

The epenthetic vowel in Persian loanwords: The difference between bilinguals and monolinguals

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Introduction

- Loanwords usually go through changes to match the phonological system of the target language (Uffman 2006).
- A number of languages like Persian block consonant clusters word-initially (Jabbari & Samavarchi 2011).
- An epenthetic vowel /e/ is usually added to loanwords with an initial consonant cluster in these languages.

English		Persian
stadium	→	estâdiyom
steak	→	esteyk

- The phonetic property (e.g. the vowel length) of epenthetic vowel is claimed to be different from the properties of native vowels (e.g. shorter) (Sterade 2001).
- Language contact might also affect the phonetic properties of the epenthetic vowels (Cheng 2008).
- Persian-English bilinguals are expected to produce epenthetic vowel /e/ shorter than Persian monolinguals, approaching their English monolinguals due to their higher exposure to English

Research Questions

- Is the length of the epenthetic vowel /e/ in Persian loanwords borrowed from English shorter compared to the native vowel /e/ in Persian?
- Is there a difference between Persian monolinguals and bilinguals with respect to the length of the epenthetic vowel in loanwords?

Design

Independent Variables		Dependent Variable
Target Word	Speaker Groups	Vowel Length
Loanword (e.g. estâdiyom)	Monolingual	
Native Persian (e.g. estaxr)	Bilingual	

Participants

- 20 Persian monolinguals living in Iran
- 20 Persian-English bilinguals raised in Canada graduated at least from high school

Instrument

- 44 target words in the object position of a carrier sentence:

Subject + (Persian Words/Loanwords) + Verb

Babak (estaxr/estâdiyom) dus na-dâr-ad
Babak (pool/stadium) like NEG-have-3SG
'Babak doesn't like the swimming pool / stadium.'

- The subject is always a proper noun ending in a voiceless stop /k/
- Main stimuli are mixed with 88 filler items as in below:

Babak (pizza) dus na-dâr-ad
Babak (pizza) like NEG-have-3SG
'Babak doesn't like pizza.'

- All stimuli are recorded using a Persian synthesizer in a robot voice

Procedure

- Both monolingual and bilingual groups attend a Skype meeting due to the pandemic.
- Bilingual groups take a Bilingual Language Profile test (Birdsong et al. 2012) and a score is given for their dominance in both languages.
- Participants listen to the robot voice and repeat what they hear.
- The Skype meeting is recorded for further analysis.
- The vowel length is measured in Praat (Boersma & Weenink 2020).

Data Analysis

- All data analysis is done in R software package (R Core Team 2013).
- Mixed effect modelling method with Speaker Group and Target Words as fixed effects and Participant and Item as random effects with the most complex model:

$VowelLength \sim TargetWord * SpeakerGroups + (1|Participant) + (1|ItemNumber)$

- Model comparison is used to select the best-fitting model.
- The same analysis is used in the bilingual group with degree of the language dominance as a new fixed effect factor:

$VowelLength \sim TargetWord * Dominance + (1|Participant) + (1|ItemNumber)$

Predictions

- The length of the epenthetic vowel is expected to be significantly shorter than the native vowel:

estâdiyom < estaxr

- Bilingual speakers are expected to produce shorter epenthetic vowel compared to their monolingual counterparts:

estâdiyom (Bilinguals) < estâdiyom (Monolinguals)

- A negative correlation is expected between the degree of dominance in English and length of the epenthetic vowel. In other words, the more exposure to English the shorter the epenthetic vowel.

↑ Dominance in English : Vowel length ↓

Timeline

- Due to the pandemic, I went through a set of ethics modification and transferred in-lab meetings to Skype virtual meetings. As the ethics approval has been granted recently, I am in the middle of recruiting participants which will be hopefully done within a month.

Selected References

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