

AUSTROASIATIC STUDIES

Papers from ICAAL 4

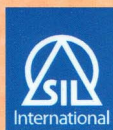
Mon-Khmer Studies Journal
Special Issue No. 3

Volume editors:

Sophana Srichampa

Paul Sidwell

Kenneth Gregerson



Prosody and typological drift in Austroasiatic and Tibeto-Burman: Against “Sinosphere” and “Indosphere”

Mark W. Post

The Cairns Institute, James Cook University

1. Introduction

In both the Austroasiatic (AA) and Tibeto-Burman (TB) language families, we find a rough overall cline in typological organization. In some languages, we find the following set of features: a complex morphological word, finiteness asymmetries, extensive suffixing, polysyllabic prosody, mostly simple onsets, and mostly monophthongal vocalism. In other languages, we find a relatively simpler morphological word, verb serialization, prefixation, syllabic prosody, occasional onset clustering (or sesquisyllabism), and complex diphthongs. Examples of the first type of language in TB would include Garo, Newar and Kiranti languages, among others, while in AA this typology is found mainly in Mundan. Examples of the second type of TB language include Mizo, Lahu and Lisu, among many others, while in AA this typology is found in Khmer and, especially, in Vietnamese. Seemingly, then, this cline in typological organization is further correlated with geographical location. Languages of the first type are found mainly in the Subcontinent, while languages of the second type are more common to mainland Southeast Asia.

Probably because of this geographical correlation, the within-family typological contrasts outlined above have sometimes been explained in terms of *contact influence*, namely from Indic languages in the West and Sinitic languages in the East. The labels *Indosphere* and *Sinosphere*, coined by Matisoff (1991b, if not sooner) and further popularized by Bradley, LaPolla et al. (2003), encapsulate this view, and are by now so widely-used that they hardly seem open to question.

While certainly diagnostically useful, and geographically sound, the problem as I see it is that in particular cases, clear evidence of pre-modern contact with either Indic or Sinitic languages is lacking. In the cases of many languages of the Eastern Himalayan region, it is all but certain that there were no such early contacts at all. And yet, as Matisoff (1991b: 485) correctly points out, Eastern Himalayan languages are “firmly...Indospheric” in terms of their broad typological characteristics.

In this paper, I will argue that a concept of “contact influence”, depending as it would on the actual historical occurrence of population contacts (e.g. Indic > TB or Sinitic > TB), is insufficient to explain the broad typologies of TB languages of the Eastern Himalaya, at a minimum. Instead, adapting the model of prosodic shaping of language typology developed by Donegan and Stampe (1983; 2004) with primary reference to AA, I will suggest that the effects of *rhythmic prosodies* – particularly, the development of a trochaic rhythm in the “Indosphere” – provides a more plausible motivation for the development of most of the typological features which have been attributed to spheres of contact influence, in TB languages just as in AA. Although ultimate Indic and Sinitic sources for differing rhythmic profiles in TB and AA languages cannot be ruled out, they should neither be assumed as a proximate cause, nor (and far less) to reflect the historically dominant/subordinate population relationships that seem to be implied by the use of these labels.

Post, Mark W. 2011. “Prosody and typological drift in Austroasiatic and Tibeto-Burman: Against “Sinosphere” and “Indosphere”.” In Sophana Srichampa, Paul Sidwell and Kenneth Gregerson (eds.) *Austroasiatic Studies: papers from ICAAL4. Mon-Khmer Studies Journal Special Issue No. 3*. Dallas, SIL International; Salaya, Mahidol University; Canberra, Pacific Linguistics. pp.198-221.
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2. Typological convergence in greater mainland Southeast Asia

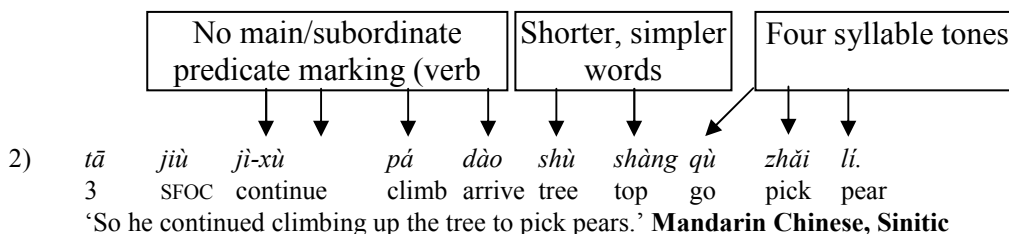
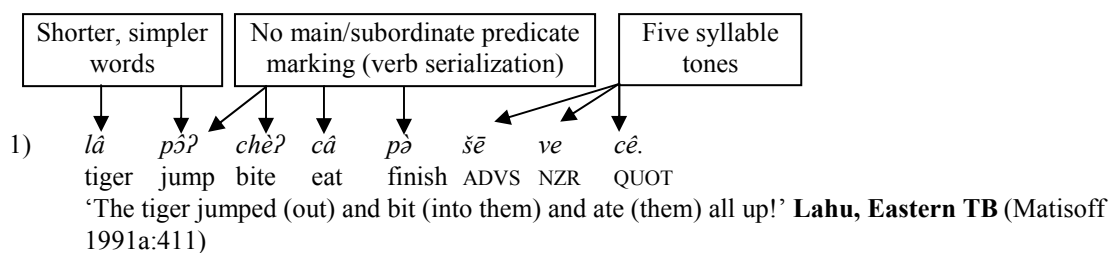
Many of the languages of greater mainland South-East Asia¹²⁷ – especially, those of AA and TB stock – can be characterized in terms of a typological cline which spans several linguistic dimensions. To the North, East, and Southeast, we often find...

- rich tone systems (often, syllable tone systems with large inventories)
- diphthongal vocalism
- simple onsets
- basic monosyllabism (syllable = morpheme = word) or sesquisyllabism (“one and a half” syllables per word, with a “minor” syllable initial which is often a prefix or earlier prefix)
- compounding rather than derivation (or lightly-grammaticalized derivations)
- relatively isolating morphology (rare or marginal affixation)
- productive or semi-productive prefixes
- no finiteness asymmetry (verb serialization)
- “SVO” word order (not always, but often)

To the South, West, and Southwest, we often find...

- few or no tones (often, word tone systems with small basic inventories)
- monophthongal vocalism
- onset clusters
- basic polysyllabism (words may be two, three or more syllables)
- extensive derivational affixation, with or without compounding
- relatively synthetic, agglutinative morphology (extensive affixation)
- mainly suffixes
- robust finite asymmetries (clause chaining, subordinate clause embedding)
- uniform SOV word order

While not every feature value is of course found in every language in these regions, at all or in the same degree, as rough overall tendencies (or sets of potentially related tendencies) they hold well enough to at least attract attention. An example of the first type of language from the TB family would be Lahu (Lolo-Burmese, Burma/Thailand/Southwest China), a sentence from which is first compared with a similarly-structured Mandarin Chinese sentence in (1)–(2).



¹²⁷ By “greater mainland Southeast Asia” I mean most of modern-day China and Tibet, Southeast Asia up to the Thai-Malay border, most of North-East India and the Northern/Eastern periphery of Bangladesh, and most of the Himalayan region.

An example of the second type of language would be Galo (TB > Tani, North East India), which is here compared with the neighbouring and typologically similar Eastern Indo-Aryan language Assamese (3)–(4).

	Two word tones		Longer, more complex words		Predicate marked for main/subordinate status
3)	ʔih̄i	ʔoó	má-làa	rì-gərǎ-làa	ʔarúm=əm áa-rǎ-kú
	wood	vegetable	search.for-NF	do-ACNC-NF	evening=ACC come-IRR-CMPL
	‘After searching for firewood and vegetables (they’ll) return in the evening.’ Galo, Western TB				

	No tones		Longer, more complex words		Predicate marked for main/subordinate status
4)	ta-i	ula-i	dza-i	ula-i	go-i pela-i bhab-e.
	3-F	emerge-NF	go-NF	emerge-NF	go-NF throw-NF think-3.SUB
	‘She goes ahead on out and thinks.’ Assamese, Eastern Indo-Aryan (Data from Joana Jansen, glossing adjusted by this author)				

Although this article’s interest will mainly lie in the typological characterization of TB languages, the above generalizations in fact seem to be largely independent of the genetic origins of the languages involved. Vietnamese and Lahu resemble one another typologically to a greater extent than either resembles Khasi or Boro, despite that Vietnamese and Khasi are both AA languages and Lahu and Boro are both TB. Sora and Belhare resemble one another typologically to a greater extent than either does Khmu? or Karen – again, despite that Sora and Khmu? are both AA and Belhare and Karen are both TB. And Tai languages, of course, resemble Sinitic languages to such an extent that most scholars until quite recently assumed that they were probably genetically related (Grierson 2005 [1928]).

To the extent that these generalizations are true, and given the geographical correlations observed above, many linguists would suspect that we are dealing here with *areal typologies*, which have most likely come about as a result of prolonged population contacts resulting in population interactions, bilingualism, cultural exchange, and a consequent structural convergence (Thomason and Kaufman 1988; Thomason 2001). And indeed, this is probably the prevailing view, among Tibeto-Burmanists at least:

3. One popular view: “Sinosphere” and “Indosphere”

Primarily due to the pioneering work of Matisoff (1978; 1982; 1990; 1991a; 1999, etc.), the importance of language contact to an understanding of areal language structures in greater mainland Southeast Asia and their historical development has long been recognized. It is quite clear both that language contact exists in greater mainland Southeast Asia, and that it has played a role in numerous cases of what we might call cultural-linguistic convergence.¹²⁸ In addition, it is sometimes further argued that there are broader patterns of contact and areal convergence which in a sense shape the overall picture of cultural-linguistic convergence in the Tibeto-Burman region at least, and which ultimately explain the existence of typological prototypes such as those outlined in §0. As Matisoff writes,

[I]t is convenient to refer to the **Chinese and Indian spheres of influence** as the ‘Sinosphere’ and the ‘Indosphere’... Some languages are firmly in one or the other...the Munda and Khasi branches of Austroasiatic and the Kamarupan branch of TB are Indospheric; while...the Loloish branch of TB and the Viet-Muong branch of Mon-Khmer are Sinospheric.... Whatever their genetic affiliations, the **languages of the ST area have**

¹²⁸ Prominent recent studies of the role of language contact in shaping various aspects of area language grammars and phonologies from different genetic stocks include Enfield (2001), LaPolla (2001) and Thurgood (2010).

undergone massive convergence in all areas of their structure – phonological, grammatical, and semantic. . . . Hundreds of words have crossed over genetic boundaries in the course of **millenia of intense language contact**, so that it is often exceedingly difficult to distinguish ancient loans from genuine cognates. (Matisoff 1991b:485-486, emphasis mine)

As labels, *Sinosphere* and *Indosphere* accomplish two jobs simultaneously. First, they identify and label two broad subsets of greater mainland Southeast Asian languages, in which distinct sets of typological convergence phenomena are observed. Second, the labels explicitly attribute this convergence to massive, direct and sustained influence from two implicitly dominant cultural-linguistic forces, Sinitic and Indic, over the many smaller and geographically less-widely-represented populations of the area.

The concept of a Sinosphere/Indosphere divide has gained a fair amount of traction among Tibeto-Burmanists, at least; a recent and well-known collection of papers on variation and change in TB languages, for example, seems to assume it as a starting point for inquiry (Bradley, LaPolla et al. 2003), and references in the literature on TB languages are common. But how plausible is the logic behind their use? Another way of phrasing this question: given the observed, geographically-correlated typological cline which has been observed to hold (albeit roughly) among AA and TB languages alike, how plausible is it that contact with, and influence from, Indic and Sinitic languages will be able to exhaustively explain this situation?

4. Newar and Galo: Two case studies of Indospheric TB languages

To conclude that a term like “Indospheric” can be plausibly applied in a particular case, we would need to demonstrate at least two things: one, that a candidate language indeed exhibits typological features which are established as characteristic of Indospheric languages, and two, that a contact history with Indic languages can be independently demonstrated.^{129, 130} In this section, we will look briefly at two case studies of candidate Indospheric TB languages: Newar and Galo.

Newar is spoken in the Western Himalaya, primarily in the Kathmandu Valley in modern-day Nepal. Galo is spoken in the Eastern Himalaya, primarily in mid-central Arunachal Pradesh state in modern-day North East India. Figure 1 shows the approximate geographical locations of Newar and Galo, and includes an extremely rough and haphazard geographical bifurcation of the greater mainland Southeast Asian region into an “Indosphere” and a “Sinosphere” (Figure 1).¹³¹ The environments in which Newar and Galo speakers live are similar – in the Himalayan foothills – and both are, at least in modern times, at the geographical doorstep of the great Indo-Aryan *Sprachbund* of northern South Asia.

¹²⁹ By “plausibly” here, I do not mean “accurately”. That is to say, demonstration of both (a) typological convergence and (b) contact in a given case does not necessarily indicate a causal link (a) > (b). However, the correlation, if repeatedly observed, would suggest a causal link to be at least *plausible*. On the other hand, if no contact can be shown to have occurred, or if contact can be shown *not* to have occurred, then a causal link between (a) and (b) would be viewed as less plausible or implausible, respectively.

¹³⁰ Since I am primarily interested in structural convergence in this paper, “independent” evidence would in this case include such things as loanwords (since borrowing of lexical items does not necessarily correlate with structural convergence toward the donor language). Of course, if *language-independent* evidence such as sharing of cultural features or written records attesting to historical population contacts can also be brought to bear, this would be even more welcome.

¹³¹ This bifurcation is provided for heuristic purposes only, and should not be taken to represent a real border between the two “spheres” in question which has been arrived-at through systematic consideration of the typological profiles of all TB languages. Indeed, such a neat, precise borderline cannot possibly exist as such, and I doubt very much that even the most ardent advocate of an Indosphere/Sinosphere divide would claim that it does. Nevertheless, it may help to visualize the relative geographical locations of the languages under discussion vis-à-vis the rough geographical positions of these two “spheres”.

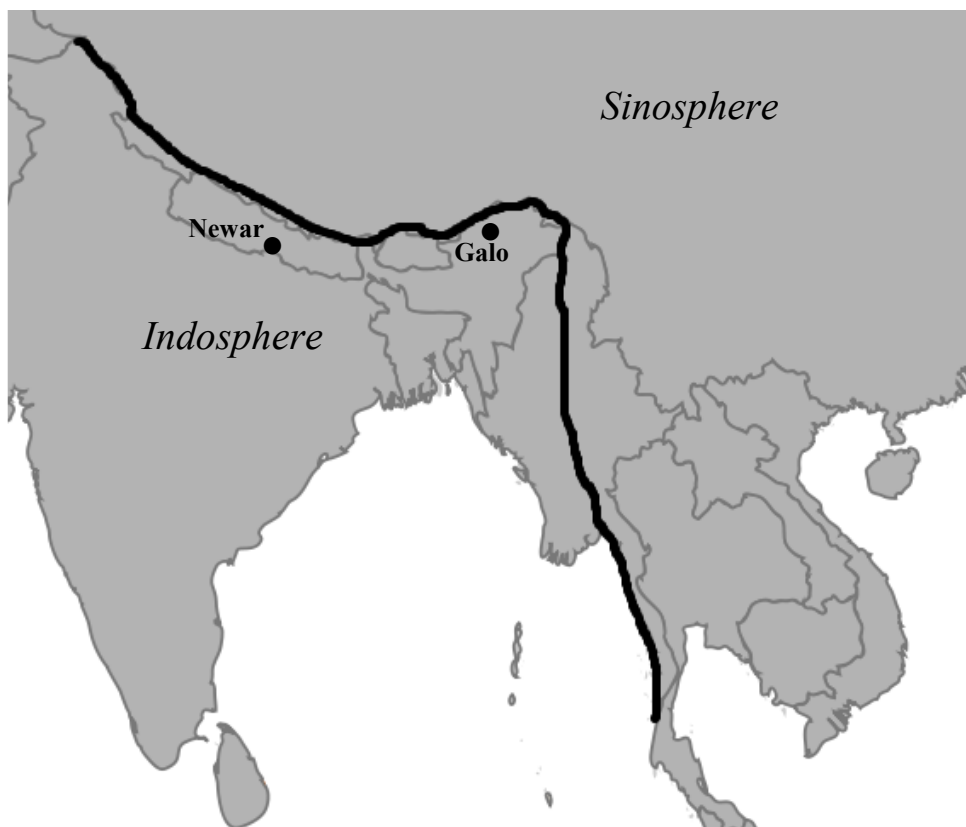


Figure 1: Newar and Galo: two “Indospheric” TB languages?

Dolokha Newar (Genetti 2007) and Lare Galo (Post 2007) have both been described as having characteristics which are typical of Indospheric languages. Aligning Newar explicitly with the Indospheric type, Genetti writes,

In [Indospheric] languages there is often considerable inflectional morphology, from fully developed case-marking systems to extensive pronominal morphology found on the verb. These languages generally mark a number of types of inter-clausal relationships and have distinct constructions involving verbal auxiliaries [as opposed to serialization]. Newar dialects are clearly representative of the [Indospheric] type. (Genetti 2007:3, bracketed insertions mine)

A similar characterization can be applied to Galo, briefly summarizing the larger discussion of Galo’s typological profile in Post (2007:§1.2.10):

Galo has extensive inflectional morphology, with a fully developed case-marking system and numerous obligatory TAM suffixes found on the predicate. Galo marks a number of types of inter-clausal relationship and has distinct constructions involving several types of non-finite predicate forms. Galo is thus clearly representative of the Indospheric type.

Examples (5)–(6) roughly exemplify some of these features for Dolokha Newar and Lare Galo respectively:

- | | Case system | Cosubordination | Suffixal predicate inflection |
|----|-------------------------|-------------------|-------------------------------|
| 5) | <i>āmun</i>
3.SG.ERG | <i>jā</i>
rice | <i>na-en</i>
eat-NF |
| | | | <i>ye-eu</i>
come-3.FUT |
| | | | <i>ka.</i>
ASS |
- ‘He will eat his meal and come back.’ **Dolokha Newar** (Genetti 2007:430)

	Case system	Cosubordination	Suffixal predicate inflection	
6)	<i>bii</i> 3.SG.NOM	<i>ʔacín dó-làa</i> rice eat-NF	<i>áa-rá-kú</i> come-IRR-CMPL	<i>dáa.</i> ASS
	‘He will eat his meal and come back.’ Lare Galo			

Thus, it would seem that Dolokha Newar and Lare Galo each satisfy the first criterion of Indospheric status, in that they each exhibit a similar suite of characteristically Indospheric typological features. But how about the second? Can a history of contact with Indic language speakers be independently demonstrated in each case?

In the case of Dolokha Newar, the answer is an unequivocal “yes”. As Genetti writes,

One fact that...Dolokha history makes clear is that the Dolokhae people have not been isolated from other linguistic groups.... Lexical borrowings from Indo-Aryan languages (especially Nepali, Sanskrit and Hindi, but possibly Maithili and other languages) [abound, and] structural borrowings are also in evidence.... Almost all Dolokha Newars are bilingual in Nepali and Dolokhae. Nepali is the lingua franca of the local area, as it is throughout Nepal. (Genetti 2007:22)

And furthermore,

The extent of borrowing from Indo-Aryan may be attested by the large number of Indo-Aryan nouns found in my lexical database, composed primarily of words found in narrative, but also additionally containing elicited words. Of these, about **39% were Indo-Aryan loans** and about 59% were either native Dolokhae lexemes or **nativized Indo-Aryan borrowings**... Borrowed nouns are treated just like native nouns morphologically, and thus undergo the same suffixation and cliticization processes. (Genetti 2007:111)

According to Genetti, then, Dolokha Newar exhibits extensive evidence of contact with and influence from Indic languages. Bilingualism in the local Indo-Aryan lingua franca is the overwhelming norm, and this and other forms of exposure to Indo-Aryan languages has led to massive borrowing, with a large percentage of vocabulary items in Genetti’s corpus being of Indo-Aryan origin. To these linguistic observations, we can add certain cultural observations. Newar traditionally practice Hinduism and Buddhism – both being of Indo-Aryan origin – and have adopted a caste system, an unmistakable signature of influence from Indo-Aryan groups. The material culture of Newar groups is also highly developed, with traditional woodworking and metalworking practices as well as sculpture and painting typically being oriented toward or inspired by Buddhist and/or Hindu mythology. Finally, Newar literature dates from the 12th century, when Sanskrit texts begin to be translated into Newar language (Genetti 2007:§3.2). In short, there can be little argument against viewing Newar as an Indospheric TB language in terms of exhibiting the requisite evidence of formative Indo-Aryan influence, over a great number of centuries if not indeed millennia. In turn, one might easily suppose that the relatively Indospheric typological profile of Newar is, in turn, part of this same nexus of contact-derived cultural and linguistic features. Now, how about Galo?

As was briefly mentioned above, Galo is spoken in mid-central Arunachal Pradesh state, North East India, in the mid-Eastern Himalaya, an area which in many ways (topography, climate, flora and fauna...) resembles mid-central Nepal (Figure 2). It was also mentioned that Galo, like Newar, is in close proximity to the Indo-Aryan *Sprachbund* at its southern border. But this is where I will argue that the comparison ends:

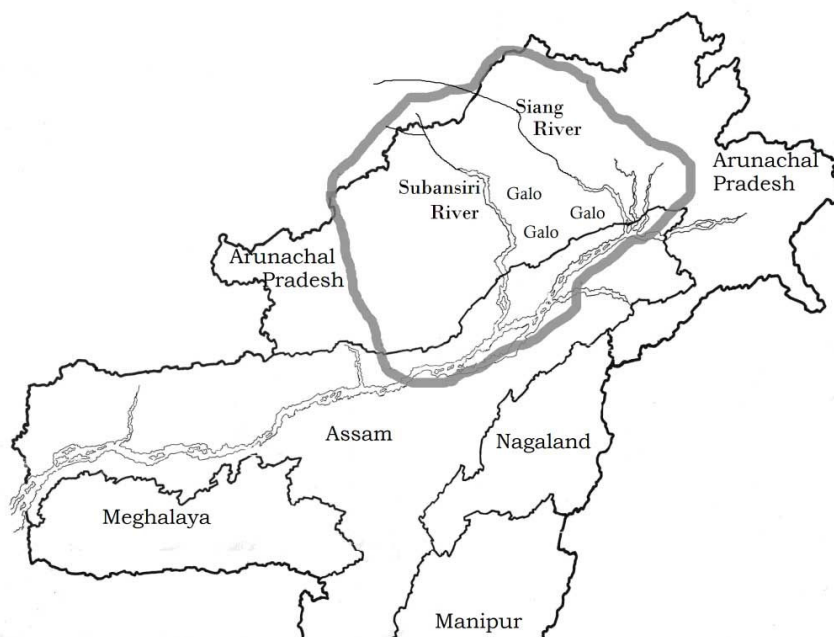


Figure 2: The Tani cultural-linguistic area in rough outline, showing the approximate concentration of Galo speakers between the Subansiri and Siang rivers

Very little information of any reliability has historically been available regarding the geography, peoples and languages of the mid-Eastern Himalaya, up to and including the present day. Although “annexed” by British India in the late 19th/early 20th century, very little of the region was in fact governed, and virtually no regional integration was attempted (Mackenzie 1884). A definitive account of British expeditions into the region produced in 1912 included a highly revealing map insert, in which the extent of detailed British geographical knowledge of the mid-Eastern Himalaya is shown to extend roughly 40 kilometers up the Siang River valley (source of the Brahmaputra) – covering perhaps 4-5% of the “annexed” terrain (Hamilton 1912).¹³² The de facto boundary with Tibet was in essence imagined; it had never been properly surveyed.

Since Indian independence, this information gap has in many ways remained unchanged. Restrictions on the publication of accurate maps (even locally) are in force, internal travel remains difficult and sometimes dangerous due to frequent landslides, and a highly restrictive permissions regime effectively reduces research in the region to a tiny trickle. Many of what one might suppose to be definitive fieldwork-based ethnographic surveys of the region – such as the *Anthropological Survey of India* – appear upon scrutiny to be at least in part derived from decades-old British survey records. Many of these were, in turn, based on secondhand accounts provided by individuals from distinct tribes with which British administrators (not anthropologists or linguists) happened to be in contact. Unsurprisingly, such works tend to be unreliable.

In the absence of facts, it is easy to make assumptions. It is easy, for example, to assume that Arunachal Pradesh, resembling Nepal in terms of overall setting, must resemble it culturally and linguistically as well; indeed, in *very* early times, it may well have. But in terms of one key factor, namely evidence of pre-modern Indo-Aryan (IA) contact with TB cultures – the comparison breaks down. There is very little evidence of extensive and enduring contact between IA and Eastern Himalayan populations until relatively late in the 20th century.

¹³² These expeditions were mainly punitive, and designed to dissuade various hill tribes (especially the “Abor”, i.e. Adi) from carrying out slave raids or extortion campaigns in British-administered Upper Assam.

Some relevant facts regarding the Tani cultures, the majority group of central Arunachal Pradesh, will be of help here. Tani cultures of Arunachal Pradesh,¹³³ of which the Galo are one, are in essence hill tribes, with a material culture closely resembling that of TB and Tai groups of modern-day Northern Burma. They traditionally build raised bamboo-and-wood houses, and primarily practice shifting or rotating hillside cultivation. Wet rice agriculture is practiced extensively by the plateau-dwelling Apatani, into which pisciculture has been more recently integrated (von Furer-Haimendorf 1955). However, the terraced paddy agriculture so common to the Western Himalaya has been introduced only very recently in the Tani region and remains relatively little-practiced. Spiritually, Tani cultures are traditionally animist/shamanist (Blackburn 2010). Very, very few Tani peoples are practicing Buddhists. Hinduism is currently making strong inroads in the Tani area; however, it is doing so, in a sense, covertly, by means of a very recent Sanskritization of existing animist traditions (rather than by outright conversion). Christianity is rapidly on the rise in many areas, and there are apparently some converts to Islam among lowland Nyishi communities as well (Yankee Modi, personal communication). The point to underscore here, however, is that all of these shifts have happened within the most recent handful of decades; many residents of Arunachal Pradesh who are alive today are able to remember a time when Tani cultures were uniformly animist/shamanist, and when no “religion” existed among them that could be named. Finally, we should note here that there is little or no evidence of a caste system among Tani groups, such as one finds among the Newar of Nepal or in the modern-day Indian state of Manipur (Sen 1992).¹³⁴ Similarly, there is no evidence at all of the present or past existence of kings, an aristocracy, or even a village chief among Tani cultures, nor is there even a native vocabulary capable of reference to such institutions. In Eastern and Central Tani cultures, at least, the non-hereditary *kāba(ŋ)* ‘village council’ was the sole arbiter of disputes.

These statements apply to Tani cultures of Arunachal Pradesh only. To the East of the Tani area, one finds “Mishmi” groups whose material and spiritual culture appears to resemble that of the Tani to a large extent, but which have yet to undergo any comprehensive ethnographic or linguistic investigation. Closer to the Bhutan and Tibet borders, one finds Tibetic groups (Monpa, Menba) whose spread within the region is clearly relatively recent. Between the Tibetic groups and the Tani, one finds a diverse group of speculatively TB languages and cultures (Sulung/Puroik, Bugun, Bangru, Sherdukpen, Hruso Aka, Koro Aka, Miji...), whose traditional animism is in many cases robust, and who in some cases preserve a material culture which very likely predates that of most Tani groups in several respects. For example, sago palm harvesting is traditionally practiced in preference to dry rice cultivation among the Sulung/Puroik (Riba undated). Along the modern-day Burma border, one finds TB groups with close relations to Northern Burma hill tribes, and which may be considered part of the same overall cultural-linguistic sphere.

To summarize, then, in the Tani area, and in most other regions of Arunachal Pradesh excepting certain Tibet frontier areas, one finds a characteristically Southeast Asian rather than South Asian material culture (see also Burling 1965), little or no evidence of pre-modern organized religion and little or no evidence of craftwork, excepting certain non-representational canework effigies which are, however, not generally designed to outlast a particular ritual. There is no true caste system, and no system of permanent political hierarchies (“priests”, “kings” or “chiefs” versus “common” people). To this one might add that there are no well-documented archeological sites in the region which can be clearly associated with earlier IA or Ahom administration of the hill region,¹³⁵ and – up to and including the present day – there is not one

¹³³ I here use the terms “Tani (languages, cultures...) of Arunachal Pradesh” or “...of the Eastern Himalaya” rather than simply “Tani” to avoid reference to Mising, being the only Tani tribe inhabiting the Assam plains area. It is seemingly the case that Mising speakers have migrated to the Assam plains from the East Siang region (where mutually-intelligible languages are spoken) in relatively recent times, where a very different set of contextual circumstances may be found. Consequently, the Mising have undergone a number of salient cultural and linguistic changes which render their situation relatively anomalous in the overall Tani context.

¹³⁴ Clan-based or, much more rarely, tribe-based dominant-subordinate relationships may be found here and there in the Tani and surrounding areas, but generally relate to the past practice of slave-taking rather than to an enduring clan hierarchy of any sort (von Furer-Haimendorf 1955). That is to say, one could become a slave by virtue of being captured or bartered as a slave; however, this misfortune would not necessarily be inherited by a slave’s children, at all or in the same way.

¹³⁵ Administrative or religious structures often highlighted as “indigenous to Arunachal Pradesh” (such as Malinithan and Ita-fort) are generally located in foothill or plains areas adjacent to the modern-day border with Assam.

permanent settlement (i.e., village or town) of IA language speakers in the entire Tani region within Arunachal Pradesh (Figure 3).¹³⁶



Figure 3: (a) Milang (Tani) elder *Amin Moodà* (b) *Moobùk* (Milang) village (c) Galo canework effigy

Unlike the case of Newar, then, there is very little evidence from culture, or from what little we know about the history of the region, of IA contact with Tani groups of Arunachal Pradesh, at least. But what about language?

Tani languages are of course spoken in different areas, with different degrees of proximity to the modern-day border with Assam, where the Eastern IA language Assamese is spoken both as a lingua franca and as the native language of tens of millions of people. Being an Assam-bordering language, Galo would be expected to be among those Tani languages exhibiting strong evidence of Indic language contact. However, in my Galo corpus of 5,049 base lemma (that is, not including derived words), the full set of nativized and/or unrecoverable loanwords can be exhaustively presented in a small table (Table 2).

The increasing prevalence of a semi-creolized form of Hindi, used as a lingua franca in modern-day Arunachal Pradesh, makes it easy for visitors to some areas to come away with the impression that Indic language contact is high, and may have always been. In urban areas in which people from numerous tribes congregate, it is sometimes difficult to find people under the age of 30 who speak anything other than “Arunachali Hindi” (Modi 2005). However, Galo texts collected from expert speakers above the age of 35 who are village inhabitants reveal a paucity of Indic loanword use, even in the ostensibly high Assamese contact region of Lower West Siang District, Daring Circle (approximately 20 km from the Assam border, along the West Siang trunk road). For example, a personal narrative text spoken by a 35 ~ 40-year-old woman of four minutes in length entitled ‘Pig Spirit’ contained only two loanwords, both of Assamese origin: *dukàn* ‘shop’ and *kulí* ‘open (for business)’. A folktale spoken by a 75 ~ 80-year-old man of twenty-six minutes in length entitled ‘The Wives of Abo Tani’ contained only three Assamese loanwords *besi* ‘more’, *baki* ‘remainder’, and *dakon* ‘basket’. Other texts exhibit similar ratios.

While these relatively inextensive structures do fall politically within modern-day Arunachal Pradesh, they are architecturally more plausibly associable to plains-based populations.

¹³⁶ This may seem surprising in view of the region’s political inclusion in modern-day India, ensuing political and cultural integration, and the large population of Eastern IA-speaking groups at Arunachal Pradesh’s southern doorstep who might well be expected to have an interest in pressing north. These facts conceded, permanent settlement of non-indigenous inhabitants in Arunachal Pradesh remains proscribed by a post-independence law designed by ex-British anthropologist-cum-missionary Verrier Elwin, who later became an Indian citizen, advocate of tribal affairs and adviser to then-Prime Minister Nehru (Elwin 2005 [1957]). Illegal non-indigenous settlers are routinely removed from their encampments and transported to the border.

Galo	Gloss	Source	Form	Gloss
<i>ʔazár</i>	‘thousand’	Asm	<i>hezar</i>	‘thousand’
<i>pohàa</i>	‘money’	Asm	<i>poisa</i>	‘money’
<i>dukàn</i>	‘shop’	Asm	<i>dukan</i>	‘shop’
<i>bozár</i>	‘market’	Asm	<i>bozar</i>	‘market’
<i>kulí</i>	‘open (for business)’	Asm	<i>kuli</i>	‘open (in general)’
<i>bónd</i>	‘close(d) (for business); strike’	Asm	<i>bóndhí</i>	‘close (in general); strike’
<i>gám</i>	‘village headman’	Asm	<i>gaō</i>	‘village’
<i>nahór</i>	‘Ceylon ironwood tree’	Asm	<i>naħor</i>	‘Ceylon ironwood tree’
<i>untəráa</i>	‘orange (citrus fruit)’	Asm	<i>sumtra</i>	‘orange’
<i>rəbáp</i>	‘pomelo (grapefruit)’	Asm	<i>rəbəp</i>	‘pomelo’
<i>umbítáa</i>	‘papaya’	Asm	<i>umbita</i>	‘papaya’
<i>kurii</i>	‘cat’	Asm	<i>mekuri</i>	‘cat’
<i>tamúr</i>	‘betelnut’	Asm	<i>tamul</i>	‘betelnut’
<i>tikə</i>	‘contract’	Asm	<i>tika</i>	‘contract’
<i>potáa</i>	‘paper; letter’	Asm	<i>pətrə</i>	‘paper’
<i>potə</i>	‘license’	Asm	<i>pətrə</i>	‘paper’
<i>gurée</i>	‘horse’	Asm (via ET)	<i>ghora</i>	‘horse’
<i>hàa</i>	‘tea’	Asm	<i>sa</i>	‘tea’
<i>balii</i>	‘sand’	Asm	<i>balu</i>	‘sand’
<i>kirkii</i>	‘window’	Asm	<i>kirki</i>	‘window’
<i>lagí</i>	‘want/need’	Asm	<i>lag-</i> + <i>-i</i>	‘want/need; attach + NF’
<i>porì</i>	‘study; read’	Asm	<i>porh-</i> + <i>-i</i>	‘study; read + NF’

Table 2: Well-assimilated Indic loanwords in Lare Galo (Asm = Assamese)

To reiterate, Galo is in this case an example of a Tani language of Arunachal Pradesh in which Indic linguistic influence would be expected to be *high*, due to its relative proximity to the Assam border. In other Tani languages, evidence of Indic influence is even lower. For example, in *Dohij*, a Minyong village along the East Siang trunk road, most women above the age of 60 appeared to be unable to converse in any Indic language, and were aware of very few Indic words. In *Moobük* (Peki-Modi), a Milang village along the Upper Siang/Dibang Valley district border, only a small number of Indic words were known by the majority of residents; children seemed unable to converse in any Indic language at all. Although certain Indic loanwords were in evidence in these villages, they were quite clearly recent loans resulting from the inevitable concomitants of modern-day administration (i.e., such words as *gam* ‘village headman’ (cf. Table 2), something which every village is required by law to have). These, in turn, were apparently borrowed from the neighbouring Padam language, together with characteristically Padam phonological adaptations.

To summarize, then, there is little if any evidence of extensive pre-modern Indic-Tani population contacts (again see also Post (in press-a)). There are few if any clear examples of extensive cultural exchange, and few well-assimilated loanwords. Furthermore, loanwords which do exist typically represent novel items or concepts which, more likely than not, would have arrived at some point during or after the onset of British Indian administration of the region in the late 19th-early 20th centuries (Mackenzie 1884). Even following that point, however, integration with larger India proceeded at a snail’s pace, in part borne of a deliberate effort to “protect” the cultures of the Eastern Himalayan region from foreign influence (Elwin 2005 [1957]). This policy effectively remained in place until the “Chinese Aggression” of 1962, after which immigration of Hindi-speaking schoolteachers and establishment of Hindu mission schools increased dramatically (Bose 1997). Galo, and most if not all other Tani languages of the Eastern Himalaya, thus fails to fulfill the second criterion of Indospheric identity.

So if pre-modern contact with IA language speakers seems unlikely, what *can* explain the “firmly Indospheric” typological profile of Galo and many other Eastern Himalayan languages?

We might ask another question at this point. Up to now, we have been discussing relatively abstract typological features, and “cherry-picking” sentence examples which are explicitly designed to illustrate an idealized typological convergence. But how closely do “Indospheric” TB or AA and IA languages *really*

resemble one another, if their typological features are considered independently, and with no background assumption of convergence?

In the case of Tani languages, at least, the answer is “relatively little”. That is to say, although it is possible to pick out certain IA-like sentences or structural features, it is just as possible to focus on features which are anything but IA-like. Despite lacking prototypically IA-like characteristics, many such features seem to be diachronically secondary, in the sense that they appear to post-date Proto-Tibeto-Burman. Accordingly, the presence of “Indic influence” during these formative periods would appear doubtful.

For example, one might consider the complex set of predicate formatives found in the Tani languages and, indeed in most of the Indospheric TB languages of North East India.¹³⁷ Consider, for example, the Minyong sentence in (7), which consists of a verb root followed by five derivational predicate formatives, an inflection, and a clitic sentential particle.

- 7) *ami* *á=kòm* *gók-tà-kí-rám-hí-káa-tó=î.*
 person IDEN=ADD call-INCP-TENT-FRUS-REFL-RES.FOC-PFV=QTAG
 ‘The guy also tried in vain to have a go at calling, eh.’ (Upper Belt Minyong)

It would be difficult indeed to relate such complex, single-verb predicate structures to the simpler and often multi-verb structures of IA languages (see again example (4); also see virtually any chapter from Cardona and Jain (2003), especially Goswami and Tamuli (2003)).¹³⁸ Although both IA and many Indospheric TB languages are *relatively* synthetic and agglutinating by comparison with, say, Chinese, the precise characters of their morphological profiles are in fact quite different – sometimes to the extent that, if de-contextualized from any supposed “sphere of influence”-like framework, convergence would hardly be suspected.

To summarize: purported contact with IA languages is insufficient to explain the observed typological profiles of certain Indospheric TB languages, at a minimum, inasmuch as contact with IA language-speaking populations is in at least some cases highly unlikely to have occurred. Furthermore, although some features of the typology of Indospheric TB languages indeed do resemble the parallel features in IA languages, many others do not. In short, the “Indosphere/Sinosphere” model inadequately explains the observed typological divide among Subcontinental and Mainland Southeast Asian languages on two levels, at least as far as some of the relevant languages are concerned. Accordingly, it is worth wondering whether an alternative account is available which might better explain the situation.

5. An alternative account

Over a series of papers, Donegan and Stampe (1983; 2004; 2009) have argued that shifts in rhythmic alignment not only *sufficiently* explain cases of deep structural change in languages, they may even be *necessary* to their explanation – whether or not the quite separate effects of language contact (borrowing, calquing) might also be involved. The following sets of roughly opposite typological characteristics are observed by Donegan and Stampe to correlate with a prevailing falling or rising rhythm in a variety of (mostly AA) languages, and are hypothesized to be motivated by the prosodic outcomes of opposite rhythmic preferences (Table 3).

¹³⁷ For an overall description, supported by a discussion regarding the diachronic recency of the relevant construction, see Post (2010) for Tani languages and DeLancey (2010) for Bodo-Garo.

¹³⁸ Similar observations are made by Donegan and Stampe (1983), arguing against the reality of Mundan structural convergence to the IA type.

Falling rhythm	Rising rhythm
Trochaic word accent	Iambic word accent
Enclisis and suffixation	Proclisis and prefixation
CVC	Sesquisyllabism, onset clusters
Monophthongs, vowel harmony	Diphthongs, vowel reduction
Simple, register tones	Complex, contour tones
OV constituent order	VO constituent order
MOD-H modification	H-MOD modification
Case (usually suffixes)	No true case system
Synthetic, agglutinative morphology	Isolating, analytical morphology

Table 3: Typological outcomes of prevailing falling and rising rhythms

Figure 4 reproduces Donegan and Stampe’s (1983: 11) exemplification of the effects of opposite rhythmic preferences on syllable canons, which provides a succinct illustration of the potential power of rhythmic preference over the diachronic shaping of linguistic form. Beginning with a reconstructed AA form consisting of a sesquisyllabic initial followed by a stressed, bimoraic final – hypothetically reflecting a rising rhythmic preference – we find a shift to falling rhythmic preference in Proto-Mundan giving rise to a trochaic meter. Loss of accentual prominence in the final syllable next motivates a final rhyme truncation, while a gain in accentual prominence in the initial syllable motivates progressive vowel harmonization in the initial syllable; while this may appear counter-intuitive, the reason is because harmonization offers a means of assigning the rhyme a relatively polar, thus more salient, vowel quality. “Progressive” Mundan languages then develop further in this direction: the final vowel is eventually lost, while its associated mora is transferred to a consonant coda; this further strengthens the erstwhile initial, stressed syllable.

The opposite effects are found in Mon-Khmer (MK): “progressive” MK languages exhibit collapse of the de-accentuated initial syllable into the initial of an onset cluster, and accentual prominence of the erstwhile final syllable rhyme motivates diphthongization.

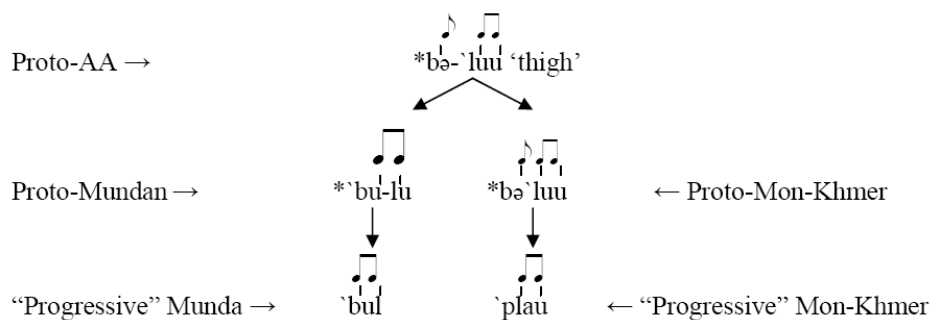


Figure 4: Rhythm and opposite prosodic drifts in Austroasiatic (adapted from Donegan and Stampe (1983: 11))

Examples (8) and (9) contrast a Sora (Mundan) sentence with its translation equivalent in Khmer (MK), and illustrate some of the typological outcomes which are hypothesized by Donegan and Stampe to result from opposite rhythmic preferences. Sora shows a preference for simple onsets, monophthongal vocalism and CVC syllables, while cluster initials and diphthongs are found in Khmer. While Sora is relatively synthetic and agglutinating, Khmer morphology is relatively isolating and analytical. While Sora has extensive suffixation, Khmer has prefixes if it has affixes at all. In addition, the appearance of cluster initials in Khmer suggests the earlier occurrence of prefixes.

- 8) *anin dəŋ-nən darəj-ən ə-tiy-ben idsim-te ted.*
 3SG OBJ-1SG rice-ART INF-give-INF want-3PR NEG
 ‘S/he doesn’t want to give me the rice.’
 (Sora (Mundan), Donegan and Stampe 2004: 3) (Falling, trochaic)

- 9) *kǎət ʔət caŋ ʔaoy baay kɲom.*
 3SG NEG want give rice 1SG(ACC?)
 ‘S/he doesn’t want to give me the rice.’
 (Khmer (M-K), Donegan and Stampe 2004: 3) (Rising, iambic)

The above examples illustrate a small subset of the typological features which are observed by Donegan and Stampe to correlate with opposite rhythmic profiles. A fuller set of features, together with a more detailed explanation of the mechanisms which are hypothesized to account for their diachronic evolution, may be found in Donegan and Stampe (1983; 2004; 2009); I will thus refer the reader to these papers for a complete exposition of their theory.

Our goal in the present context, however, will be to determine whether Donegan and Stampe’s model can provide a more plausible account of the shaping of “Indospheric” typologies than the “contact influence” subtext of the “Indospheric” label appears to be able to, in the case of Tani languages such as Galo, at least. In order to evaluate the case in terms of Galo, we’ll need to understand at least four things. First, we’ll need to understand something about the typological features of Proto-Tani, Galo’s earliest reconstructible post-PTB ancestor. Next, we need to understand something about the rhythmic preference of Galo, both in the modern language and in its ancestral stages. Thirdly, we need to look for evidence of rhythmic effects in the re-shaping of Galo’s broad typology since the Proto-Tani stage. Finally, as has already been discussed above, we would need to evaluate whether Galo’s evolved typological profile brings it in line with the “Indospheric” typology characteristic of high-IA-contact TB languages.

6. Rhythm and the synthetic drift of Tani languages

6.1. A brief, partial reconstruction of Proto-Tani

Post (2006; 2007: §2.2), building on the seminal insights of Sun (1993), has argued that Proto-Tani probably had the following characteristics:

1. lexemes primarily monosyllabic ~ sesquisyllabic (**mi* ‘person’, **tá-bí* ‘snake’...)
2. two tones at the level of the monosyllabic morpheme (**dú* ‘forearm/elbow’, **dù* ‘dig with tool’...)
3. maximal CGVX¹³⁹ syllable structure (**brán* ‘roast’, **pjón* ‘steal’...)
4. phonologically reduced and semantically general CV- prefixes (**ʔa-*, **ta-*, **ja-*, **sya-*...)
5. morphologically isolating otherwise (few grammaticalized predicate inflections...)
6. head-initial noun modification (**mík-mán* ‘eye-lack’ ‘blind (person)’)
7. compounding of simplex monosyllables (see again 6)
8. a mixture of pre-head and (mostly) post-head operators

Modern Tani languages generally have the following characteristics, albeit to different degrees and with slight regional differences:

1. lexemes primarily disyllabic (Minyong *ami* ‘person’, *tabí* ‘snake’...)
2. tonal at the level of the phonological word (Galo *lagdú* ‘forearm’, *dunàm* ‘to dig with a tool’...)
3. maximal CVX syllable structure in many languages (Galo *báa-* ‘roast’, *cóo-* ‘steal’...)
4. prefixal collapse and root-harmonization (PT **ʔá-pòŋ* ‘NPFEX-liquor’ > Galo *opòò* ‘liquor’)
5. morphologically synthetic/agglutinating, many predicate derivations and inflections (some reflecting fusion of earlier sequences)
6. head-final noun modification (Galo *ʔaník-talúu* ‘eye-plank’ ‘spectacles’)
7. compounding of etymologically complex, disyllabic words (see again 6)
8. all productive operators post-head

The following examples roughly schematize this set of developments from a reconstructed Proto-Tani stage (10) to modern-day Lare Galo (11).

¹³⁹ G = glide/liquid; X = C or V.

- 10) *ʔá-mróʔ *hì=gu=n̄ *ŋó *mám *l̄iŋ *máŋ=*d̄iŋ.
 NPFX-aconite PRX=IND=ACC 1.SG feel.with.hands want not=sit/exist
 ≅ ‘I don’t want to touch this-one arrow poison.’ (Proto-Tani reconstruction)
- 11) ʔomo^h hìgì-n̄ ŋó mám-l̄i-máa-d̄iŋ.
 arrowhead PRX.IND-ACC 1.SG feel.with.hands-DESD-NEG-IPFV
 ‘I don’t want to touch this here arrowhead.’ (Modern Lare Galo)

To the extent that we can currently discern, then, Proto-Tani exhibited typological characteristics which align it closer to the “Sinospheric” type, with “Indospheric” characteristics emerging in later stages of the Tani languages’ development. Although it is not currently possible to reconstruct most aspects of Proto-Tani prosody due to ongoing lack of adequate comparative data, in terms of Donegan and Stampe’s modelled alignment of typological features with rhythmic preference, we would predict that Proto-Tani (or a near ancestor) would most likely have exhibited a rising rhythm. By contrast, most modern Tani languages, being typologically relatively “Indospheric”, would be expected to exhibit a falling rhythm.

While we continue to lack adequate data for the majority of Tani languages, we can make a fair number of observations concerning prosody and its effects on various aspects of the structure of Galo:

6.2. Rhythmic effects in the shaping of modern Galo

Modern Galo exhibits a strongly falling rhythmic preference, leading to a robustly trochaic (strong-weak) meter at the level of the phonological word. This has motivated a series of strengthening and weakening effects in initial and final syllables, respectively. We review some of these in the following sections §6.2.1 and §6.2.2.

6.2.1. Strengthening effects

Neither monosyllabic words nor initial syllables of disyllabic words exhibit reduction or weakening phenomena in Galo. Instead, the full complement of reconstructed PT vowels is represented in modern Galo monosyllables and disyllable initials alike, in both short and long forms: *a/aa, *i/ii, *u/uu, *e/ee, *o/oo, *ə/əə, *i/ii. In addition, the following strengthening effects are observed:

6.2.1.1. Root-nuclear harmonization

Rhymes of certain weak (CV- or V-) word-initial syllables have been fortified in Galo by means of progressive harmonization with final syllable nuclei:

- (a) *ʔá-pòŋ ‘NPFX-liquor’ > Lare Galo ʔopòŋ ‘liquor’
- (b) *tá-pá ‘MDIM-maize’ > Lare Galo tɔpɔ ‘maize’ (follows Word-final weakening, see §6.2.2.2)
- (c) *mð-kì ‘fire-smoke’ > Lare Galo mikð ‘smoke’ (precedes Word-final weakening)
- (d) *ʔá-jù ‘NPFX-spirit’ > Lare Galo ʔui ‘spirit’ (precedes Word-final weakening and Inter-vocalic glide deletion, see Post (2007: §2.4.4.6))

This process is irregularly distributed in the modern Galo lexicon; for example, while an initial prefix *ʔá- progressively harmonizes in (a) and (d), and in many other cases, it is also possible to find segmentally comparable words in which harmony is not observed. For example, ʔalóo ‘bone’ (< PT *ʔá-lóŋ ‘NPFX-bone’, compare with (a)) and ʔaú ‘fat/grease’ (< PT *ʔá-fū ‘NPFX-fat/grease’, compare with (d)). It is possible that these represent the different outcomes of prefixal lexicalization at different historical stages, with consequently different inputs into a regularly-applied phonological rule (as was suggested in Post (2007: §2.4.3.1)). Looking at other Tani languages, however, in which distributions of progressive root-nuclear harmonization are often similarly irregular (and often affect forms which are unaffected in Galo, and vice versa), it seems perhaps more likely that this is simply an irregularly-diffusing process in each case.

In addition to being a light (CV- or V-) initial, in the majority of cases, the affected syllable is also an etymological prefix. However, it is not the case that all and only prefixes have progressively harmonized; (c) is an example of a lexical root which has irregularly harmonized, and tá- ‘MDIM’ is an example of a Galo

prefix which harmonizes but rarely, as in (b). Irregularity in distribution notwithstanding, the most likely motivation for this change is prosodic: metrically prominent syllables whose rhymes are not high in salience have increased their salience by copying the vowel of a following syllable.

6.2.1.2. Initial coda fortification

Again with seemingly irregular application in the lexicon, a number of etymologically light word-initial syllables are fortified by means of copying a following syllable-initial onset consonant for use as an initial coda. Perhaps unsurprisingly, this process is very often found among words with an intrinsically emphatic semantic value:

- (a) Lare Galo *ʔattór* ‘firm; hard; strong’ < PT **ʔá-tór* ‘NPFX-strong (of a current state)’
- (b) Lare Galo *ʔaddii* ‘strong; resilient; durable’ < PT **ʔá-dii* ‘NPFX-strong (of an enduring quality)’

Or, it may be found in certain pragmatically emphatic variant forms of lexemes:

- (c) Lare Galo *ʔallii* ‘very good’ < *ʔalá* ‘good’
- (d) Lare Galo *ʔallôo* ‘way over there’ < *ʔalô* ‘over there’

Otherwise, it may be found with seemingly irregular distribution among certain lexemes, including some – such as numerals – which do not obviously seem to carry an emphatic semantic value or lend themselves easily to emphatic pragmatic use.

- (e) Lare Galo *hottúm* ‘bear’ < PT **s(y)á-túm* ‘PFX:ANIM-bear’¹⁴⁰
- (f) Lare Galo *ʔayyó* ‘five’ < PT **ʔá-yyó* ‘NPFX-five’

The above examples represent cases in which initial coda fortification is irregularly lexicalized in a particular set of forms. There is also a synchronically-operating morphophonological process in Galo with approximately the same outcome and presumed functional motivation, called *Triggered foot-strengthening* in Post (2007: §4.1.4.6). In this process, concatenation of a vowel-initial enclitic to a bimoraic phonological word triggers gemination of the word-final syllable onset. In practice, this most often applies to words with underlying V.CV or CV.CV structures, although CVV words are also affected. The resulting output of (C)VC.CV effectively fortifies the initial syllable by generating a consonantal coda, much as in the irregular process described earlier in this section.

- (g) Lare Galo *tabá* ‘snake’ + =á ‘TOP’ > *tabbá* ‘the snake...’
- (h) Lare Galo *ʔayó* ‘night’ + =ám ‘ACC’ > *ʔayyóm* ‘at night’

6.2.2. Weakening effects

6.2.2.1. Syncope and apocope

Syncope and apocope (reduction or deletion of a vowel from within and at the end of a word, respectively) are both common processes in Galo phonology, with a common prosodic motivation. Since Galo is a weight/quantity-sensitive language (i.e., it treats “heavy” and “light” syllables differently), the precise outcomes of these two processes are different depending on the structure of a targeted syllable, as well its position in the phonological word and phrase. Importantly, however, only the *final* syllables of a disyllabic phonological word are affected; initial syllables of disyllabic phonological words, whether heavy or light, receive a stress accent and do not undergo any restructuring processes. Some of the segmental outcomes of this process are as follows:

- (a) word-final vowel length is neutralized in phrase-final contexts

¹⁴⁰ Contrast Upper Belt Minyong *hitum* ‘bear’ and Pasighat Adi *situm* ‘bear’, in which gemination is not observed.

Morphemes with an underlying CVV structure which occur in phonologically phrase-final contexts are realized with a rhyme which is not phonetically longer than an underlying CV syllable in the same position. The following examples illustrate this principle. First note that the underlying rhymes of the second syllables in *ʔikii* ‘dog’ and *ʔabó* ‘father’ are long (VV) and short (V) respectively; however, when pronounced in a phonologically phrase-final context as in (12) and (13), the final vowels are phonetically identical in length. That *ʔikii* ‘dog’ and *ʔabó* ‘father’ are indeed underlyingly contrastive in length can be shown by placing them in a phonologically phrase-medial context (12)–(15).¹⁴¹

- | | | | |
|-----|--|-----|---|
| 12) | <i>ŋók ʔikí</i>
ŋók-kà ʔikii
1SG-GEN dog
‘my dog’ | 13) | <i>ŋók ʔabó</i>
ŋók-kà ʔabó
1SG-GEN father
‘my father’ |
| 14) | <i>taníi gó</i>
taníi gó
person IND
‘a person’ | 15) | <i>ʔáb^o gó</i>
ʔabó gó
father IND
‘a father’ |

(b) word-final short vowels are reduced in phrase-medial contexts

As will have been seen in (15), underlyingly short vowels are reduced in phonologically phrase-medial contexts, often to the point of surfacing only as a release of the preceding consonant. In this paper, such vowels are conventionally transcribed via a superscripted variant of the underlying vowel.¹⁴²

(c) nuclei of word-final -CVC syllables are reduced in phrase-medial contexts

Again in phonologically phrase-medial contexts, the nucleus of a word-final syllable of CVC structure is reduced to schwa or consonantal release (16).

- 16) *kâak^h ná!*
káa-kèn=á
look-good/easy=cop
‘How beautiful!’

6.2.2.2. Word-final weakening

Similar to condition (b) in §6.2.2.1, although applying diachronically at the level of lexical representations rather than synchronically at the level of the phonological phrase, certain PT word-final short vowels are reduced in innovative dialects of Galo such as Lare (though not in some other Galo dialects such as Northwestern). Most straightforward among these are PT **-a*, **-i*, and **-ə*, which all merge to *-ə* in word-final environments. The proto-vocalism can be ascertained via by examining the same etymological morpheme in a word-initial environment – something that, due to the prevalence of compounding in the Tani lexicon, is often easy to do. For example:

¹⁴¹ In some Galo dialects, the rhymes in (12) and (13) are distinguished by a voiceless, aspirated release of the underlying short vowel *ʔabó^h*, contrasted with a clear-voice release of the underlying long vowel *ʔikí*. In other dialects, no phonetic reflex of the underlying length distinction has been found in phrase-final contexts. It is worth further noting that, since utterance of individual words qualifies as a phonologically phrase-final context, this means that underlying vowel length in final open syllables cannot be discovered by a traditional “wordlist”-style lexical elicitation. Accordingly, contrastive vowel length in these contexts is not represented in most of the published sources on Tani languages.

¹⁴² In Post (2007), such vowels were generally transcribed via schwa, reflecting their typical phonetic value if at all realized. It was later found that this transcription was inadequate: since schwa is phonemic in Galo, transcribing syncopated vowels via schwa made it impossible to distinguish between a full and a reduced schwa, when schwa was the underlying vowel in question. Hence, the present somewhat non-standard convention was adopted.

- (a) PT **s(y)á-rá* ‘PFX:ANIM-boar’ > Lare Galo *horá* ‘boar’ but *ranà* ‘wild sow’
- (b) PT **tá-bí* ‘MDIM-snake’ > Lare Galo *tabá* ‘snake’ but *bírám* ‘python’
- (c) PT **ʔá-hà* ‘bamboo’ > Lare Galo *ðá* ‘bamboo’, *əlìu* ‘bamboo grove’

Among the remaining PT final short vowels **-i*, **-e*, **-o*, and **-u*, **-e* and **-u* usually merge to *-i* in palatal environments, while **-u* merges to **-o* in non-palatal environments word-finally¹⁴³:

- (d) PT **ʔá-mé* ‘NPEX-elder sister’ > Lare Galo *ʔaní* ‘elder sister’
- (e) PT **ʔá-nì* ‘NPEX-two’ > Lare Galo *ʔaní* ‘two’
- (f) PT **ʔá-jù* ‘NPEX-spirit’ > Lare Galo *ʔuí* ‘spirit’
- (g) PT **ʔá-kù* ‘NPEX-old’ > Lare Galo *ʔakò* ‘old’
- (h) PT **ʔá-hò* ‘NPEX-child’ > Lare Galo *ʔað* ‘son’

While the shifts among these particular qualities are not obviously motivated by their relative lack of prominence (unlike the shift of **-a* and **-i* to schwa), the aggregate effect of these changes is to severely reduce the inventory of short vowels which are available in word-final positions, to *-ə*, *-o* and *-i*. By contrast, the full complement of seven PT vowels remains available in the rhymes of word-initial syllables (cf. §6.2.1).

6.3. Discussion

The preceding subsections have reviewed a number of cases in which initial and final syllables of disyllabic words have been restructured, with initial syllables tending to strengthen and final syllables tending to weaken. Without committing to any particular theory of metrical phonology, we can nonetheless see fairly clearly that such phenomena are indicative of a trochaic stress pattern, in which initial syllables are fortified due to stronger metrical prominence, and final syllables are reduced due to lower metrical prominence.¹⁴⁴ Accordingly, it would appear that we have ample evidence that modern Galo exhibits signature features of the falling rhythmic preference which Donegan and Stampe associate with the “Indospheric” set of typological features which were previously identified in Galo.

Furthermore, to the extent that we can discern, falling rhythm appears most likely to be a secondary feature of Galo, i.e., to have arisen in one of its post-PT ancestral stages. This is because we have seen that the effects of falling rhythm, such as progressive nuclear harmonization, applied to structures, such as prefixes, which are correlated with the preferentially rising rhythmic alignment which we earlier argued to be the most likely profile associated to the PT stage. By contrast, no signature features of rising rhythm, such as prefixal weakening or the rise of new prefixes, have been detected at any reconstructible stage in Galo’s post-PT history.

In sum, we have been able to demonstrate that Galo’s prosodic profile is indeed in line with the expectations of Donegan and Stampe’s model, inasmuch as the presence of a falling rhythmic preference correlates with the expected set of typological features. Although somewhat less concretely, we have also seen that the bulk of available evidence suggests that both falling rhythm and the correlated set of typological features have arisen relatively recently, restructuring a typology whose most salient features are in line with Donegan and Stampe’s rising rhythmic type. This view can be very roughly schematized as in Figure 5.

¹⁴³ Due to a separate and possibly earlier change, short **-e* and **-i* lengthened in non-palatal environments (in all qualifying morphemes, regardless of position in the word), removing this available set of short final vowels.

¹⁴⁴ Elsewhere, I have argued that the diachronic rise of a trochaic metrical foot in Galo and in other Tani languages has motivated coalescence of a prototypically disyllabic phonological word, whose prosodic salience has in turn led to a number of restructuring effects in the lexicon and grammar alike. Some of these restructuring effects include the overall shift in the Tani lexicon to a prototypically disyllabic, etymologically bimorphemic lexical word (Post 2006), the fusion of erstwhile sequences of monosyllabic functors, often suffixes or postpositions, into unanalyzable disyllabic units (Post 2009: §7.1) and the nascent development of verbal auxiliaries from erstwhile disyllabic sequences of grammatical suffixes (Post 2009: §7.4).

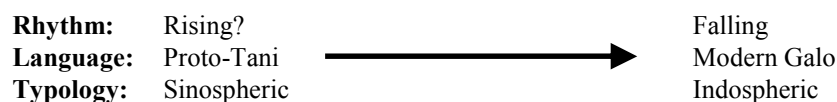


Figure 5: Correlating rhythmic and typological drift in Galo

To offer a preliminary summary, the evidence reviewed above suggests that Donegan and Stampe’s model may indeed offer a more consistent explanation for the typological divide discussed in §2 than the “Indosphere/Sinosphere” contact-with-influence model was able to, at least where Galo is concerned. This was the primary goal of the article, and I will have more to say about this in the summary conclusion in §8 below. First, however, I would like to adopt a broader view, in an attempt to locate the provenance of the rhythmic effects we have observed in Galo. Before doing so, I will straightforwardly warn the reader that much of what follows is, of necessity, highly speculative, discussing as it does several languages whose prosodic profiles and historical circumstances are but little known. Readers who lack the taste for speculation at this level can, therefore, skip over the following section should they choose to, at little cost to the article’s main aims.

7. A broader view: The status and provenance of rhythmic effects beyond Galo

Looking beyond modern Galo, we might wonder: if it is the case that Galo has undergone a rhythmic and, consequentially, typological shift, how might it have come about? Or, put somewhat more concretely, what are the contextual circumstances of Galo, in terms of genetic origins, geographical location and language contact conditions, and how well can they be correlated with the diachronic account sketched-out in Figure 5?

As discussed above, modern-day Tani languages are primarily spoken in the Eastern Himalaya, in the central region of the modern-day Indian state of Arunachal Pradesh. The ultimate origin of Tani peoples and languages is at present unknown, but is maintained by Tani oral traditions to lay somewhere outside of the present area of concentration (Post in press-a). As was briefly discussed in §4, Tani culture in general more closely resembles the hill tribal type common to the Mainland Southeast Asian region (Burling 1965); there is accordingly ample reason to suspect an origin in this area. However, linguistic evidence in general points to a “northern origin” theory, the view most commonly found in Tani oral traditions as well (Blackburn 2003/2004; Geiyi undated). Specifically, since the two primary Tani subgroups – Western Tani and Eastern Tani (Figure 6) – are concentrated in the north-south flowing Subansiri and Siang rivers respectively, and since the highest intra-Tani genetic diversity is, in general, found in the northern reaches of these two rivers, it would seem most likely that Proto-Tani is traceable to somewhere in this northern region (Figure 7); see Post (in press-a) for additional discussion.

The Brahmaputra Valley is an area about whose history a little more can be said:

Prior to 1000 BC, it is difficult to conjecture about the cultural-linguistic composition of the area, although there is at least a possibility of Austroasiatic predominance (Kakati 1995; Diffloth 2005). From 1000 BC to 400 AD we find the South-westward spread of Bodo-Garo, most likely from an initial position in the Northern Burmese/North-East Indian hill regions, where “Sal” languages such as Tangsa are spoken in great variety to this day (DeLancey 2012). From 400 AD to the present, we find the North-eastward spread of the Eastern Indo-Aryan languages Bengali and Assamese (Baruah 1960 [1933]). From 1200 AD, we find the arrival and subsequent decline of Ahom (Tai) from the Northern Burmese Shan states, plus small communities of later Tai arrivals from the same area such as Khamti, Aiton, Phake and Khamyang (Morey 2005). Sometime in or before the 19th century, we find the South-westward spread of Mising (Eastern Tani), apparently following the course of the Siang River, which in Assam becomes the Brahmaputra (Post in press-a) (Figure 8).

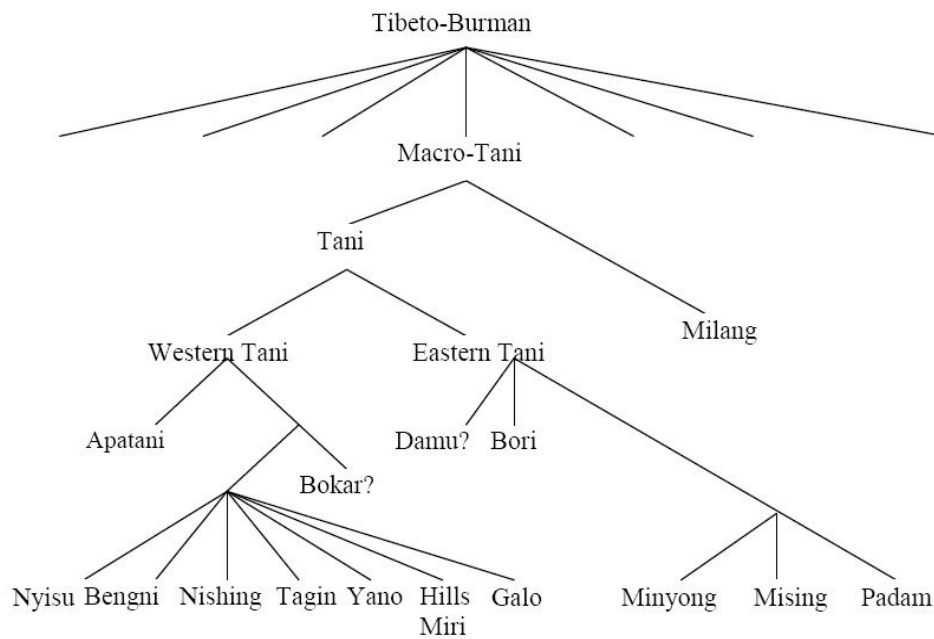


Figure 6: Tani family tree, following Post and Modi's (in press) minor revision of Sun (1993)



Figure 7: A possible homeland of the Tani cultures and/or languages

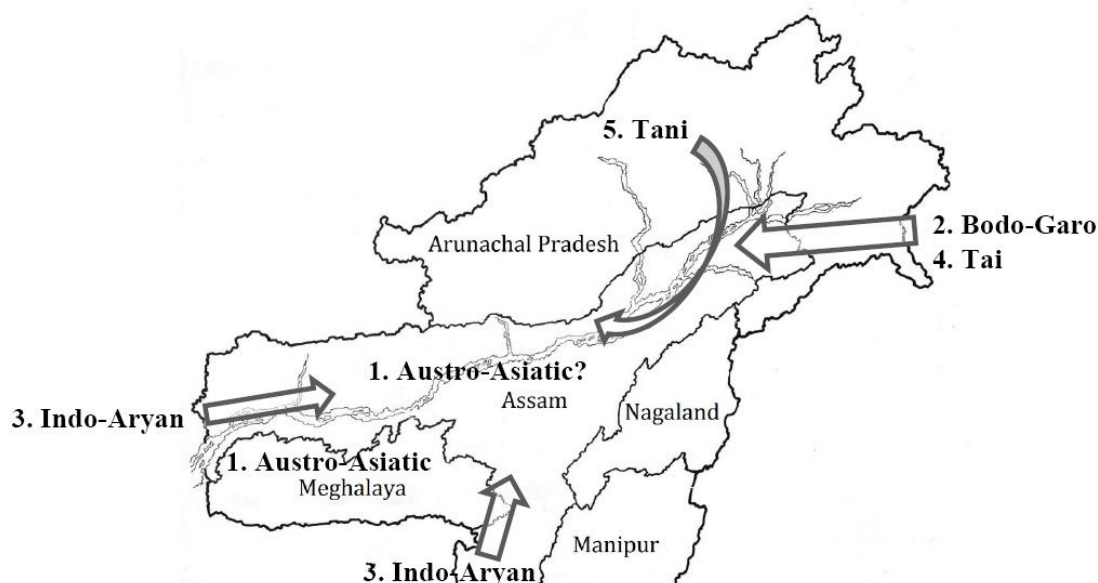


Figure 8: The peopling of the Brahmaputra Valley

Little has been written about the prosody of any of these languages, with the exception of the iambic Tai languages whose spread and influence in the region has, however, been comparatively slight (Morey 2005). Most if not all modern-day Bodo-Garo languages appear to be trochaic, although certain aspects of their grammatical typology, such as a prevalence of fossilized prefixes (Burling 2004; Joseph 2008), suggest an earlier iambic profile. Eastern IA languages, meanwhile, are uniformly trochaic (author’s field notes), as indeed are most IA languages. Accordingly, it is at least possible that the entire region was characterized by a rising rhythmic profile – possibly associated with a more widespread early distribution of Austroasiatic speakers and substrates – but that in many languages, shifts to a falling rhythm have come about. Potentially, these shifts could be associable to the spread of Eastern IA languages in the region.

This is one possibility. But looking again at the Tani languages: although all known Tani languages appear to exhibit a falling rhythm and agglutinating morphological profile, there is an uneven distribution of trochaic effects. In the Eastern Tani area, clustering around the Siang River valley, we find evidence of trochaic effects to be relatively weak. Although certain initial syllable strengthening effects are observed, few or no final weakening or reduction effects have been found – in fact, there is evidence of relatively recent iambic effects in some of these languages, such as weakening of the initial **ʔa-* prefix to *a-*. Relatively more trochaic effects are found in Galo, a “Transitional” Tani language,¹⁴⁵ as was discussed in §6.2. The greatest evidence for trochaic effects is found in Upper Belt Nyishi, a Western Tani language spoken in a geographically north-western section of the Tani area. This differential distribution of trochaic effects is schematized in Table 4.

Why should trochaic effects be stronger in the west? Well, the only honest answer is that we don’t know. But, if one is to speculate: it is in and to the west of the Tani area that we find some of the highest genetic diversity in the Tibeto-Burman region. Almost completely undescribed, the languages spoken in this region are speculatively considered to be Tibeto-Burman but contain, at the same time, both cultural and linguistic characteristics which are distinctively non-Tibeto-Burman; these languages and the populations which speak them could well harbour remnants of a much more diverse pre-Tibeto-Burman past (Blench and Post in press). Could these languages, which almost certainly would have had a wider distribution in pre-Proto-Tani times, be the proximal source of falling rhythm, in Tani – and potentially in other area languages as well? Unfortunately, since we continue to lack even a single comprehensive, reliable description of any of these languages, there is nothing to do but wonder.

¹⁴⁵ “Transitional” here is shorthand for “genetically Western, with contact-induced convergence to Eastern” (Post in press-b).

Word	PT	Western Tani	Transitional	Eastern Tani
		Nyishi	Galo	Minyong
‘dog’	*ʔá-k(w)i	ʔikj	(ʔ)ikii	əkì
‘four’	*ʔá-pri	ʔapj	(ʔ)appii	appí
‘men’s sitting area’	*bránj-gò	baagw	baagò	bangò
‘seven’	*kV-nit	kan	kanə	kənit
‘eight’	*pri-ni	piin	piinə	piini
‘snake’	*tá-bi	tab	tabə	tabi
‘leg hair’	*lə-mit	lim	ləmə	ləmit
‘come’	*váj-	ʔaa-	(ʔ)áa-	áj-

Table 4 – Differential distribution of rhythmic effects in Tani

8. Conclusion

This article’s primary goals have been, first, to suggest that while the basic typological observations underlying the “Indosphere/Sinosphere” model are accurate in a broad sense, and do roughly coincide with the geographical locations of Indic and Sinitic cultures, the “contact-influence” subtext of this model cannot be sustained in at least some cases. Specifically, there are at least some “Indospheric” languages which, though they exhibit the requisite set of typological characteristics, yet do not exhibit evidence of pre-modern contact with Indic languages. Furthermore, while these “Indospheric” languages may resemble Indic languages in a broad sense, such as being relatively agglutinating, or exhibiting finiteness asymmetries, the finer details of their typological features are not so Indic-like as to sustain a view that they have probably come about via borrowing or calquing. Second, adopting a model developed by Donegan and Stampe (1983; 2004), in which rhythmic alignment is viewed as the primary linguistic engine of typological drift, I suggested that the synchronic and diachronic facts of Galo and other Tani languages instead support a view in which a relatively “Sinospheric” language, presumably correlated to a rising rhythm, developed into modern-day languages with relatively “Indospheric” typological profiles, in concert with a hypothetical shift to today’s observed falling rhythmic alignment. Accordingly, my argument is that Donegan and Stampe’s model can provide a more consistent explanation for the observed typological divide in Greater Mainland South East Asian languages than does the “contact-influence” subtext of the “Indosphere/Sinosphere” model.

I then proceeded with an admittedly speculative inquiry regarding the possible provenance of falling rhythm in the Tani area. While little can be said with confidence regarding the pre-history of the Eastern Himalayan region, the bulk of evidence adduced to date suggests that 1) the Tani languages spread in the area relatively recently, from a more-or-less northern position 2) a group of genetically diverse languages probably pre-dated Tani languages in this area, and could be retained in the Tani area as one or more substrates 3) the area to the south of the Tani was perhaps initially dominated by Austroasiatic, followed by Bodo-Garo, and lastly by Indo-Aryan speakers, up to and including the present day. Accordingly, the diachronic rise of a falling rhythm in the region, with attendant changes in the grammatical typologies of regional languages, could potentially be attributable to pre-existing substrate languages, or else could be associated with the spread of Indo-Aryan languages in the modern-day Indian Northeast.

So does this lead us back to where we started? If the spread of falling rhythm in the region coincides with the spread of Indo-Aryan languages, doesn’t this mean that we are dealing, after all, with an “Indosphere”? Well, no, or at least, not in the sense originally implied. As virtually any detailed study of language contact phenomena will amply demonstrate, the structural features of a language do not spread like a disease. Diffusion of structural features requires more than simply contact: it requires learning and understanding: bilingualism and interaction (Thomason and Kaufman 1988; Aikhenvald 2007, among many others). By contrast, prosodic diffusion requires little more than contact; contact, that is, followed by the almost inevitable convergence upon the behavioural characteristics of others which results from the fundamental learning and adaptive processes which characterize human beings and all other mammals: it requires only imitation; not understanding (Epps 2007). Through imitation of the observable behaviour of others, prosodic features can, from a particular area of concentration, spread over vast geographical distances, bringing languages into close alignment with respect to some aspects of their linguistic profiles, despite their speakers never in fact having come into contact with one another.

The conclusion to be drawn, then, is: whether or not the ultimate source of falling rhythm in the “Indospheric” region of Greater Mainland South East Asia can be traced to Indo-Aryan languages, it is rhythm – not language contact, bilingualism and population interchange – that most likely provides us with the proximal cause of “Indospheric” language typology, at a minimum. Accordingly, it is worth dispensing with the labels “Indosphere” and “Sinosphere”, not only because of the possibly incorrect characterization of the proximal cause of typological alignment that they provide, but because of the pre-historical dominant/subordinate population relationships that they imply, for which – in several cases at least – no evidence whatsoever is available.

The alternative “rhythmic alignment” account of Donegan and Stampe, I have argued, is consistent with the Tani data, but remains to be tested on a wider set of languages, TB, AA and other. It is hoped that a qualitative and quantitative improvement upon the current level of prosodic description in grammars and associated descriptive works treating regional languages will one day make this possible. But in the meantime, studies which indicate the presence or absence of correlations between the rhythmic profiles and typological characteristics of individual languages or subgroups, and which further address their diachronic development, would make welcome contributions.

Abbreviations:

AA	Austroasiatic	MDIM	Masculine diminutive
ACC	Accusative	MK	Mon-Khmer
ACNC	Additive concessive	MOD	Modifier
ANIM	Animate	NEG	Negative
ADD	Additive	NF	Non-final
ART	Article	NOM	Nominative
Asm	Assamese	NPFX	Noun prefix
ASS	Assertive	NZR	Nominalizer
C	Consonant	O	Transitive object
CMPL	Completive	OBJ	Object
DESD	Desiderative	PFX	Prefix
ERG	Ergative	PRX	Proximate
ET	Eastern Tani	PT	Proto-Tani
F	Feminine	QUOT	Quotative
FRUS	Frustrative	RES.FOC	Result focus
FUT	Future	SFOC	Sequential focus
G	Glide (liquid)	SG	Singular
GEN	Genitive	SUB	Subject
H	Head	TAM	Tense, aspect and modality
IA	Indo-Aryan	TB	Tibeto-Burman
IDEN	Identifiable	TENT	Tentative
INCP	Incipient	TOP	Topic
IND	Individuator	V	Vowel
INF	Infinitive	V	Predicate
IPFV	Imperfective	X	Segment (consonant or vowel)
IRR	Irrealis		

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