

## Introduction

Yoonjung Kang · Keren Rice

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The current volume is a collection of studies in loanword phonology of East Asian languages. In recent years, loanword phonology has grown into a topic of theoretical importance and some of the major advances in the area have been made based on the study of loanwords in East Asian languages (e.g., Silverman 1992; Yip 1993, 2006; Ito and Mester 1995; Oh 1996; Shinohara 2000; Kenstowicz and Sohn 2001; Kang 2002, 2003; Kenstowicz 2005; Iverson 2005; Iverson and Lee 2006; Kawahara 2006; Miao 2006; Kenstowicz and Suchato 2006; Davis and Cho 2006; Kubozono 2006; Ito et al. 2006). The contributions to this volume build upon these previous studies and extend the empirical domain of the research into languages of this geographical area as well. In this introduction, we briefly introduce three main issues that are raised by the articles in this volume: the level of native language representation upon which the mapping from one language to the other is defined, the transformation of loanwords over time, and phonology-external factors.

### 1 Level of representation

When foreign words contain sounds or structure that is not found in the native language, the foreign input is mapped to the “most similar” structure that is available in the native language. The questions arise as to what it means to be similar and to the level of representation where such similarity is defined. Focusing

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Y. Kang (✉)  
Department of Humanities, University of Toronto Scarborough,  
1265 Military Trail, Scarborough, ON, Canada M1C 1A4  
e-mail: kang@utsc.utoronto.ca

K. Rice  
Department of Linguistics, University of Toronto, 130 St. George Street,  
Toronto, ON, Canada M5S 3H1  
e-mail: rice@chass.utoronto.ca

on the level of representation, much has been written about the nature of the input language representation—namely, whether the phonological or phonetic representation of the lending language serves as an input to the adaptation—and substantial arguments have accumulated on both sides. See, for example, Paradis and LaCharite (1997) and LaCharite and Paradis (2005) for the phonological input view; see Peperkamp and Dupoux (2003) and Peperkamp (2005), among others, for the phonetic input view. Our major concern here is the nature of the borrowing language representation, and again we can make a somewhat simplistic distinction between a phonological view versus a phonetic view.

On the one hand, what we may coarsely refer to as a phonological view proposes that the contrastive aspect of the native language dictates the relative similarity between the input and the output (e.g., Clements 2001; Herd 2005; Iverson and Lee 2006; Drescher forthcoming). On the other hand is a view that loanword adaptation reflects the relative perceptual similarity of relevant structures and is sensitive to phonetic details that may not necessarily be representable in terms of distinctive features (e.g., Steriade 2001, unpublished manuscript; Fleischhacker 2005; Shinohara 2006). Under this view, adaptation refers not only to the aspects of the input signal that are considered phonologically contrastive in the native language but non-contrastive redundant phonetic details also play a role. Often, the two perspectives may converge on the same choice in loanword mapping but not always (see Kang (2007) for relevant discussion).

*Lin* presents a case where a non-contrastive feature in the native phonology seems to take precedence over a contrastive feature in loanword mapping. *Lin* examines the adaptation of English vowels in Mandarin. Her general finding is that while the height feature of the input vowel is easily altered, the backness feature is maintained fairly consistently, not only for the high vowels for which backness is phonologically contrastive in Mandarin but also for mid vowels for which backness is predictable from the context and hence is considered not contrastive. Therefore, *Lin*'s findings seem to suggest that the vowel adaptation refers to a level of representation in Mandarin that is less abstract than the underlying representation that encodes the contrast maximally economically. A possible conclusion is that backness is more perceptually salient than height. However, whether this is the case or not remains to be tested.

The actual distinction between the two views of the nature of the borrowing language is more subtle than it may seem because much depends on how the contrastive categories of the language are defined and how a particular phonological category is related to its phonetic correlates. Reflecting the complexity of the issue at hand, the papers in the current volume present nuanced answers to this question.

*Kim* examines how the Japanese voicing contrast in stops and voiceless geminates is borrowed into Korean and how the three-way laryngeal contrast in Korean stop consonants is borrowed into Japanese. Based on the loan data, she proposes that L1 speakers scan the acoustic signal of L2 sounds for cues to L1 distinctive features. Crucially, she proposes that “several phonetic properties collaborate together in the distinctive vs. enhancing relation in loanword adaptation.” In other words, both those phonetic properties that define the core of L1 distinctive

features and enhancing phonetic attributes that reinforce the distinctive contrast of L1 language (cf. Keyser and Stevens 2006) play a role in loanword adaptation.

*Hsieh and Kenstowicz* also crucially refer to the notion of enhancement to account for the pattern of tonal adaptation in Lhasa Tibetan (LT) from Chinese tone and English stress. Interestingly, although LT has tonal contrasts, the tone of the Chinese and the stress of English are completely ignored and tone assignment is determined based on the voicing of the initial consonant, in a fashion familiar from the tonogenesis literature (Hombert et al. 1979); more specifically a high tone is assigned following voiceless obstruents and a low tone is assigned following voiced obstruents and sonorants. This is despite the fact that there is no consistent correlation between initial consonant and phonological tone in synchronic Lhasa Tibetan and any such correlation available in the data involves phonetic enhancement. Unlike the cases discussed by Kim, where the enhancement attributes play a supporting role, in Hsieh and Kenstowicz's case, the enhancement attributes seem to play a central role, even overriding a direct mapping for input pitch pattern to the native tone pattern.

*Matsuura* examines the accentual realization of English loanwords in Nagasaki Japanese, which are assumed to be borrowed through Tokyo Japanese. Matsuura shows that in contrast to Kagoshima Japanese (Kubozono 2006, forthcoming), in Nagasaki Japanese (NJ) the accentual adaptation is sensitive not only to the presence or absence of pitch fall (considered to be contrastive in NJ) but also to the exact location of the pitch fall (considered to be predictable and redundant in NJ) in the input. This seems like a case where a non-contrastive and redundant detail of a native language plays a crucial role in determining the adaptation pattern. However, it is not obvious whether an alternative analysis of the native phonology is possible where the underlying contrast is defined as one of position of pitch fall as opposed to a presence or absence of a pitch fall.

## 2 Transformation of loanwords over time

While the papers discussed so far are concerned with the “adaptation” of foreign structure into native language, the other papers in the volume are concerned with the transformation that loanwords undergo over time after they are borrowed into the language.

*Luke and Lau* examine the pattern of truncation in English loanwords in Cantonese in Hong Kong. A quantitative analysis of diachronic data shows that in more recent innovations, a clear asymmetry between nominal and verbal loans emerges in their truncation pattern—namely, nouns tend to be bisyllabic and verbs tend to be monosyllabic, contrary to a general bisyllabic preference reported in earlier studies on Cantonese loans (Silverman 1992; Yip 1993). They further show that the size restriction in loans is a reflection of the corresponding statistical tendency of the native lexicon. This adds to the body of literature that shows that speakers are aware of the statistical tendencies of the lexicon and may extend that knowledge in novel word formation (e.g., Albright 2002; Ernestus and Baayen 2003; Zuraw 2000, 2007).

*Kawahara and Kang, Kenstowicz, and Ito*, on the other hand, discuss emergent patterns in loanword alteration that do not have an apparent basis in the phonological pattern or statistical tendency of the native language. *Kawahara* shows that voiced geminates in loanwords are more likely to be devoiced under pressure of OCP than voiced singletons. Such differential treatment of voiced singletons and geminates is an emergent pattern that cannot be attributed to the native phonology as there is no evidence regarding the relative ranking of faithfulness constraints that affect the voicing of singleton vs. geminate in native phonology. *Kawahara* attributes the asymmetry to a perceptual instability of voicing in geminates vs. singleton. At the same time, the OCP(Voi) that triggers the devoicing does not have a perceptual basis although it evolved from OCP(Nas) of an earlier stage of the language, showing that both phonetically natural and unnatural constraints exist in the same grammar and interact with each other.

*Kang et al.* examine how English loans that are transmitted to Korean via Japanese lose aspects of Japanese influence. Interestingly, they find that not all Japanese traits are equally likely to be replaced by the direct English borrowing pattern, and a systematic pattern is revealed that is not derivable from the native phonology in any straightforward way; Japanese characteristics that are related to epenthetic vowels and consonants' laryngeal features are the most likely to be replaced and the characteristics related to non-epenthetic vowels are the least likely to be replaced while other consonantal characteristics show an intermediate degree of resistance to change. The authors argue that the systematic pattern reflects perceptual saliency or the degree of confidence adapters have in particular sound substitutions.

### 3 Methodology and phonology-external factors

The papers in the volume also bear on important methodological issues in loanword phonology and in phonology more generally. Many of the papers in the volume employ a quantitative method in their data gathering and analysis. Given the variable nature of loanword data, such a quantitative approach to data is essential. Such an approach makes it possible to observe tendencies in the data that may be partially obscured by non-grammatical or non-phonological factors in adaptation process. For example, semantic factor plays a large role in determining the form of English loanwords in Mandarin (Miao 2006). This makes it challenging to discern a phonological pattern in the data. However, such a difficulty is overcome by an examination of an extensive body of data where the various factors involved can be identified.

A further challenge involves how we can systematically deal with the role of extra-phonological factors that are at play in loanword adaptation. These factors include the role of orthography (e.g., Vendelin and Peperkamp 2006; Detey and Nespoulous 2008) and the sociolinguistic context under which borrowing takes place (e.g., Haugen 1950; Smith 2005, Heffernan 2007). For example, Heffernan (2007) addresses the importance of understanding sociolinguistic conditions of borrowing in a detailed study of the adaptation of Chinese loanwords into Japanese

under various conditions. Several papers in the volume allude to these factors (Luke and Lau on the stages of bilingualism and the pattern of borrowing, Hsieh and Kenstowicz and Kang et al. on the role of orthography).

These phonology-external factors are of interest in and of themselves. In addition, in order to properly identify the grammatical features at play in loanword phonology, it is essential to sift out the non-linguistic factors.

Loanword phonology continues to raise important issues for the understanding of sound systems in general. The articles in this volume both address old controversies and raise new and complex issues for future study.

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