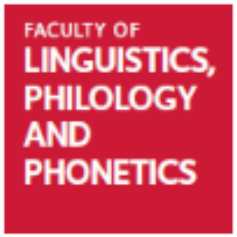

Vowel Adaptation of English Loanwords in Mandarin Chinese

Xiaoye Wu

xiaoye.wu@st-hughs.ox.ac.uk

13/01/2023

Overview

- study how vowels are adapted from English to Mandarin Chinese by using an on-line adaptation experiment
- focus on phonological and perceptual factors
- examine how loanwords are adapted and processed which casts light on cross-language perception and production

Outline

- Literature review:
  - Loanwords
  - Theories of loanword adaptation
  - English-to-Mandarin vowel adaptation

- Methodology: on-line adaptation experiment vs. corpus
  - Materials
  - Subjects
  - Procedure
  - Data processing

Loanword adaptation

- loanwords (borrowing words): adopted words from one language into the speaker's native language

- borrowing language/recipient language: L1
- source language/donor language: L2

- English-to-Mandarin adaptation: predominantly done by bilinguals

Borrowing scenarios

- First stage-elicited forms: a small group of bilinguals get in contact with L2 & produce some unstable adaptation forms

- Established loanwords: have mental representation in L1 & widely used in the community

Adaptation approaches

- Phonemic loans (sound-based)

  e.g., *Disney -> di2 shi4 ni2*
- Semantic loans

  e.g., *Microsoft -> wei1 'micro' + ruan3 'soft'*
- Graphic loans: alphabetic words

  e.g., *CEO, WTO*
- Hybrids

  e.g., *Internet* -> ying1 te4 + wang3 'net'

Levels of adaptations

- Segmental:

  phoneme substitution-the closest vowels and consonants

- Syllable structure:

  phonotactic constraints of L1 phonology-segments are altered, deleted or inserted

- Suprasegmental:

  tone/stress assignment

Adaptation models

- input -> process -> output

  (maximal similarity)

- Input: acoustic signals or phonological representations?

- Nature of adaptation process: phonological (category proximity) or phonetic (perceptual similarity)?

The Phonetic Approximation View (Peperkamp, 2005)

- Input: L2 acoustic signals without involving phonology
- An L2 segment is directly mapped into the phonetically closest L1 segment.

The Phonological Approximation View (LaCharité and Paradis, 1997)

- Input: L2 underlying representation
- Category Preservation Principle: If a given L2 phonological category (feature combinations) exists in L1, this L2 category will be preserved in L1 in spite of phonetic differences.
- e.g., English high lax vowels /ɪ/ and /ʊ/ -> Spanish /i/ and /u/

  rather than /e/ and /o/ whose F1 & F2 are closer
- Category Proximity Principle: If a given L2 phonological category does not exist in L1, it will be replaced by the closest phonological category which is defined by constraint-based rules.

The Perception-Phonology View (Silverman, 1992)

- Input: L2 acoustic signals
- Scansion 1: acoustic signals -> preliminary representation

  inventory constraints apply

- Scansion 2: L1 phonology – phonotactic constraints apply

Previous studies

- haven’t reached a consensus about the adaptation processes
- have very few studies on English-to-Mandarin vowel adaptations due to the seemingly chaotic variations
- only corpus studies have been done
- -> online adaptation production experiment on English-to-Mandarin vowel adaptations

Methodology: on-line adaptation vs. corpus

- drawbacks of corpus studies:
- established loanwords are hard to determine the adaptation approaches (e.g., semantic loans but with phonological similarity: *shampoo* -> xiang1 bo1 ‘perfumed wave’ & route (e.g. in-direct adaptation from Cantonese and Shanghainese)
- online-adaptation can serve as a complement
- focus on phonological determinants, more direct perceptual mappings
- get rid of effects from non-phonological and non-linguistic factors

- forced close contact
- manipulate the first stage of loanword adaptation by producing elicited forms

Research questions

- How vowels are adapted from English to Mandarin Chinese (in the lab setting)?
  - ➢ What are the choices of vowel substitution?
  - ➢ What factor(s) play an important role in determining similarity?
    backness, height, roundness; duration
  - ➢ Do they show more consistency or variability?

- Which theoretical model does English-to-Mandarin vowel adaptation data support?

Materials

- Stimuli: 11*12= 132 nonce English words
- /CV.mi/-disyllabic, sound like an English word
- C={b, d, g, p, t, k, m, n, f, s, l}
- V={ɪ , i, ʊ , u, ɛ, eɪ, ə, oʊ, æ, ʌ, ɑ, ɔ}

Subjects

- For Recording: a phonetically trained native American English speaker (female, age=19)

- Participants: 15-20 native speakers of Mandarin Chinese with high proficiency in English

Procedure

- Conducted the experiments in a soundproof booth in the Language and Brain Lab
- Randomised sequence of stimuli via headset, self-paced study
- They are told they will hear made-up English words and their task is to provide a most natural adaptation of these English words into a Mandarin Chinese word (focusing on the first syllable)
- They will say and write down the Pinyin of the words on the paper sheet

Data processing

- Check the agreement between the oral and written responses
- Exclude
  - responses that do not match
  - responses that are not legal Mandarin sounds (violate phonotactic constraints, e.g., */kī/)
  - responses that are possible syllables but not real Mandarin words (tonotactic gaps, e.g. */fō/)

Preliminary observations

- English lax vowels show significantly more variations and ambiguity for categorisation in adaptation than tense vowels;

- English monophthong [æ] is predominantly preferred to be adapted into Mandarin diphthong [ai];

... hypotheses that English-to-Mandarin vowel adaptation may not be a purely phonological process

References

- Haugen, E. (1950). The analysis of linguistic borrowing. *Language,* 26, 21—231.
- Haunz, C. (2007). *Factors in on-line loanword adaptation* [Doctoral thesis, University of Edinburgh].
- Lin, Y. (2008a). Variable Vowel Adaptation in Standard Mandarin Loanwords. *Journal of East*
- *Asian Linguistics,* 17, 363-380.
- Lin, Y. (2009). Loanword adaptation and phonological theory. In Yun, X. (eds.), *NACCL-21: Proceedings of the 21st North American Conference on Chinese Linguistics*, 1-12. Smithfield, Rhode Island: Bryant University.
- Miao, R. (2005). *Loanword Adaptation in Mandarin Chinese: Perceptual, Phonological and Sociolinguistic Factors* [Doctoral dissertation, Stony Brook University].
- Paradis, C. & LaCharité, D. (1997). Preservation and minimality in loanword adaptation. *Journal of Linguistics*, 33, 379-430.
- Peperkamp, S. (2005). A psycholinguistic theory of loanword adaptation. In M. Ettlinger, N. Fleischer & M. Park-Doob (eds.), *Proceedings of the 30th Annual Meeting of the Berkeley Linguistics Society*, 341-352. Berkeley: Berkeley Linguistic Society.
- Silverman, D. (1992). Multiple scansions in loanword phonology: Evidence from Cantonese. *Phonology*, 9, 289-328.

Thank you very much!

Xiaoye Wu

xiaoye.wu@st-hughs.ox.ac.uk

13/01/2023