

Phonological Convergence Between Languages in Contact:
Mon-Khmer Structural Borrowing in Burmese

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This paper enumerates and discusses a number of historical changes in the phonology of Burmese, a Tibeto-Burman (TB) language, which have resulted in convergence towards genetically unrelated Mon, a Mon-Khmer (MK) language.

Areal linguistics as exemplified in the work of Emeneau on South Asia and Henderson on Southeast Asia has shown that adjacent languages tend to have similar characteristics. It is also possible to observe such similarities between two specific languages, as Gumperz and Weinreich have done. What I shall attempt is to trace the development of such similarities, in a case where both written records and previous historical linguistic work permit.

History

Burmese is now the TB language with by far the largest number of speakers, perhaps twenty million. Most other TB languages are spoken by groups with anything from a few hundred to a couple of million members; of these, only Tibetan, Newari, Manipuri, and Tripuri have been used as the language of a large traditional state. Thus, Burmese has been the most successful TB language in 'acquiring' speakers.

The phonological history of the Lolo-Burmese subgroup of Proto-TB, which includes Burmese, has been clarified in excellent comparative linguistic work, by Benedict and Shafer at Berkeley in the late 1930's and later; and more recently by Burling, Matisoff, and his students. Burmese itself is extensively attested since 1112 AD in inscriptions.

The history of the people who spoke Proto-Burmese is less clear. It seems they became the politically dominant group in Upper Burma, near Mandalay, about the tenth century AD. For many centuries after that they were in conflict with a series of Mon kingdoms in Lower Burma, which were eventually conquered. What is eminently clear is that Lower Burma, where the capital Rangoon is located, was mainly populated by speakers of Mon only a few centuries ago.

There is a continuing process of 'Burmanization' of the Mons in Burma, which has been going on for nearly a millenium, and is still continuing. At present in the Mon State around Moulmein in southeastern Burma most Mons are bilingual in Burmese and Mon, and many people who speak only Burmese are aware of their Mon genetic background. For example, my esteemed Burmese teacher Hla Pe, professor of Burmese at the University of London, is an ethnic Mon but does not speak Mon.

Well-known historically-documented borrowings from Mon include the Burmese orthography; Burmese was probably first written by Mon monks, who also brought their Theravada variety of Buddhism. Much of the vocabulary of Buddhism was borrowed from Pali via Mon

into Burmese . Other Mon lexical material has also been identified in Burmese - see Hla Pe 1967.

Since so many speakers of Burmese have a Mon background (including large numbers who now have no awareness of it) it is hardly suprising that the structure of Burmese phonology has also been affected. I will give a number of examples in which it appears that Burmese has diverged from closely-related Lolo-Burmese languages in the direction of unrelated Mon.

Suprasegmentals

Prosodies or suprasegmentals are often labelled as 'tone' or 'register' or 'stress' or 'length' when the parameters involved in the opposition include realizations associated with all of these: fundamental frequency (pitch), phonation (voice quality), intensity (loudness), and duration. Burmese has usually been described as a tone language, as have most other TB languages, but in fact if a case must be made for one contrastive parameter, a better case can be made for register in Burmese. In this respect it has become more like Mon, which like most MK languages uses a register contrast. Conversely, languages such as Lahu and Lisu, closely related to Burmese, have proliferated pitch/contour tone contrasts (Bradley 1977), and most TB languages are tonal. The following chart shows the realizations of the 'tones' of Burmese; the first column gives the traditional Burmese term for each category.²

	phonation	pitch	contour	duration	intensity
'creaky'	tight or creaky	fairly high	slight fall	shorter	fairly high
'even'	normal	fairly low	level or slight fall	longer	low
'heavy'	slack or breathy	inter- mediate	sharp fall	longest	very high
(with different vowel nucleus possibilities, and a final stop)					
'killed'	normal or tight	very high	slight fall	very short	high

Fundamental frequency is not a reliable cue to the 'tones' of Burmese; speakers vary between higher and lower pitched 'creaky' in certain environments. Also, the 'heavy', which is usually described as 'high falling tone', is often lower than the 'even' which is often called the 'low tone'. Worse, most 'tones' in fact have similar contours.

Maran has proposed an analysis which attributes the prosodic opposition to abstract final segments which themselves have no realization, but which condition the various differences noted above. This analysis has little diachronic and no synchronic support.

The analysis which seems to correspond to native intuitions as reflected in the traditional names, and which is consistently

reflected in the realization, is the register analysis: a three-way opposition of creaky, normal, and breathy voice quality.³ In most MK languages, there is a two-way register opposition, as in Mon; thus both Mon and Burmese use register contrastively.⁴

In the Arakanese dialect of Burmese there are secondary vowel developments which are typical of a register language, but not of a tonal one; these further arguments for the register analysis are presented below.

Vowel-System Convergence

There are three main ways in which Burmese vowels have changed from the typical TB pattern in the direction of a more MK-like one. The overall result is a larger inventory of monophthongs; several diphthongs which are frequently found in MK languages but rarely in TB languages; and a Burmese vowel nucleus borrowed from Mon, never regularly found in the Proto-TB component of the Burmese lexicon.

The typical TB vowel inventory includes five monophthongs, viz. /i e a o u/; Burmese has monophthongized two further Proto-TB diphthongs, *ay and *aw, to produce a seven vowel system with /ɛ / and /ɔ / in oral nonstopped syllables with the register opposition, and has further developed a /ə / in pretonic syllables as described below in the section on word structure. Thus the Burmese inventory approaches the typical MK symmetrical nine-vowel system, lacking only an /ɨ /.

Several nasal and stop-final nuclei represented in the Burmese orthography by monophthongs and final consonants have become diphthongs in most dialects of Burmese (though the details of which combinations result in which diphthong differ from dialect to dialect; see Bradley 1979c). Though these final consonant oppositions are now completely neutralized, some features are reflected in the resulting diphthong. Specifically, in most dialects,

*im/in/ip/it /ei/ with nasalization or final stop

*um/un/up/ut /ou/ with nasalization or final stop

*oŋ/ok /au/ with nasalization or final stop

Further, combinations reconstructed and written with a medial w have in several cases monophthongized to increase the inventory of nasal and stop-final vowel nuclei; the result is seven nasalized vowel nuclei, and eight stop-final vowel nuclei; again, a more MK-like system.

One of these nuclei is /ai/, nasalized or stop-final. Words with this nucleus never have regularly-corresponding cognates outside Burmish, the subgroup of Lolo-Burmese closest to Burmese. Most lexical items with this nucleus are Mon or other loanwords: some usually attributed to Shan/Thai, others to Pali, and a few unclear. There are a couple of Proto-TB etyma which have shifted into this category, rather than the regular /au/, from *u:ŋ or *u:k.

Interaction of Vowels and Suprasegmentals

MK languages - and register languages generally (Gregerson 1976) - show vowel height differences which relate to the register system. As noted above, so does at least one dialect of Burmese: Arakanese.

In Arakanese all vowels have higher allophones when in a breathy ('heavy tone') syllable. Moreover, what is /e/ in Burmese has split in Arakanese between /i/ mainly in breathy syllables and /e̤/, which corresponds also to Burmese /ɛ/, in other syllable types. Burmese contact with Arakanese as the 'standard' language has complicated this picture, and there is considerable stylistic variation in Arakanese.

Nevertheless, here is another strong argument for the register analysis. In tone languages (with a few exceptions) there is little correlation between tongue height and pitch height⁵ but more frequently correlations instead between features of adjacent consonants and pitch height/contour. But Gregerson, Glover, and others have demonstrated a regular relationship, based on tongue root position, in register languages in all areas of the world.

Consonants

Again, Burmese has undergone a number of developments in its inventory of consonants which result in a more MK-like system.

Most TB languages, including most other Lolo-Burmese languages, have an opposition between alveolar fricatives and affricates, e.g. /s/ and /ts/, versus palatal or alveopalatal fricatives and affricates, e.g. /ʃ/ and /tʃ/. Burmese has collapsed *s and *ʃ to |s|, now pronounced /θ/; and has collapsed *ts and *tʃ to |c|, now pronounced /s/. Apart from a few northern MK languages, it is typical of MK not to contrast alveolar as opposed to alveopalatal fricatives or affricates; thus again Burmese has become more Mon-like.

One typologically unusual property of MK languages, including Mon, is that they may have palatal stop or nasal in syllable-final position. This is not usual in TB languages, but in the Burmese orthography, final palatal stop and nasal are written. Whether they had the value of final palatals when the orthography was devised is unclear; on the whole they developed from *i with a *velar or less frequently *alveolar final, so it seems phonetically reasonable that they may have. Now, however, like other *finals, the position contrast has been neutralized and is reflected only in vowel nucleus differences.

Word Structure

Henderson 1951 points out the essentially similar word structure, (C)C(C)V(C)^S, of various unrelated Southeast Asian languages: Thai, Khmer, and so on. That is, words may have a first 'minor syllable' or 'pretonic syllable' with schwa vowel and no suprasegmental opposition (tone, register, or otherwise). The consonant and cluster possibilities are often limited in the 'minor syllable', and of course there is no vowel opposition.

Mon, like nearly all MK languages, has this word structure. For

Proto-TB, Wolfenden and others have reconstructed morphological prefixes, but most of these prefixes seem to have been fused into the initial consonants by the Proto-Lolo-Burmese stage (Bradley 1979b). Only a few such as the *ʔə- kinship term prefix have survived; but in most Lolo-Burmese languages they have become full syllables with a tone. So Lolo-Burmese languages other than Burmese have mainly one-syllable monomorphemic words.

Burmese has instead reduced a large number of full syllables to 'minor syllables', resulting in another parallelism with MK, in the basic word structure.

The most frequent minor-syllable words in Burmese contain a grammatical functor which has a full-syllable cognate elsewhere in TB. Examples include:

mə -	'negative' (preceding verbs)
ʔə -	'adverbializer/nominalizer (preceding verbs)
tə -	'one' (preceding numeral classifiers)
nə -	'two' (preceding numeral classifiers)
khupə -	'seven' (preceding numeral classifiers; derived from 'two')

as well as the kinship term prefix ʔə-, which occurs mainly with terms for relatives of the same or a younger generation. Thus the very frequent classifier phrase (numeral plus classifier), a part of the noun phrase, will most frequently show this MK-like word structure; as will all negated or derived forms of verbs.

There are also very many Burmese nouns which have had their first syllables reduced. In most cases the original, unreduced first syllable is recoverable from external or internal evidence. In some cases, etymology provides evidence for the full form; in a few cases, inscriptions provide earlier forms that are now spelled with the reduced form. In numerous instances, dialect and standard forms differ: either the dialect reflects the full first syllable and the standard reduces it, or vice versa. There are also examples in which the modern spelling still reflects the former full syllable, but pronunciation always has the reduced form. Many examples show a synchronically transparent or even productive process of reduction. Of course, there are also cases of loanwords, from languages that also have 'minor syllable' forms or to reflect borrowed short vowels. Finally, there is a small residue of unexplained cases, which may either be loans, or may have unclear etymologies.

It is not always clear what the conditioning factor is in the reduction of some two-syllable nouns and the non-reduction of others; perhaps the more closely-bound, unanalyzable noun compounds are more likely to undergo reduction. There are semantic factors involved, for example the frequent reduction of certain body part words (lɛʔ 'arm/hand', chi 'foot/leg', na 'ear', and so on) which categorize major regions of the body - these also happen to occur frequently in two-syllable compounds, so both semantic and morpho-phonemic processes may be involved.

Less frequently, as in the case of the kinship term prefix, the 'minor syllable' has a very good etymology. For example, 'ant' is

reconstructed as Proto-Lolo-Burmese *p-rwak; the prefix occurs in the Burmese form pə rweʔ. Similarly 'flute' can be reconstructed as *p-lwe¹ (the superscript numeral is a reconstructed tone category); the Burmese cognate is pə lwe. Examples of this type are very few.

Even rarer are examples of verbs which have a 'minor syllable'. gə zà 'to play' is one of the few; in this case the first syllable has probably been reduced from the full verb ká 'to dance'; etymology provides evidence as to the full form.

The following noun examples show the various types of reduction of the first-syllable possibilities enumerated above. They are far from exhaustively listed; these two-syllable nouns are a very frequent phenomenon in the Burmese lexicon. Many other instances of each type could be given.

1. etymology supports full first syllable

θə meʔ 'son-in-law' from *ya² 'son/child' plus *C-mak 'son-in-law'
sə bā 'paddy' from *ca¹ 'food' plus MK root for 'rice'

2. inscriptions support full first syllable (as well as etymology)

ʔə ko 'elder brother' inscriptional form |ac kuiw|, from *wə
nə má 'younger sister' inscriptional form |nham ma|, from *sə

3. dialect and standard forms disagree (in these cases, spelling also usually gives the full form)

shə bī 'head hair', Arakanese shə bā, spelling |cham paŋ|₁
(the dialect supports the spelling and reconstruction *cam₁)

leiʔ pya 'butterfly', Arakanese lə pra
(standard, spelling, and etymology *lip all support the full form)

4. spelling retains the etymologically-expected unreduced form

pə ləu 'heart'; etymon for 'heart' is *s-nik; spelled |nhac
phə naʔ 'sandals'; spelling |phi nap| not supported by etymology

5. semiproductive or productive examples

cà 'tiger'; cə θiʔ 'leopard'
(also various other animal names: 'fish', 'cow', and so on)
nà 'ear'; nə kwī 'earring'
(also various other body parts: 'arm/hand', 'foot/leg', etc.)
dà 'knife'; dəʔ ù 'knife tip'

A number of other examples of this type occur, such as parts of plants with θə- from θiʔ 'tree', free form θiʔ pī. In such cases the spelling also reflects the unreduced form.

6. loanwords

pə ləu 'Palaung' (name of a MK group in Upper Burma)
kə lā 'Indian'
(this word can be recursively reduced, as in kə lə thāi 'chair' the Indian sitting device, containing the verb thāi 'sit')

7. unanalyzable (etymology unavailable or unclear)

bəzei 'axe' spelled pu chin
 dəyɛ 'antelope' spelled da ray

There are also a number of words for tools, parts of a boat, and so on which contain the 'minor syllable' tə- or də-, written as if pronounced ta, spelled tam .

In addition to the analyzable adverbs with the prefix ʔə-, there are a number of adverbs with the numeral 'one' tə-, usually in a reduplicated four-syllable word. Moreover, there are several other less easily derivable adverbs, such as the following:

gəné 'today' - the second syllable is 'day'
 gəyú 'carefully'

One possible source for these two is a reduced form of the topic particle ká, which may have become word-initial when the demonstrative ʔə was lost, reducing these two words to the more frequent two-syllable type.

It should not be claimed that all instances can be explained in terms of reduction, as noted above; but on the whole, it seems that Burmese has rearranged its word structure, a relatively basic part of the phonology, from one-syllable towards the Mon (and MK) 'minor syllable' plus main syllable pattern; and that the main mechanism of this restructuring has been reduction of first syllables, including some morphological functors, in two-syllable bimorphemic compounds.

Conclusion

I have tried to show several areas of Burmese phonology which have changed during the recent history of Burmese in the direction of Mon, at a time when Burmese was in contact with Mon. Specifically, it seems that many speakers of Mon were 'becoming' speakers of Burmese.

The most basic area of change seems to be the reanalysis of the main suprasegmental contrast as register rather than tone in Burmese.

Vowel and consonant systems have also become more similar to a Mon-like structure.

The basic pattern of 'minor syllable' plus full syllable has become established in Burmese, though various evidence shows that this has been a recent, gradual, and partially nonsystematic process. Basically, some closely-bound two-syllable noun compounds have had their first syllable reduced.

Finally, it should be noted that the convergence I have documented has not been to an identical phonological system with Mon, but rather to a typologically more MK-like pattern for Burmese.

Footnotes

1. I am glad to acknowledge comments by Matisoff, Diffloth, Haas and Thurgood at the meeting; and also by Benedict and Gregerson.

- This is not to blame them for any remaining inadequacies, which are of course my responsibility. I use * before reconstructed forms, and vertical lines to enclose transliterated Burmese.
2. These observations are derived from instrumental work with two speakers from Mandalay, one male and one female. I used F-J fundamental frequency meter, electroglottograph, and intensity meter, recording the results on a mingograf; also narrow-band spectrograms from a Voiceprint sound spectrograph.
 3. Mary Haas pointed out that duration is similarly consistent and could also be considered to be the contrastive suprasegmental; intensity similarly differentiates; but three-way stress or length distinctions are rare.
 4. Most MK languages, as Gerard Diffloth pointed out, are thought to have developed register from *voiceless versus *voiced initial consonant features preserved in voice quality, but lost in the initial segments. By the time Mon and Burmese came into contact, it seems reasonable that Mon had already developed the voice quality feature, though of course the orthography represents it in the initials.
 5. W. S-Y Wang has given some Chinese dialect examples; there is also an example in Lahu, where *uk has /o/ as its reflex in the low stopped tone, but /u/ with high rising tone.
 6. Lahu is an exception, but the merger in Lahu, like its nine vowel system, may perhaps be an instance of convergence between Lahu and Shan, which also lacks this contrast, and has a nine vowel system.
 7. This MK etymology was provided by Diffloth.

Bibliography

- Benedict, P.K. Sino-Tibetan: a Conspectus Cambridge 1972
- Bradley, D. 'Proto-Loloish Tones' Pacific Linguistics A49 1-22 1977
- Lahu Dialects ANU Press 1979a
- Proto-Loloish Scandinavian Institute of Asian Studies Monograph Series No.39 London 1979b
- 'Arakanese Vowels' paper delivered at 12th Sino-Tibetan Conference, Paris 1979c
- Burling, R. Proto-Lolo-Burmese IJAL 33.1 part 2 1967
- Emeneau, M.B. 'India as a linguistic area' Lg 32.1 3-16 1956
- Glover, W.W. 'Register in Tibeto-Burman languages of Nepal: a comparison with Mon-Khmer' Pacific Linguistics A29 1-22 1971
- Gregerson, K. 'Tongue-root and register in Mon-Khmer' Austro-Asiatic Studies ed. P.N. Jenner, L.C. Thompson and S. Starosta, Oceanic Linguistics Special Publication No.13 vol.1 323-369 Honolulu 1976
- Gumperz, J. Language in Social Groups Stanford 1971
- Henderson, E.J.A. 'The phonology of loanwords in some South-East Asian languages' TPS 131-158 1951
- 'The topography of some phonological and morphological characteristics of South-East Asian

- languages' Lingua 15 400-434 1965
- Hla Pe 'A tentative list of Mon loanwords in Burmese'
Journal of the Burma Research Society 50.1
71-94 1967
- Maran, Laraw 'A note on the development of tonal systems in
Tibeto-Burman' OPWSTBL 2 24pp. 1971
- Matisoff, J.A. Lahu and Proto-Lolo-Burmese OPWSTBL 1 117-221
1969
- 'Glottal dissimilation and the Lahu high rising
tone: a tonogenetic case study' JAOS 90.1
13-44 1970
- The Loloish Tonal Split Revisited Research
Monograph No.7, Center for South and Southeast
Asian Studies, Berkeley 1972
- 'Problems and progress in Lolo-Burmese: Quo
Vadimus?' paper delivered at 6th Sino-Tibetan
Conference, San Diego 1973
- Variational Semantics in Tibeto-Burman
Philadelphia 1978
- Weinreich, U. Languages in Contact New York 1953