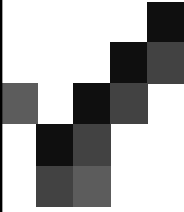


SEALS XVII – 2 September 2007



Phonological Scansion in Loanword Adaptation

Evidence from English Loans in Burmese

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Outline

1. Background on Burmese phonology
2. Adaptation of foreign segments
3. Adaptation of foreign onset clusters
4. Adaptation of foreign codas and coda clusters
5. Discussion and implications
6. Conclusions

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Background

- Burmese consonant inventory

	labial	dental	alveo.	palatal	velar	glottal
stops	p p ^h b		t t ^h d		k k ^h g	ʔ
affricates				tʃ tʃ ^h ʈ		
fricatives		θ ð	s s ^h z	ʃ		h
nasals	m̥ m		n̥ n	ɲ ɲ	ŋ ɲ	
liquids			l̥ l			
flap			r			
glides	w̥ w			j		

- voiced, voiceless unaspirated, and voiceless aspirated obstruents
- voiced and voiceless sonorants (including nasals at four different places)
- no labiodental fricatives or retroflex approximant

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Background

- Burmese vowel inventory

	front	central	back
high	i ī		u ō
mid	e	(ə)	ɔ
low		a ā	
diphthongs	ei ēi	ai āi	au āu ou ōu

- five oral monophthongs + three nasal monophthongs
- four oral diphthongs + four nasal diphthongs
- mid central vowel /ə/ only in reduced, non-final 'minor' syllables
- no low front vowel, no nasalized mid vowels, no /ɔi/ diphthong

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Background

- Burmese tone inventory (also cf. Cornyn 1944, Wheatley 1987, Win 1998)

		<u>characteristics</u>
🔊 low	[sù] 'protrude'	med. duration, low intensity, often rising
🔊 high	[sú] 'pricked'	breathy, long, high intensity, often falling
🔊 creaky	[su̥] 'collect'	creaky, short, high intensity, high pitch
🔊 glottal	[soʔ] 'put on ring'	very short, sharp glottal closure, high pitch

- tones are implemented via pitch and phonation
- tone that falls on schwa is neutral
- change in vowel quality with the glottal tone
- glottal tone considered here to be allotone of creaky tone

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Background

- Burmese phonotactics (also cf. Green 1995, 2002)

- basic syllable structure → C₁C₂V(V)C₃
 - C₂ = glides /w, j/ (but *l̥ [-labial]+j)
 - C₃ = /ʔ/ (or N)
- nasal vowels do not occur with glottal coda: *Ṽʔ]_σ
- the vowel /ɔ/ does not occur with glottal coda: *ɔʔ]_σ
- the diphthongs /ai, au/ always occur in closed syllables (i.e. with glottal coda): *ai]_σ / *au]_σ

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Questions

- How do the Burmese inventory and phonotactic restrictions constrain the nativization of English loanwords?
- How much is adaptation a phonetic vs. a phonological process (cf. Silverman 1992, Paradis 1996, Kenstowicz 2001, Steriade 2002)?

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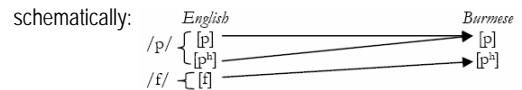
Consonant substitutions (in syllable onset)

- Labiodental fricatives /f, v/ → [p^h, b], respectively
 - e.g. [p^hĩ̃lã] 'Finland' ☞ [jũnibãsitĩ] 'university' ☞
- Onset /ɹ/ → [j] or [r]
 - e.g. [jèidijòu] 'radio' ☞ [bãbɛrã] 'Barbara' ☞
- Voiced palato-alveolar fricative /ʒ/ → [ʃ]
 - e.g. [mɛléiʃá] 'Malaysia' ☞

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Choice of substitution

- When choosing the phonetically closest substitution would result in a phonological merger, a different substitution is chosen (if available).
 - e.g. [kòu'pjùtã] 'computer' (*[kòu'p^hjùtã]) ☞ ☞
- English [p^h] → Burmese [p], not [p^h] (cf. Eng [f] → Bur [p^h])
- English [r] → Burmese [d], not [r] (cf. Eng [ɹ] → Bur [r])



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Vowel substitutions

- Low front /æ/ → [a, e]
 - e.g. [dʒɛpã] 'Japan' ☞ [dʒɛʔ] 'Jack' ☞
- Back rounded /ɔ, ɒ/ → [ou], [u], [au], or [o]
 - e.g. [sɛtɔu] 'store' ☞ [p^hɔʔ] 'Ford' ☞
 - [gauʔ] 'golf' ☞ [kəp^hĩ] 'coffee' ☞
- Diphthong /ɔi/ → [wai]
 - e.g. [bwáĩ] 'boy' ☞

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Vowel laxing via glottal stop epenthesis

- High front /i/ → [ɪ]
 - e.g. [sɪʔtĩmaʔ] 'City Mart' ☞
- Mid front /e/ → [ɛ]
 - e.g. [pɛʔpɛsĩ] 'Pepsi' ☞
- Low central /a/ → [ɐ]
 - e.g. [bɛʔsɛká] 'bus' (< bus + car) ☞

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Resolution of onset clusters

- Stop-glide clusters are preserved, unless illegal.
 - e.g. [kwèikà?ou?] 'Quaker Oats' [nəjùjau?] 'New York'
- All other clusters are resolved via epenthesis.
 - e.g. [dərä] 'drum' [ʔɪŋgəlä] 'England' [səp^hɪ] 'Sphinx' [bəsət̃] 'Boston'

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Adaptation of obstruent syllable codas

- Obstruent codas are debuccalized.
 - e.g. [kəɪɪʔ] 'hair clip' [màgərəʔ] 'Margaret' [bəreiʔ] 'brake' [dəíbɪʔ] 'David' [maʔ] 'March' [kólɪiʔ] 'college' [gəʔ] 'gas' [pəleiʔ] 'police'/ 'plague' [s^haiʔ] 'size' [ʔɪŋgəleiʔ] 'English' [dʒóus^hɛʔ] 'Joseph' [ʔɪɪʔzəbɛʔ] 'Elizabeth'
- Debuccalization occurs regardless of place, manner, phonation, or stridency.

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Adaptation of obstruent syllable codas

- Obstruent codas may also be deleted with concomitant creaky tone on the preceding vowel.
 - e.g. [sək̚] 'Scott' [hɔ̚dɔ̚] 'hot dog' [səp^hɪ] 'Sphinx' [kaɪ̚] 'count'
 - This adaptation occurs when the vowel is not compatible with a coda glottal stop (i.e. /ɔ/, nasal vowels).

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Adaptation of sonorant syllable codas

- Sonorant codas are generally deleted.
 - e.g. [ʔɪʔzəjéi] 'Israel' [wɪ̃s^hà] 'Windsor' [jà] 'rum' [p^hóu] 'phone' [ʔä kè] 'uncle'
 - Liquid codas are deleted outright.
 - Nasal codas are deleted with concomitant nasalization of the preceding vowel.

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Adaptation of coda clusters

- Sonorants are generally deleted, and obstruents are debuccalized.
 - e.g. [gauʔ] 'golf' [kwèikàʔouʔ] 'Quaker Oats'
[səkəʔ] 'skirt' [ʔəgouʔ] 'August'
[hábeʔ] 'Harvard' [ʔidɔʔ] 'Egypt'
- When glottal stop is disallowed, obstruents are deleted, leaving behind a creaky tone.
 - e.g. [səp^hɿ] 'Sphinx' [kaj̰] 'count'

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Discussion

- Initial scansion in Burmese loanword adaptation occurs on a phoneme-to-phone basis.
 - Both labials and coronals are adapted in such a way as to preserve phonemic distinctions.
- Secondary scansion (cf. Silverman 2002) is phonetically detailed.
 - Tense/lax vowel quality and length play a role in adaptation even though neither of these is distinctive within the language.
- Speakers are conscious of 'accidental' phonological gaps, which strongly constrain adaptations.
 - *ɔʔ, *ai_ɔ, *au_ɔ constraints result in various departures from the most faithful adaptation possible.

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Conclusion

- The case of Burmese loanword adaptation indicates a level of phonological scansion not normally assumed in models of loanword adaptation.
- Burmese loanword adaptation shows the influence of Burmese and English phonological considerations, as well as perceptual attunement to non-phonemic details of the speech signal.
- In adaptation, the role of bilinguals (who have access to both languages' phonology) should not be underestimated.

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