On the Influence of Phonetics, Phonology, and UG in Loanword Adaptation

In recent studies of loanword adaptation, two main sides have emerged. Phonological accounts (e.g. LaCharité and Paradis 2002, 2005) posit that foreign words are incorporated into a language on the basis of similarity between receptor language (L1) and source language (L2) phonemic categories 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 (cf. Kenstowicz 2001, to appear; Yip 2002, 2006; Broselow 2004; Heffernan 2005) incorporating both language-independent phonetics and language-particular phonology.

On the basis of a corpus of 200 loanword adaptations from English into Burmese, I first show that certain, seemingly accidental phonological gaps alluded to previously (cf. Cornyn 1944, Wheatley 1987, Win 1998) are in fact systematic and the result of constraints whose effects can be plainly seen in loanword adaptations. For instance, while in native Burmese words glottal stop codas co-occur with high vowels, low vowels, and the mid front vowel /e/, they never co-occur with the mid back vowel /ɔ/; nonetheless, it is not possible to posit a constraint such as *[ɔʔ] on the basis of this static pattern since there is no way to tell whether the distribution is the result of a systematic ban or a historical accident. On the other hand, loanword data as in (1a-c), in which configurations of /ɔ/ and a coda obstruent are altered in a variety of ways, indicate that a constraint *[ɔʔ] does exist in the grammar.

Second, I argue that while Burmese loanword adaptation involves multiple scancions like Cantonese (cf. Silverman 1992), the first scansion in Burmese is phonological. For example, English allophonically aspirated [pʰ] is consistently adapted with Burmese /p/ (cf. 2a-c, 4a) rather than Burmese /pʰ/, which is used instead to represent English [f] (cf. 1a, 3a-c, 5a). This mapping cannot be accounted for in a model where acoustic perceptual similarity is the only consideration in adaptation. The adaptation of English [r] displays a similar respect for source phonemics. English [r] is rendered as Burmese /d/ (cf. 4a-c, 6a), which prevents English [r] from falling together with a different segment that is adapted with Burmese /ɾ/ – namely, English onset /ɾ/ (cf. 5a-c). Thus, the bilingual borrower appears to adapt words so as to maximally preserve phonological distinctions. This adaptation strategy is schematized in Figure 1 for the case of the voiceless labials.

However, while phonological scansion clearly plays a role in L2-to-L1 mapping, a level of phonetic scansion must also be involved. As seen in (6a-c, 7a-d), the Burmese ‘checked’ tone ending in glottal stop is used to approximate a lax or short vowel quality in English, even in open syllables and even though neither tense/lax vowel quality nor length is distinctive in Burmese phonology. This sort of phonetically detailed mapping cannot be accounted for in a model where borrowers’ L2 perception is wholly constrained by L1 phonemic categories.

Finally, some universal phonological principles emerge in the treatment of L2 consonant clusters, which present a problem in Burmese because of a ban on most onset clusters and all codas except for glottal stop. In the case of medial clusters, the bilingual borrower does not always “get it right”, sometimes creating an adaptation that changes the original L2 syllabification (cf. 7a-d). What is striking about these misinterpretations is that they always obey the principle of onset maximization. Heterosyllabic clusters are misanalyzed as onset clusters and broken up by epenthesis (cf. [Spırıṭe > [sọ.pọ.jaiʔ]). They are never misanalyzed as coda clusters and debuccalized (cf. [August > [ʔɔ̀.gouʔ], [Egypt > [ʔi.dʒiʔ]).

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. The relative ranking of these phonetic and phonological considerations with respect to each other and to UG principles, then, appears to be a language-specific matter.
Examples and Figures


(2) a. penguin > [pɪ̀.gwɪ̀] b. Poland > [po.ǜ.łu.̃] c. computer > [kə.pʃĩ]

(3) a. file > [pʰa.ʔĩ] b. form > [pʰə.ʔĩ] c. coffee > [kə.pʃĩ]


d. At.lan.tic > [ʔaʔ.ə.ʔa.ʔa.ʔĩ.teĩ]

Figure 1. Maintenance of source phonemic distinctions in adaptation

<table>
<thead>
<tr>
<th>English</th>
<th>Burmese</th>
</tr>
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<tbody>
<tr>
<td>/p/</td>
<td>/p/</td>
</tr>
<tr>
<td>/f/</td>
<td>/pʰ/</td>
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</tbody>
</table>

(e.g. Spain > [sə.pə.ʔĩ]; 1a-c)

(e.g. 2a-c)

References


