pour le doctorat d'état, présentée à l'Université de la Sorbonne Nouvelle (Paris III) et soutenue sur épreuves le 12 Juin 1972.

[7]. "Intailles et empreintes indiennes du Cabinet des Médailles de Paris", *Revue Numismatique*, 6e série, XIV, 1972, 21-48, Pl. I-III.

1973

[8]. "Daniel Schlumberger (1904-1972)" (nécrologie), *Bulletin de l'École française d'Extrême-Orient*, LX, 1973, 411-422.

1974

[9]. "Ruines de la vallée de Wardak", *Arts Asiatiques*, XXX, 1974, 65-130.

[10]. "Quelques problèmes aśokéens", *Journal Asiatique*, 1974, 3-4, 369-389. Réimprimé avec additions dans Choix d'articles, 31-51.

[11]. "Documents épigraphiques kouchans", *Bulletin de l'École française d'Extrême-Orient*, LXI, 1974, 1-66, Pl. I-XXXIII.

[12]. "Nouvelle découverte à Bamiyan", *Afghanistan* (Caboul), XXVII-2, 1974, 57-79 (le plan a été oublié par l'imprimeur).

1976

[13]. With Marc Le Berre, *Monuments bouddhiques de la région de Caboul*, I, *Le monastère de Gul Dara*, Mémoires de la Délégation Archéologique Française en Afghanistan, tome XXII, Paris, Diffusion De Boccard, X-110 p., I-LI pl.

1977

[14]. "Pour une problématique nouvelle des religions indiennes anciennes", *Journal Asiatique*, 1977 1-2, 21-70. Réimprimé avec additions dans Choix d'articles, 53-102.

[15]. "Le renouveau iranien dans l'empire kouchan", *Colloques internationaux du CNRS n° 567, Le plateau iranien et l'Asie Centrale des origines à la conquête islamique. Leurs relations à la lumière des documents archéologiques*, Paris, 22-24 Mars 1976, Paris, CNRS, 313-322.

1978

[16]. "Pour une problématique nouvelle des religions indiennes anciennes", *Universalia*, 504-505 (résumé de l'article de 1977 du même titre).

[17]. "Inscriptions de Gilgit", *Bulletin de l'École française d'Extrême-Orient*, LXV, 1978, 1-64, Pl. I-XXXII.

[18]. "Chronique des études kouchanes (1975-1977)", *Journal Asiatique*, 1978, 3-4, 419-436.

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[19]. With Colette Caillat, "Les études bouddhiques et jaïnas", *Courrier du CNRS*, n° 34, octobre 1979, 36-40.

[20]. "Un monde méconnu: l'empire kouchan", *L'Histoire*, n° 17, novembre 1979, 16-24.

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[25]. "La naissance de l'empire kouchan: pour une reconsidération critique des sources chinoises" (in Persian/Dari), *The Kushan Studies, A Collection of the essays of the participants in the Kushan's International Seminar*, Kabul, 1978, published by Kushan Studies International Centre, Kabul,1980, Minisitry of Information and Culture (sic), editor Gul Mohammad Adabyar, 193-200.

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[27]. "Documents épigraphiques kouchans (III): L'inscription de Senavarma, roi d'Od)i: une nouvelle lecture", *Bulletin de l'École française d'Extrême-Orient*, LXXI, 1982, 1-46. Réimprimé avec additions dans Choix d'articles, 105-150.

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[29]. "Pouvoir central et régions dans l'Inde ancienne: le problème de l'empire maurya", *Annales ESC*, n°4, juillet-août 1982, 621-647. English translation: "Central and Provincial Administration in Ancient India: The Problem of the Mauryan Empire", Indian Historical Review, vol. XIV, July 1987-January 1988 (paru en décembre 1990), 43-72. Réimprimé avec additions dans Choix d'articles, 153-179.

[30]. "Raoul Curiel" (nécrologie), *Studia Iranica*, 11, 1982 (= *Mélanges offerts à Raoul Curiel*), 7-13.

[31]. "Monnaie d'or de Kaniṣka inédite, au type du Buddha", *Revue Numismatique*, 6e série, XXIV, 1982 (paru en décembre 1983), 155-169.

1983

[32]. With Daniel Schlumberger (†) and Marc Le Berre (†), *Surkh Kotal en Bactriane*, volume I, *Les temples: architecture, sculpture, inscriptions*, en deux parties: I,1: texte (pp. VIII+160); I, 2: planches (pp. VIII + 72 planches de photographies et LXI planches de dessins), Mémoires de la Délégation Archéologique Française en Afghanistan, tome XXV, folio, Paris, Diffusion de Boccard.

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[43]. "Nouvelles inscriptions śaka (III)", *Bulletin de l'École française d'Extrême-Orient*, LXXIV, 1985, 35-42, Pl. VI-VIII.

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Matteo De Chiara
Toponymy of the Swāt Valley

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Matteo De Chiara's monograph *Toponymy of the Swāt Valley: Linguistic Archaeology* offers a comprehensive collection of the linguistic and ethnic materials of the pashtophone region of the Swāt Valley. The goal of the volume is to shed some light on "an aspect of Swāt until now quite neglected: toponymy" (1). The Valley of Swāt River – located in Khyber Pakhtunkhwa, Northern Pakistan – is the renowned research field of the Italian Archaeological Mission, which is continuously working in the region since its foundation in 1955 by Giuseppe Tucci. The sensational archaeological discoveries made during the nearly seven decades of activity of the Mission spearheaded the studies on Swāt, especially in the historical-archeological fields of research. The aim of Matteo De Chiara's volume is to contribute to existing scholarship by addressing the issue of toponymy and opening the path to linguistic researches focusing on this uniquely interesting region. Indeed, as the Author himself reports in opening of the "Foreword", the Valley of Swāt "represents a paradise for scholars dealing with archaeology, history anthropology, linguistics… The chronological stratification of civilization, languages and cultures offers the possibility of developing endless research projects" (1). On this last point, the diachronic approach of De Chiara's research is intended to trace all the levels of linguistic "stratification" of the pla-

cenames collected, adopting a *modus operandi* conceptually not far from the archeological stratigraphy method, which unveils one by one the *strata* or layered materials that were deposited over time. It is perhaps in the view of a similarity between the linguistic and the archaeological approaches that the subtitle *Linguistic Archaeology* appears in De Chiara's volume *Toponymy of the Swāt Valley*.

The volume was published by the historic Lahore-based publishing house Sang-e-Meel and was included in the *ACT-Series*, which since 2013 has published twelve volumes on archeology, history, linguistics, and ethnography of Gandhāra and the Swāt Valley.

The contents of the volume are preceded by a "Presentation" (vii-viii) by Adriano Valerio Rossi, president of ISMEO, who describes the genesis of De Chiara's work, its importance in the field of toponymy and linguistics, and summarises the achievement of 65 years of researches carried out by the Italian Archaeological Mission in the Swāt Valley. As director of the Mission, Luca Maria Olivieri contributes to the volume with a "Short Note on the Fortune of Toponymy Studies in Swāt and Gandhāra" (245-6) furnishing a concise but exhaustive overview on the history of toponymy studies in Swāt and the attempts made since the 19th century to locate the ancient toponyms (e.g. Bazira, Massaka, Aornos, Uḍḍiyāna) mentioned by the Alexandrographers and classical Latin, Greek, Chinese and Tibetan sources.

The volume opens with a "Foreword" (1-4) by the Author summarising in brief the contents of the work and the methodology adopted. The "Introduction" (5-50) is very exhaustive and provides some key notions about the Valley, accompanied by a rich colour printed cartographic apparatus (39-50). Here the Author discusses the "Location" (5-7) of the Valley, its "Geomorphology and Climatology" (8-11), the "Tehsil" – i.e. a local unit of an administrative division – (11-18) of Swāt, the "History" (18-21) of the region, its "Economy" (21-4) and "Ethnography" (25-6), the "Languages" (27) spoken throughout the Valley, some "Remarks on the Yusufzai Dialect of Swāt" (28-30), and the "Linguistic Features of Swāt Toponyms" (31-2). The "Conclusions" (32-8) of the "Introduction" offer interesting data regarding the Geonyms – i.e. the generic name of a place – which are in some cases of non-Pashto origins, and an overall list of these terms organised by semantic areas: "Mountains" (33-5), "Hydrology" (35-7), "Oronyms" (37), "Pasture, Passes and Village" (37-8).

A more specific "Glossary of Geonyms" (53-6) and a "Glossary of old Geonyms Incorporated in the Toponyms" (57), are available to the reader in the first part of the main section of the book, "Toponymical Altlas of The Swāt Valley" (51-236).

The main section of the entire volume is the "Gazetteer" (59-236). It contains a list – arranged in alphabetical order – of 1,375 place-names of the Swāt Valley, including names of cities, villages and towns, names of fields, pastures *et alia*. The Author firstly retrieved

these placenames from the maps of the Pakistani Government from 1950 and 1984 and later verified them in the 1977 maps of the Soviet Union and in those of the USA army. Lastly, all data were compared with information derived from Google Maps and Google Earth and complemented *in loco* consulting the Pashto-speaking residents of the Valley. In addition, the Author consulted some Pashto sources – e.g. Khushal Khan Khattak's *Swāt nāma* and Inayat-Ur-Rahman's *Folk Tales of Swāt* – and all English gazetteers from the 19th and the beginning of the 20th century. All these data were finally compared and supplemented with the information collected during the more recent archaeological surveys conducted throughout the entire Valley. Having acquired all the placenames, the Author organised the data in alphabetical order adding for each toponym a descriptive geographical note, the references to the "Maps" (54 maps, p. 289 onward), and the phonetical transcription. The toponyms are also followed by some linguistic considerations, i.e. hypothesis of connections of these toponyms to Pashto, Persian, Turkic, Arabic, Dardic and Kafiri, Indo-Aryan languages and others. When available, the Author also relates the reference of a given toponym's mention in literary sources or in linguistic scholarship. A case in point is the entry "Barikot" (79-81, no. 147), a populous village located on the left bank of Swāt River and one of the major archeological site excavated by the Italian Mission. Under "Barikot", the Author reports the main studies concerning the hypothetical origin of the toponym and its identification with the ancient Bazira-*vajra* (and then Beira/Baira-*va(y)ira*) mentioned in classical sources and by the Alexandrographers.

The "Gazetteer" is followed by an "Appendix" (239-52) on "Microtoponymy of the Kandak and Nearby Valleys", the "Bibliography" (253-60), and the two "Indexes" (263-88). One of the indexes organises the toponyms according to their typology and the other according to their Thesil of belonging.

At the end of the book the reader finds a detailed and comprehensive Cartographic Apparatus – "Maps" (p. 289 onward) – featuring 54 monochrome maps drawn by the Author himself.

The volume *Toponymy of the Swāt Valley* represents an essential atlas for any scholar interested not only in linguistics, but also in geography, ethnography, anthropology, and history of a frontier region at the border between modern Afghanistan and Pakistan, and it is surely set to be a milestone in the studies of toponymy overall.