The phonology of standard upper Burmese (Mandalay-Sagaing dialect) with particular reference to its implications for Burmese historical phonology

F. K. Lehman (F.K.L. Chit Hlaing)
University of Illinois at Urbana-Champaign

I. Introduction.

This paper embodies the results of a field study carried out at Mandalay in the Spring of 1988. I had never before taken any systematic notice of these Northern dialects though I speak one and have known, ever since the work of Maran (1971), that they might prove important for the comparative-historical phonology of Burmese, and indeed of Lolo-Burmese more generally. During the Spring of 1988, however, I was attached, some of the time as a monk, to a teaching monastery at Mandalay, the *Mahamyaing* monastery, where the abbot and the elder teaching staff were all native speakers of fairly extreme varieties of the dialects in question, coming, as they all have originally, from rather remote village areas in the north of the Sagaing Division. Since my first purpose here is to put on record the facts of the dialects' phonology (I can find no published record of it anywhere), I shall get right to those facts. The possible theoretical implications will appear as needed, ultimately at the end of this paper.

II. Peculiarities of the vowels.

I call the facts I shall set out peculiarities only because they are quite striking relatively either to the recorded vowel phonology of standard Burmese (and the non-standard dialects, such as Yaw, Tavoy and so on, which have been put on record in various places, though generally not published). One is immediately struck by the fact that the vowel ordinarily transcribed as /ɑ/ ([ə], in these closed syllables, more usually) is radically fronted to /æ/ in syllables closed with a final written as a front stop or nasal. I put the matter this way in order to leave it open for the time being whether or not the

stops have all become glottal stops in this dialect, and the nasals simply nasalisation of the nuclear vowel, which is the usual description for the standard Rangoon (Yangone) dialect, or whether, as the sound spectrograms Maran produced in connexion with his original research suggest for more northern dialects, they maintain a (weak) front oral articulation — with the written bilabials collapsing upon the apicals. It can be argued that the fronting is a live phonological, or even phonetic rule, that would confirm Maran's tentative analysis of 1971, of course. Otherwise, the facts to be recorded here can serve at least to confirm that syllables standardly written with no modifying vowel sign (effectually indicating vowel /ɑ/) and a front (apical or bilabial) stop or nasal final indeed ended phonetically with front consonants a lot more recently than mere comparative evidence is able to show. E.g., Std. Burmese [*lā:*] -> N'n. [*læN:*], 'road' (WB လမ်း llam:l); Std. B. [*lə?*] -> N'n.B. [*læT?*], 'middle' (WB လတ် llat), where ':' = 'Heavy Tone,' high, long, breathy, and slowly falling before pause.

It is certain, then, that at least at one time in the past there must have been a rule of assimilative fronting of this vowel in the context of a following front syllable final consonant. The strict complementary distribution between [ɑ] and [æ], the first always and only in open syllables, the latter always and only in closed syllables, at least suggests this may have been a fairly low-level rule, more nearly perhaps phonetic than phonological, and this suspicion is strengthened by the fact that even in the more standard dialects the vowel in question tends (there is a good deal of variation, here) to be at least slightly fronted and very slightly raised to [ə], though never approaching the extreme low front vowel being here put on record. Whichever be the case, the rule in question is a perfectly natural one, assimilating a vowel to the front position of the following consonant. The rule in question could not plausibly have come into being after the supposed collapse of the finals to /ʔ/ and nasalisation, respectively, since there is no natural process to describe it in that case. It would have to be proposed, for such an unlikely situation, that there was a 'feature-wise' quite arbitrary rule that fronted the vowel before 'anything.' That is because of the radical distinction between a nasalisation feature (either a feature of the vowel itself, or an underspecified postvocalic nasal consonant, which is more

consistent with the junctural facts of the language[1]) and a glottal stop.[2]

Further observations bear on the foregoing questions. Of all the recorded non-standard dialects (and I have myself worked with informants from nearly all), no other one has anything like the fronting rule in question. Furthermore, there is not a hint anywhere in the early attempts to record Burmese by outside observers (Europeans from various countries, and Chinese). In particular, in the Eighteenth and early Nineteenth Centuries there were any number of instances of the kind, and however clumsy they may have been, some of them are quite interpretable phonetically, and none of those hints at anything like the fronting under examination in the present paper. This is all the more surprising because, prior to the colonial period, the Burmese these observers were attempting to record was the language heard at Court and in the capital, and that was in Upper Burma, in the very Mandalay-Sagaing-Ava region from which I have recorded my data. In fact, Delta (Rangoon) speech only became the 'standard' after the fall of the Burmese Court to the British in 1885. Even further, the early- to mid-Nineteenth Century transcription of Burmese (again demonstrably Upper Dry Zone speech) by such thoroughly accurate observers as Judson (1945, 1953) also give no indication of the fronting rule.

What they all agree upon, however, is at least some indication that the postvocalic finals were still 'live,' at least as late as the late Nineteenth Century. This cannot be easily dismissed either as a sort of hypercorrection based upon the orthography (or upon an orthographically based instruction by native teachers), or as a naïve attempt to transcribe in familiar letters the alien sounds of the Burmese. What was written as a final labial was always transcribed as a final dental. Moreover, where the orthography writes | -ak |, the transcriptions tend strongly to transcribe '-e̱t̲' ; the vowel shift in question is too well known to need comment here, but what is more to the point is that (cf. Maran 1971, and Lehman 1970) the apparent shift of the consonant from velar to apical appears to be part of an old phonological tendency of the language, a long-term trend towards a binary contrastive distribution between velar and dental syllable finals: dentals following simplex vowels, velars following diphthongs / glides. We already know that

Old Burmese shows only velars (the trivial exceptions being almost certainly merely spelling peculiarities, more often than not for borrowed words only) in syllables written with diphthongs, even where T-B etymological comparison leads us to reconstruct some Lolo-Burmese closed syllables with such etymological nuclei as having non-velar finals. At any rate, in OB≈WB (Old Burmese, Written Burmese) we find |-aik|, |-aiŋ|, |-auk| and |auŋ| (အိုက်, အိုင်, ဩက်, ဩင်), and 'never' |-ait/pl, |-ain/ml, |-aut/pl or |-aun/ml . Furthermore, some time later than the time of OB the simplex high vowels /i/ and /u/ all diphthongised in closed syllables to /-ei-/ and /-ou-/, respectively. In such syllables, regardless of whether they were spelt with final velars or dentals or labials (and regardless of whether comparative T-B evidence has to reconstruct their etyma with velar or non-velar finals), the evidence from the transcriptions is strongly to the effect that they were pronounced with velar finals by the Eighteenth and into the Nineteenth Century. This, indeed, seems to be the origin of the standardised British informal romanisation of Burmese (see Okell, 1971), where, canonically, we get |-at/nl, |-it/nl, |-ut/nl, |-et/nl, but |-eik[3] |, |-ouk|, |-auk/ngl, |-aik/ngl . Finally, Maran's findings, both for some standard Upper Burmese dialects and for the more unusual dialects of the Upper Irrawaddy, were that, however weakly, the finals were orally articulated with precisely the distribution indicated by the transcriptions: velars after glides, dentals after plain vowels.[4]

What all this suggests, so far, is that the fronting of the unrounded, low vowel /ɑ/ to [æ] in closed syllables is almost certainly a fairly recent development, a unique innovation in the Upper Burmese dialects only; it certainly cannot go back to Old, or even Middle Burmese (MB, say of the Fifteenth Century to the mid Eighteenth), since the present array of dialects appears to stem from the early Modern Burmese period, and one would expect that the innovation/shift in question, had it started in OB or even MB would not be restricted to only the modern Upper Burma dialects, and this is apart from the inferential evidence from the foreign transcriptions that the shift is indeed quite recent, though perhaps it represents a gradual intrusion into more standard Upper Burmese (the dialect of Mandalay and Sagaing towns) of what might have been formerly a feature only of remote dialects of what is now the upper part of the Sagaing Division

— but not, please note a feature, even now, of the Upper Irrawaddy dialects reported by Maran from the area between Katha and Bhamo.

III. The Evidence from /ɑ/ on the Creaky Tone.

There is yet another phenomenon peculiar to, and characteristic of the Upper Burmese dialects. There appears to be a distinction of syllable type in this dialect that is not found in standard Burmese and is not, to the best of my knowledge recorded in the meagre literature on other non-standard dialects. Omitting minor details and some uncertainties remaining to be investigated, an open syllable vowel /ɑ/ on the short ('creaky') tone that does not undergo clitic reduction (that is to say loss of lexically distinctive tone and associated laryngeal features, neutralisation or considerable shortening to [ə] — cf. Lehman 1973), but is non-word-final and therefore subject to a certain degree of shortening, becomes, especially in deliberate speech, a very distinctive [ɛ]. Thus, the Burmese-Pāli word (these are especially subject to deliberate styles of speech) *a.rahaN;* (အရဟံ — an epithet of the Lord Buddha) is, here, [ʔɛrəhæ̃]; *hpa.gawa* (ဘဂဝါ — 'Lord,' another epithet of the Buddha) is [pʰɛkəwaː].

The only plausible account of this phenomenon is that the vowel is fronted if immediately followed by a 'lowered' glottal stop.[5] The exact nature of the glottal stop is not relevant, but it is certainly distinctive from the glottal finals that are written as final oral stops. The process, as can be seen, is very different from the previously described one; it is not assimilative but *dis*similative — in fact doubly so — and compensatory. The vowel seems to front *and* raise (there is no audible overlap between the respective ranges of the [æ] and the [ɛ] described in this paper) where the following final is back and low. The very restricted distribution of the phenomenon as just described makes it clear that it occurs only where the laryngeal is present at some underlying level of representation, for it does not take place in the case of orthographical |a| that is subject to clitic reduction, i.e., which is not on the short tone and provides no evidence for creakiness or any related sort of laryngeal phonation.That is to say that the fronting and raising of the vowel takes place prior to the deletion of the laryngeal, a deletion that regularly takes effect just in non word-final syllables.

Note that this process, unlike the previously described fronting, cannot be phonetic and must be a phonological process. In the first place, it is, as just shown, an adjustment to a condition at a fairly remote level of phonological representation. In the second place, it takes the underlying vowel /a/ into the independently attested phoneme /ɛ/. There is certainly no good reason to posit for this or any dialect of Burmese that there are two phonemically distinct low front vowels, /æ/ and /ɛ/. Moreover, this is not the only such dissimilative fronting process in the language. In this dialect most particularly, though not exclusively, the nucleus of the so-called mid-back-rounded vowel, i.e., the /ɔ/ or the diphthong /ɔw/[6] becomes at least [ə] and, in the forms of the dialect less modified by modern education and other standardising influences, a distinctive /ɛ/ . Once again then, we have a double compensatory dissimilation: unrounding (to /ɑ/) before a rounded glide and fronting before a back coda. Note that the less extreme version, phonetic *schwa* ([ə]), is easily seen to be only a phonetic variant of /a/ (the phoneme after unrounding), such as one find even in the standard dialect when /a/ on the short tone is non word-final; in fact a great many Burmese words standardly described as beginning with a reduced-clitic syllable are really words with an initial syllable on vowel /a/ and short tone, especially if immediately followed by a genuine reduced-clitic syllable. In fact, the previously cited word */a.rahaN/* in the standard dialect is a good case in point: it is generally transcribed as though it were /ərəhæ̃/, although careful attention reveals it is nothing of the kind, the relative shortness of the first vowel being the greater because of the clitic-reduction of the following vowel. And again, in spite of this secondary phonetic effect, the process that gives us [-ɛw-] from original /-ɔw-/ has got to be a phonological rather than a phonetic one, taking phonemic /ɔ/ into phonemic /ɛ/ .

In this connexion it is interesting that no such process applies to the demonstrably older layer of diphthongs. In particular, modern Burmese /awʔ/N/, arguably from Lolo-Burmese */ɔ/ (see Lehman 1970 and Benedict 1972) is subject to a different process of diphthong simplification. More exactly, at some no doubt earlier stage in the development of this dialect the quite anciently attested diphthongisation, which

as we said may go back to pre-Old Burmese, was simply undone. The nuclear vowel took on the rounding from the following glide, the glide was dropped, and the syllable coda became plain /ɔk/ŋ/, as in, for instance, the word |kyaung| (ɕɳɲɛ̃:) for monastery: standard Burmese /caw̃/, Upper Burmese /(k)yɔ̃ŋ/. The fact, by the way, that the conversion of initial cluster /ky-/ (etymological OB orthographical |kl-|) eventually into simple alveolo-palatal /c-/ seems never to have taken place in this dialect is only further evidence to be added to all sorts of other indications that this phonological change may have been relatively recent in Burmese as a whole, and probably was an innovation in other dialects in late MB or earliest modern Burmese.[7]

I have formulated the processes informally as assimilative and dissimilative, respectively, and as if it were plain that these processes affected the oral position of the vowel relatively to that of the syllable final. There is, however, good evidence that such processes (not uncommon in Tibeto-Burman generally, e.g., PLB *-ɑt -> Lisu -e, and *-ɑk -> Lisu æ), are driven not by articulatory position but rather by acoustic Second Formant (F_2) transitions (Thurgood and Javkin 1975). If the vowel (in this case /ɑ/) is adjusted to the F2 transition to the following segment in the syllable, then the two processes reduce to a single one (albeit, for the Burmese in question, some of its manifestations remain phonetic, others phonological) of assimilation. This is a distinct recommendation, certainly. However, it is by no means clear how one would state the process in terms of a feature-based phonology, and it remains a fact that the articulatory gestures that the feature-based rules are most nearly related to, and that realise the acoustic targets are assimilative in the case of fronting before a front final, dissimilative in the case of fronting before back finals.

Some further peculiarities of these Northern dialects are also worth looking at because they have a distinct bearing upon the analysis of the processes so far examined. WB 'wat/p' and 'Xwan/m' are consistently pronounced as /wiʔ/ and /wiN/, respectively,[8] whilst the WB '-ang' comes out as /ɛ̃N/ rather than the more standard /ĩ/. Plausibly, the 'w' must, as in the more standard dialects, have first raised and rounded the following vowel, which was subsequently

subjected to the by now predictable fronting before front finals. The existence of /-iN/ from 'wan/m' seems to have counter-motivated the further raising of /-ɛN/ (from 'ang') to /-ĩ/. Thus Standard /wuʔ/ (clothing) is, here, /wiʔ/, /wũ/ (burden) is /wiN/, whilst /ũ/ (to place before) is /tɛN/.

Most interesting perhaps, is what happens in the Northern dialects to the syllables written with final palatal closures (see Lehman 1970). The more standard dialects turn WB '-ac' (OB /-ic/) into /-iʔ/, but in the dialects under examination the outcome is /-iᵊ/. Thus, the numbers 'one' and 'two' come out as /tiᵊ/ and /hniᵊ/, respectively. I shall postpone the analysis of this fact until I can deal with it adequately under more general theoretical considerations, below. It is enough for the present to suggest that palatal finals were (cf. Lehman 1970) equivocal environments for the phonological rules of the language. This is readily seen in the multiplicity of ways WB '-añ' syllables are treated in virtually all dialects: as /-i/, /-ei/, /-ɛ/ and /-ĩ/, individual words often themselves varying over parts of this range.

IV. Conclusion.

It is altogether likely that the present Upper Burma dialects developed their distinctive characteristics in or round the early to mid Nineteenth Century. This, after all was the time of the rather gradual transition from MB to modern Burmese, a period of all sorts of linguistic changes in Burmese. Indeed, anyone familiar with formal Court prose works written in the earliest part of the Nineteenth Century can usually tell the difference between works composed at that time by up-and-coming men and those, such as the *tha-thana-lin-ka-ya sa-dan:* (သာသနာလင်္ကာ စာတမ်း see Lieberman 1976) written by men of a much older generation, for the works by the latter show remarkable and systematic syntactic differences from those of the former, indicating that the boundary between Middle and modern Burmese had to be in the mid-Eighteenth Century. This, however, must be the subject of a different paper.

In any case, the first vowel shift examined here is relatively recent, imaginably a currently live phonetic process, if Maran's attribution of the preservation of weak oral articulation features to the stop finals of Northern dialects is

right. The second is just as clearly a phonological process, but it is likely that it has at least a somewhat longer history, even though it may also be a current 'rule' of the phonology. For, it seems to be part of an old complex of dissimilative-compensatory phonological processes such as the rule that took OB /-ak/ into /et/. Moreover, there is evidence from the development in this dialect of the old palatal initials that the dialect in general may have begun to make its characteristic unique innovations earlier rather than later; say late in the MB period.

Now for the more theoretical considerations. It seems to me that, for one thing, the materials presented here raise hard questions about the proposal by Bradley (1982) that tone in Burmese is 'really' a sort of register, or phonation type phenomenon. It is, of course, possible to predict the pitch-contour phenomena from the clearly associated laryngeal phenomena whether one thinks of the latter as inextricably bound up with the former on the vowel itself or whether one thinks of the laryngeals as postvocalic segments in their own right. On either view, obviously, the phonological rules needed would be the same: in Standard Burmese, a [+hi] pitch would be predicted before any non-sonorant syllable final (whether or not an intervening nasal or glide were present): V->[+hi] / ___ (X)[α spread glottis, -α closed glottis]#. The contours, indeed, would be mapped into the whole final, nucleus and and non-occlusive parts of the coda, if any, according to the principle that (i) a breathy final, being long and continuant leaves time for the fundamental frequency to return gradually to neutral mid-pitch whilst vocalisation is gradually cut off (the case of the heavy tone, which, in prepausal position is breathy, long and slowly falling), (ii) a creaky glottal, being essentially produced by a glottal configuration that forces subglottal pressure to be reduced relatively to supraglottal pressure by relatively brief 'leakage' upward, will indeed 'creak,' that is, the pitch will fall off rapidly to neutral and be soon cut off as pressure balance between the cavities is restored, and (iii), with glottal checking, it will have no 'space' to fall, and will be cut off at once at its high point. This, of course, will predict all the three, or four tones as standardly described, three only if one insists upon the pregenerative, taxonomic view that there are no pitch *contrasts* on stopped syllables, and hence no

differential tones on such syllables — although we should then lack a principled account of the fact that these syllables are on a high-level pitch. The facts adduced in the present paper, however, clearly require that the laryngeal features be associated with definite postvocalic segments.

Either view, however, is acceptable under an autosegmental account of the assignment of pitch *and* the spreading of some of the associated laryngeal features over segmental phonology in a way that is becoming increasingly well supported. Indeed, it is not at all clear that the two views are necessarily distinct on an autosegmental account, so far as what is being claimed about the distribution of the relevant phonetic features of pitch and phonation type over the segments of a syllable is concerned (see Bennett 1989). The most complicated account imaginable would require nothing more than two relevant autosegmental strata: one with laryngeal/phonation features, the next higher with pitch features. But the facts adduced here seem to require a much simpler version, with pitch contours mapped onto finals, starting with the nuclear vowel at the left and proceeding rightward through successive non-occlusive segments of the coda.

For instance, to account for contours as sequences of level pitches, as seems generally well motivated phonetically and phonologically, we no longer require the highly controversial hypothesis that the vowel must have two segments in its underlying representation (see Maran 1971, Lehman 1973, 1975), because these effects are handled quite naturally by the downward mapping of pitch features onto segmental sequences in an autosegmental framework.[9] In short, one way or other, the facts adduced here, coupled with the virtues of an autosegmental framework, reduce Bradley's phonation type, or 'register' hypothesis about Burmese tone to merely a low-level phonetic observation, certainly true, but of at best equivocal theoretical status.

We cannot, taking the evidence so far presented, extrapolate our results to anything earlier than, say, Old Burmese (OB), perhaps pre-OB. The problem is ultimately whether one can or cannot reconstruct the origin of the tonal system at *PST by postulating its derivation from (rules

operating on the basis of) post-vocalic segments. Pulleyblank, for instance, (1986, summarising Haudricourt and other sources leading to his reconstruction) wants, on internal evidence, to reconstruct a series of postvocalic laryngeals, /-ʔ/ and /-h/ (ultimately from */-s/) from which the Early Middle Chinese tones, and ultimately the *PST tones B and C, respectively, are derivable by the sorts of pitch assignment rules adduced here for the Burmese. Benedict (p.c. and this volume) insists that comparative examination over the whole of S-T, and especially examination of Old Tibetan, fails to provide evidence for the reconstructed postvocalic segments even though he fully accepts the hypothesis that tone C is derivative (mainly, as he says in the present volume, '...from final /-s/.' How to resolve this? If indeed we can reconstruct at, say, pre-OB a phonological system with postvocalic laryngeal syllable codas from which the tones are systematically predictable, and if, nevertheless, we cannot (as Benedict argues) account for *ST tonogenesis in the same way, then we must be able to say how the laryngeal postvocalic codas came to exist in pre-OB.

Many branches of T-B certainly evince a close association of tone with various laryngeal phenomena even if only in the form of 'phonation types.' Moreover, Benedict (present volume) argues on general phonetic grounds that it is always possible, by the process that used to be called transphonologisation, for the laryngeal phenomena to be decoupled from the vowels, to be perceived as essentially the most salient clues to the 'tone' in the manner that Benedict (and earlier Henderson 1975) have called 'shuffling' of features, i.e., the way the quasi-continuous articulatory and acoustic phenomena are distributed phonologically onto discrete successive segments.

Even further, whether or not one wants to identify the tone of the checked syllables with any of the non-checked tones, clearly a pitch and contour are assigned to the checked tones on the basis of the postvocalic finals, so that it readily suggests itself that perhaps the same sort of rule assigned the tones, to begin with, in both sorts of syllable. Indeed, following Maran (1971), Lehman (1973) pointed out that the simplest account of tone in standard Burmese is bound to take account of the incontrovertible evidence that native speakers find the 'creak' of the short tone and the breathiness of the

heavy tone to be of primary perceptual salience. And with evidence in hand that the creakiness is phonetically some sort of glottal constriction, and the evidence from oldest Written Burmese that wrote the creaky tone with a final glottal sign and the heavy tone with final '-h'[10] and the fact that in standard Burmese dialects all pitch contour before checked, creaky and heavy tones begin 'high,' it became obvious to postulate a simple rule:

V->hi/__ [-sonorant]#.

The characteristics of the different contours that distinguish the various such tones would then follow as explained above. The system is elegant and phonetically right.

The reason it need not answer for earlier stages in T-B is the 'shuffling' effect,the ever-present possibility of the transphonologisation of the laryngeal phonation-type features. The same effect, however, also appears to make Benedict's argument a bit equivocal: on the one hand, there may be no warrant, on comparative grounds, for an *etymological* reconstruction of the postvocalic laryngeals as postulated by Pulleyblank; on the other hand we cannot necessarily conclude that at the *PST level, just in case the proto-tones (essentially A,B and, derivatively, C) were from the first associated systematically with phonation-type features, the latter may not have been already perceived, or been optionally perceivable as segmental. In any case, the association of tones and laryngeal phenomena may, from the first, have been assigned in principle by such straight forward rules. The increasingly attractive claims of Autosegmental phonology (e.g. Yip 1982, San this volume, Bennett 1990), which postulates a separate phonological level of pitch/tone, and has rules mapping these as contours over and onto the segmental elements, and which is therefore especially compatible with the phenomena of transphonologisation/shuffling, also suggest the basic correctness of rules that assign pitches to segments on the basis, for instance, of the nature of neighbouring segments.

Speculatively at least, one might go a step further. Considering the fuzziness of the distinction between pitch-accent systems and tone systems (Lehman 1973, Benedict this volume, Chelliah this volume), one might imagine that there is

an inherent connexion between tonogenesis and the development of monosyllabicism — here taken as the specification of each (non-clitic) syllable as a phonological word (not necessarily a lexically full word). Consider what is involved, then, in pitch-accent: the accentual marking of a particular syllable of a word as especially prominent. Now, if each syllable is itself a phonological word (say, as in Lehman 1973, is all syllable boundaries within a lexical word/entry are raised to the level of phonological word boundary [##]), the notion of relative prominence collapses. At best, it reduces to simply a differential marking of some kinds of syllables as against the more general sort. But Benedict (this volume and 1972) has already observed that the basic *ST distinction between proto-tone A and B often seems to be that B syllables are in some sense specially 'marked,' say in an inflexional and /or derivational way. But, in the circumstances, this is precisely what we should expect pitch-accent to be like in the environment of monosyllabicism. The secondary *ST tone C is, if anything, an even better case, being now incontestably understood as a secondary derivational and/or inflexional calque on, chiefly, tone A syllables/words.[11]

I can now return to the matter of what has happened in Northern Burmese to syllables ending in written palatal stops. Remember that instead of surfacing as /-iʔ/, as in Standard dialects, they appear here as /-iᵊ/, with perhaps occasionally some slight creakiness. Now, what we have to look at is the theory of 'feature geometry' (cf. Archangeli and Pulleyblank in press, Sagey 1986, San this volume), in which the features of the linear segments are decomposed in an implicational hierarchy (usually given as a classificatory tree) in such a fashion as to specify a grid of dependencies amongst the features both within segments and between 'neighbouring' segments. Technically, of course, feature geometry theory is consistent with a 'tiered' or a segmental-linear theory of phonology, but it appears more adapted to the former, and I shall take it that way. I have already indicated, above, that the final palatals are in some way equivocal in the phonology of Burmese. Note that alveolo-palatals are neither front nor back: in SPE (Chomsky and Halle 1968) terms, they are [-anterior] and [-back], whilst palatalised dentals and affricated dentals are in any event [+delayed release]. Assume, in feature-geometry terms, that a coda-final oral stop is required, in the

first instance, to be specified for the glottal configuration characterising glottal checking, and then to be either front or back so that the value of the preceding vowel can be determined (equivalently, so that the assimilation-dissimilation rules previously described can apply systematically). Then a final such as /-c/ will arguably be treated as follows.

The dominant glottalic feature will not be supported here when the oral articulation features are locally incompatible with it. In these circumstances, it will take the least marked opposite glottal configuration, that of a voiced, vocalised element, with the glottis neither spread nor adjoined and stiff. Arguable, this segment not being the syllabic nucleus, the unmarked, or neutral, value will be that of 'schwa,' [ə], which is precisely what the outcome is in these dialects.

Notes

[1] [hmā] + [te]-> [hmānde] / [hmānne]; [hmā] +[me] -> [hmāmme], where [hmā] = 'correct,' and [te] and [me] are, respectively, the non-future and future 'tense' endings: 'is right,' 'will be right.'

[2] Moreover, the nasalisation itself can be accompanied by glottality of some kind, as when such a syllable is on the so-called 'creaky' tone. In the northern dialects one rarely if ever hears this as creaky even in isolation, but only a short and very rapid fall in pitch, tending, again, to confirm Maran's analysis in terms of a sort of lowered glottal stop. The environment of any such arbitrary fronting rule would be something like:

$$\underline{\qquad} \begin{Bmatrix} ʔ \\ N(ʔ) \end{Bmatrix}$$

, which is indeed 'anything.'

[3] For quite unknown reasons, in this romanisation, we tend not to find the nasal closure of the first two written as velars. I suspect this may be because, in the case of the latter two the convention is reinforced by the Burmese orthography, whereas the shift of point of articulation of the final was more audible to European ears in the case of the stop than in the case

of the nasal finals, since the latter depended for their identification more on the nasalisation of the preceding vowel.

[4] Note that in OB the distribution was not quite the same, for whilst diphthongs could only be followed by velars, plain vowels might be followed by all sorts of finals.

[5] I have already stated the case for supposing that, certainly in the dialects in question, the creaky tone is indeed a postvocalic glottal occlusive.

[6] These are late diphthongisations, historically, derived from stopped syllables with plain vowel /u/, e.g. SB *louʔ., WB* lup (လုပ်), 'to do.' Maran (1971) provides evidence for Upper Burmese that the final is a weakly articulated and unreleased oral velar, along lines indicated earlier on in the present paper.

[7] The Eighteenth Century observers show no evidence of this palatalisation of initial clusters, and Shan borrowings from Burmese, arguably dating only back to MB times, and which can readily be shown not to be based on spelling pronunciations, preserve the initial /ky-/ clusters. It is also curious, but outside the intended scope of this paper, that, in our Upper Burma dialect, in rapid speech at least the initial /ky-/ reduces to simply /y-/, whilst orthographic initial /y-/ becomes /zʸ/. I suggest that this is the typical so-called push-chain effect that can only have been due to radical reanalysis as an unique innovation in the present dialect. The central fact seems to be the raising to maximum phonetic saliency of the friction normally associated with palatal articulation in many T-B languages. In this way, /y/ was realised as [yᶻ] and eventually as [zʸ], on which basis it was reanalysed as /zʸ/; at the same time, one supposes, the same process that led from /ky-/, by way of a similar heightened secondary effect, here palatalisation, to /c-/, led in the Upper Burma dialect to an even more complete dominance of the palatalisation, to the virtual elimination of the velar stop articulation, but not quite that: the velar became, a weak secondary feature, easily dropped in rapid speech.

[8] The minor complication is that if the 'w' clusters with a preceding initial consonant, the fronting in question is blocked, at least for most speakers. Presumably, in the non-cluster case, the /w-/ raises assimlatively fronted /-a-/ without rounding it. In the cluster-initial case, then, the fronting is blocked because the medial /-w-/ also rounds (in fact, merges with) the following vowel.

[9] E.g., where, in non-final position, a breathy final loses is laryngeality, it becomes essentially itself a vocalic segment, and the autosegmental pitch mapping rules will themselves ensure that the originally high pitch will not fall away; and indeed in this position, the Heavy Tone is simply long, high-level: the glottal configuration simply alters from [+spread] to [-spread]. In the case of the Creaky Tone, which in sandhi position is just short high-level, presumably a change from [+closed] to [-closed] will take leave no 'room' for the autosegmental mapping rule to assign a pitch to the 'segment' that is output of the sandhi rule because of the fact that the rapid and brief fall that comes about in final, non-sandhi position is really just phonetic, coming effectively in the transition to glottal cut-off, whilst the mapping rules must themselves actually assign a mid-level pitch to the breathy phonation segment, before sandhi application, 'because' the latter is at least a continuant, and even though the phonetic pitch has to be realised here too largely in the (longer) intersegmental transition.

[10] All syllables that do not begin with a consonant or a glide or liquid certainly begin here with a glottal stop that is arguably 'non-significant,' in such a fashion that the sign for the unmarked, inherent initial vowel, /a/ (written အ), stands for the glottal stop itself. The creaky tone was written at that time as ◌ဲ့, with the superscript sign of a final without a further syllabic vowel. The heavy tone, similarly, was written with the final mark over the letter 'h-', ◌ှ; and the more standard sign, :, for the heavy tone is itself directly descended from the Devanagari derivative -h final, the *visarga* of the Sanskrit grammarians.

[11] Two points must be pursued elsewhere: (a) the area, but not universal argument (see, e.g., Benedict and Sagart, both in this volume) that associates the tonogenesis with the increasing loss of precisely the polysyllabicity in which pitch-accent is properly defined, and (b) the distinct possibility that the ultimate source of the markedness of the B tone may have been something like augmentative vowel length, even in these non-checked syllables: the second mora/segment of the vowel would then have become deaccented, changing its laryngeal configuration in the process to that of /h/ (cf. remarks in the present text, below, about the erosion of the final palatal stops in Northern Burmese on an Autosegmental/ feature-geometry account.

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Projecting a Cambodian social identity

B. Jean Longmire
University of the Pacific

Erickson and Schultz, in their book The Counselor as Gatekeeper: Social Interaction in Interviews, define an individual's social identity as a set of attributes such as family background, educational achievement, ethnicity, etc. and define a performed social identity as the subset of these attributes that a participant reveals during the course of an encounter (1982:13, 16-17). The point I would like to make is that this performed social identity, when it becomes an important part of the message that a speaker wishes to convey, has a direct impact on the nature of the discourse, determining such things as what information must be foregrounded and what referred to only indirectly, and what lexical choices must be made including what reference terms will be used.

In order to examine what social identity a Cambodian would reveal in a job interview and how he or she would use the Cambodian language to reveal this identity, several Cambodian junior college and university students in the U.S. were asked to play the roles of Cambodian employer and prospective employee and create what they would consider "a good interview," one which might lead the Cambodian employer to employ the Cambodian being interviewed. These interviews, conducted in Cambodian, were videotaped and the students along with several Cambodian adults, who worked as teachers in Cambodia before the war, were asked to select the best interview. In the interview selected as "best," the interviewee was successful because he was able to structure his replies in Cambodian in such a way as to make clear his acceptance of the Cambodian values of collectivism, respect for hierarchy and willingness to accept the direction of superiors. In other words, the Cambodian being interviewed was successful because he clearly projected a Cambodian social identity, saying in effect, "hire me because my social values are the same as yours." This message, however, was not conveyed directly but rather conveyed through a careful selection of gestures and actions, a careful selection of