

Phonetic and Phonological Scansion in Loanword Adaptation

Charles B. Chang
University of California, Berkeley

In recent studies of loanword adaptation, two main sides have emerged. Phonological accounts (e.g. LaCharité and Paradis 2005) posit that foreign words are incorporated into a language on the basis of phonological equivalence between receptor language (L1) and source language (L2) phonemes by bilinguals with access to the phonology of both L1 and L2. On the other hand, phonetic accounts (e.g. Silverman 1992; Peperkamp and Dupoux 2003) emphasize the influence of low-level perceptual factors in the mapping of L2 forms to L1 forms. In this paper, I present evidence from Burmese in favor of an intermediate model incorporating both language-independent phonetics and language-particular phonology.

On the basis of a corpus of 278 loanword adaptations in Burmese, I first argue that while the adaptation of English loanwords involves multiple types of scansion like Cantonese (cf. Silverman 1992), one scansion in Burmese must be phonological. For example, English aspirated [p^h] is consistently adapted with Burmese unaspirated /p/ (cf. 1) rather than Burmese aspirated /p^h/, which is used instead to represent English [f] (cf. 2).

- (1) a. *penguin* > [p̥ɪŋ.gwɪŋ] b. *Poland* > [pòù.là̤] c. *computer* > [kòဦ.pjù.tà]
- (2) a. *file* > [p̥a̤ɪ̤] b. *form* > [p̥aṳ] c. *coffee* > [kɔ̤.p̥i̤]

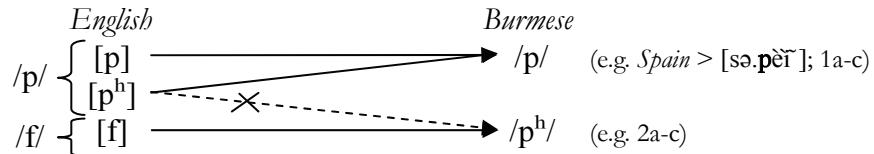
This mapping of English aspirated plosives to Burmese unaspirated plosives holds for all places of articulation and cannot be accounted for in a model where acoustic perceptual similarity is the primary consideration in adaptation.

A similar pattern is found in the case of English [r], which is rendered as Burmese /d/ (cf. 3) and is thereby prevented from falling together with a different segment adapted with Burmese /r/ – namely, English onset [r] (cf. 4).

- (3) a. *powder* > [pàṳ.dà] b. *radio* > [jèi.dì.jòù] c. *soda* > [s^hòṳ.dà]
- (4) a. *rifle* > [fà̤.p̥e̤] b. *rubber* > [fà.bà] c. *brake* > [bø.rei?]

Thus, the bilingual borrower appears to adapt words in Burmese so as to maximally preserve phonological distinctions (cf. Figure 1).

Figure 1. Maintenance of source phonemic distinctions in adaptation



However, while phonological scansion clearly plays a role in L2-to-L1 mapping, corners of the corpus indicate that a level of phonetic scansion must also be involved. For instance, borrowers pick up on a phonetically voiceless sonorant interval, leading to an aspirated adaptation of preceding stops, in stark contrast to the general disregard for allophonic aspiration seen above (cf. 5).

- (5) a. *Christ* > [k^bθə.rɪ?] b. *truck+car* > [t^bθə.ɾʌ?.ká] c. *cream soda* > [k^bθə.ɾ̩.s^bòù.dà]

This sort of phonetically detailed mapping cannot be accounted for in a model where borrowers' L2 perception is wholly constrained by L1 phonemic categories.

Similar attention to subphonemic detail is found in the adaptation of syllables with nasal-obstruent coda clusters (i.e. VNT). Here the phonetic laryngealization that occurs before voiceless stop codas leads to a bias in tone assignment, with the vowel usually surfacing with creaky tone instead of either of the other two possible tones (cf. 6).

- (6) a. *Sphinx* > [sə.p^bɪ] b. *count* > [k^bɔ̃]

However, when the final obstruent is voiced, the tone assigned to the syllable is never creaky (cf. 1b). In short, syllable structures that are phonologically equivalent are nevertheless discriminated in adaptation on the basis of phonetic information (which in this case is not even distinctive in the source language).

Thus, these data indicate not only that phonology and phonetics each play a role in loanword adaptation, but also that attention is paid to both at the same time (cf. 6b, which shows phonological scansion of the onset, but phonetic scansion of the rhyme). This result contrasts with cases discussed in the literature of an L1 adapting words from one L2 phonologically, but words from a different L2 phonetically (e.g. Dohlus 2005), as well as cases of an L1 adapting words from the same L2 phonologically or phonetically depending on the time of the borrowing and the contemporary contact situation between L1 and L2 (e.g. Heffernan 2005). I propose, based upon information about the degree of bilingualism in the speech community (e.g. Baker and Jones 1998, Thein 2004), that the mixed nature of loanword adaptations found here arises from an intermediate state of bilingualism in which borrowers have some, but not full knowledge of the phonology of L2.

Taken together, these findings suggest that a model of loanword adaptation incorporating both phonetics and phonology is the most empirically sound. While loanword adaptations are indeed highly influenced by phonetic similarity, bilinguals play a leading role in adaptation, allowing the phonology of L2 to have a profound effect on loanword adaptations in L1.

References

- Baker, Colin, and Sylvia Prys Jones. 1998. *Encyclopedia of Bilingualism and Bilingual Education*. Clevedon, UK: Multilingual Matters Ltd.
- Dohlus, Katrin. 2005. Phonetics or phonology: Asymmetries in loanword adaptations – French and German mid front rounded vowels in Japanese. *ZAS Papers in Linguistics* 42: 117-135.
- Heffernan, Kevin. 2005. Phonetic similarity and phonemic contrast in loanword adaptation. *Toronto Working Papers in Linguistics* 24: 117-123.
- LaCharité, Darlene, and Carole Paradis. 2005. Category preservation and proximity versus phonetic approximation in loanword adaptation. *Linguistic Inquiry* 36(2): 223-258.
- Peperkamp, Sharon, and Emmanuel Dupoux. 2003. Reinterpreting loanword adaptations: The role of perception. In *Proceedings of the 15th International Congress of Phonetic Sciences*, 367-370.
- Silverman, Daniel. 1992. Multiple scensions in loanword phonology: Evidence from Cantonese. *Phonology* 9(2): 298-328.
- Thein, Myat. 2004. *Economic Development of Myanmar*. Singapore: Institute of Southeast Asian Studies.